

TRANSPORTATION AND ECONOMIC DEVELOPMENT
IN TANZANIA

by

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ABSTRACT

Before economic development can take place in a country, there must be a minimal amount of social and economic infrastructure. Good transportation is regarded as one of the prerequisites to rapid economic growth. To be effective, however, it must be related to needs of the country concerned.

In the early development of Tanzania, transportation facilities were built mostly for strategic and administrative purposes. Economic motives were secondary, and paramount only in cases where there was hope for immediate returns, like the exploitation of a new mine. The only other economic reason was to facilitate trade in raw materials and manufactured goods between the metropolitan power, other industrialized countries, and Tanganyika. It was also believed that the provision of railways would lead to rapid economic development.

However, the provision of railways in the hope that they would generate economic growth was unsuccessful. Instead, railways became a burden to the country because they operated at a loss and had to be subsidized. At the same time, the loans borrowed to build the railways had to be amortized at an annual rate of between 4 - 4-1/2%. Thus, the railways proved too costly a mode for initiating economic growth.

The "cost of capital" used to build railways was totally beyond the means of the country in its early stages of economic growth. It crippled the financial and capital availability for economic development in general. Not only had the country limited capital for development, but other disadvantages, such as being a Mandate Territory, which resulted in further flight of capital. Thus, the total amount of capital used to repay the railway debt before 1948, diverted capital which should have been invested in other sectors of the economy to establish a base for future development.

It was at this stage that roads came to be preferred as a less costly mode than railways for opening up new areas for development. The policy adopted was to provide a "country-wide Low-Cost" road system. First, this policy placed too much emphasis on building trunk roads at the expense of feeder roads. Second, it overlooked the geographical characteristics of the country. Finally, the roads which were built were of too low a standard. The net result was the road system did not provide effective links to the rural areas, the mainstay of the population and economy of the country. Also, areas with high growth potential had insufficient number of roads, while less prosperous areas were oversupplied with them. But, even more so, the roads deteriorated very fast with the rapid increase in volume of heavy vehicles and traffic. Consequently, maintenance costs rose

very rapidly, calling for increased expenditure. This limited the amount of money which could be spent in further road construction, such as the building of rural feeder roads. Increased maintenance costs diverted capital resources from other sectors of the economy, thereby inhibiting balanced economic growth.

In contrast, other factors, though accounting for less capital investment, have been very crucial in the economic growth of the country. The most important factor has been world prices for export crops, especially that of sisal. This crop became important after the fall of rubber prices at the beginning of this century, and not with the building of the railways to which it is usually attributed. Since then, fluctuation in the world price of sisal has affected the revenue of the country and levels of expenditure on new capital works. During the Korean boom, when prices for this crop were favourable, it provided sufficient revenue and encouraged increased expenditure in capital works, in which road development ranked very high.

Other factors which accounted for a stable growth include the centralization of marketing of cash crops through cooperatives and marketing boards. The establishment of these institutions made possible the payment of high prices during years of unfavourable world prices from funds accumulated when world prices were good. This has encouraged increased agricultural production, resulting in a rise of

income to the farmers and hence demand for consumer items, especially imports. These institutions also undertake to process, auction, and ship the crops of the farmers to markets overseas, in return for a minimal charge on the farmers' income. This has enabled the subsistence farmer to produce his crops at a much more economical basis than if he was on his own.

Despite deficiencies in the transportation system, the economy of the country grew. But the levels of growth achieved have remained low because of inadequacies in other sectors of the economy. In agriculture, the continued use of primitive methods of production has been the major limiting factor in increased levels of production.

The failure to take cognizance of these problems in the past has limited the effectiveness of transportation on economic development and has resulted in an unbalanced growth. The impact of transportation has also been limited because it depended on imports for equipment and other essentials. A local transport industry, as in the case of the developed countries, is still far from being established. This has been confined to railway repair shops, garages and gas stations.

The above are the findings from the examination of the thesis of this study, in that:

Rail and Road transportation as initially developed, and despite increased investment in the facilities of these two modes, was not as conducive to economic

development as compared to other factors accounting for levels of economic growth achieved. In view of this, and of limited capital resources for development, increased investment and expenditure on rail and road transportation diverted scarce resources from other essential sectors of the economy, such as agriculture. Also, because the tangible benefits from rail and road transportation were less than its costs, the opportunity cost of invested capital was high. This was the case for capital invested in railways before 1948, and in roads thereafter.

This study also points to the fact that the role transportation can play in the economic development of a developing country is different from that experienced in the developed countries. In addition, in the light of growth based on planned development, a sectorial approach to transportation is not enough. Transportation has to be evaluated in terms of how it can assist in rapid fulfilment of the goals of the Five Year Plan. In making decisions on future investments in the economy, priority should be given to those sectors of the economy which are central in enabling the achievement of goals of the Five Year Plan.

Within the transport sector, decisions on further investments should be based on a proper evaluation of transport needs of the country. It should also be guided by the role transportation has played in the past to assist rapid growth.

For example, a closer examination and assessment of past performances of rail and roads in the development of the country will provide guidelines for a transportation system to service increased production. It will also enable the planner to discover where the deficiency lies in the economy as a whole. The inadequacy of a transportation system may be due to lack of other facilities, such as storage, or a processing plant as has been the case in some parts of Tanzania.

In future, organization of transport, especially rail and road, should be pursued through policies which will facilitate coordination and integration of the two modes. Another immediate need is a transportation plan to assist in developing a well balanced transport system. In view of the formation of the East African Community, this should be done both at National (micro) and Regional (macro) levels. A National Transport Board should be formed to carry out the above functions.

The issue of whether to develop rail or road as the most suitable mode for further development should also be properly evaluated. It would appear, however, that both modes have a role to play because of their complementary nature, the geographical characteristic of the country, and in assisting the formation of a Regional Economic Group including Kenya, Tanzania, Uganda, Ruanda, Urundi, Zambia, Somalia and Ethiopia. Transportation should also be made an integral part of the "Ujamaa Village" planning process. Finally, there should be

continuing research in appraising transportation problems in developing countries, so as to establish a theory for transport research and development.

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INTRODUCTION

Statement of the Problem and its Importance

The majority of the developing countries are seeking to accelerate their economic growth through planned development based on priorities and allocation of resources in projects, which will ensure the highest benefits and fulfilment of the goals set out in the development plan. Two factors which underlie this type of development are: first, the time factor, since most of these development plans relate to a period of five to seven years; and second, the capital, which tends to be limited. Thus, proper evaluation of proposed projects in different sectors of the economy becomes imperative in order to allocate scarce capital resources where it is most urgently needed.

A distinctive feature of resource allocation in the developing countries, has been the large amount of capital being invested in transportation. In Nigeria, at one time, transportation constituted 46.5% of the public sector investment.¹ In India, in the first three development plans, expenditure on railways was 47% in the first plan, 67% in the second plan, and 60% in the third plan. Expenditure on roads

¹Owen, W., Strategy for Mobility (Washington, D.C.: Brookings Institution: Transport Research Programme, 1964), p. 45.

CHAPTER I

TRANSPORTATION AND ECONOMIC DEVELOPMENT

1. The Function of Transportation

The function of transportation is to move people and goods from one place to another. By so doing, friction in space is overcome and factors of production are made mobile, in response to market forces. Transportation, as a factor in production, therefore, creates "place utility"¹, by moving goods from where they are produced to where they are wanted for consumption. An efficient transportation system ought to provide this service in the shortest possible time and at the lowest economic cost.

The way a transport system develops and its subsequent improvement will depend on the physical environment of the country, its economic, social, and political characteristics. These factors in one country may lead to the development of a successful transport system, while in another much less so. Transportation is not an independent variable in economic development. Its role, in assisting rapid economic growth, will not only depend on the "economics of transportation", but

¹Fair, L.M. and Williams, W., Economics of Transportation (New York: Harper and Brothers), p. 3.

how these are influenced by physical, economic, social, and political factors.

2. The Provision of Modern Transportation in a Developing Area

The establishment of modern transportation in the developing countries was to prove superior to primitive methods of transport which prevailed in these areas. The major reason is that mechanized transport was capable of overcoming the vast distances quickly and cheaply as compared to portage, which was inefficient and expensive. Thus the need to link hinterlands to ports and, subsequently, to overseas markets, made railways superior to portage both in terms of cost and time saved. In the case of Uganda, for example, the arrival of the railway at the beginning of this century reduced transportation costs from six shillings per ton mile to twenty cents per ton mile, and travel time from over half a year to between two or three days by portage and railway, respectively.²

As shown above, the impact of a modern and efficient transport system is evaluated by the extent to which it makes reduction in transport costs and travel time possible. Increased speed leads to capital savings which can be channelled for development in other sectors of the economy.

It is now over half a century since modern means of

²Hawkins, F.K., Road and Road Transport in an Underdeveloped Country: A Case Study of Uganda (London: Colonial Research Studies No. 32, Her Majesty's Stationery Office, 1962), p. 25.

transport were provided in developing countries. But in these countries, the picture is still a mixture of primitive and modern modes of transportation. This reflects the immaturity in the transportation system of these countries and their inability to provide an all round modern transport system due to limited capital. Although establishing a modern transportation system is the goal of practically every developing country now engaged in the modernization of her economy, it is unrealistic to overlook the primitive transport methods altogether for two reasons. First, the establishment of a modern transport system will take a long time -- in the meantime, dependence will be on the primitive methods of transport which are gradually being replaced. Second, primitive transport methods may still satisfy certain types of demand more economically and efficiently than modern means of transport. This has been pointed out in relation to some economic activities in West Africa.³

3. The Nature of Transport Investment

The establishment of a modern and efficient transportation system involves considerable capital investments. The magnitude of this investment is further complicated by the fact that, once the money has been invested, it can only be recovered either from revenue or social benefits which are

³United Nations, Transport Problems in Relation to Economic Development in West Africa (E/CN. 14/63), p. 22.

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³United Nations, Transport Problems in Relation to Economic Development in West Africa (E/CN. 14/63), p. 22.

⁴ intangible. This factor is significant in areas with limited capital for economic development and is far more relevant today than in the past, when the administration of most of the developing countries was in the hands of colonial powers. In the past, decisions to invest in transportation were motivated by immediate returns in the form of profits by the exploitation of minerals. In the present situation, both local and outside capital for development is scarce and in big demand by all the different sectors of the economy. Moreover, capital from outside sources in the form of aid and loans is in competition between all the developing countries. Also, the socio-political principles adopted by some of the countries have tended to frighten away private capital. Thus, the responsibility of providing the infrastructure lies solely with the national government or publicly owned agencies.

Despite limited capital funds for development, however, transportation is being allocated a bigger proportion than other sectors of the economy. This has been pointed out as an indication of the importance of the transport sector in the over all economy.⁵ It can also be argued that this is a "forced investment", because many of the developing countries have inherited a transportation system which does not

⁴Fromm, G., (ed.), Transport Investment and Economic Development (Brookings Institution: Transport Research Programme, Washington, D.C., 1965), pp. 36-37.

⁵Owen, W., Transportation and Economic Development: Highway Research Record, No. 115 (The National Academy of Sciences - National Research Council, Washington, D.C., 1966), p. 1.

facilitate rapid internal mobility. Since one of the development objectives is to expand internal markets for import substitution industries, there is no alternative except to establish an internal transport system which will enable quick movement of people and goods at reduced costs.

When dealing with transport problems in a developing country, it may be necessary to distinguish between transport problems connected with facilitating external links and those which are for internal movement. The former are usually well established and the problem is not of providing completely new facilities, but of improving the existing ones. This is not the case with problems related to internal links in which no facilities may be present.

4. Transport and Economic Growth

Transportation is a necessity, but it is not a sufficient condition for economic development. This appears to be the current view pertaining in most studies on transportation and economic development. For example, Heyman attributes the American development not so much to the provision of transportation but rather:

by the golden opportunities, the powerful attractions of the west: the vision of denser forests, richer mines, wider fields and busier towns that pulled the trapper, the lumberman, the miner, farmer and the cattleman irresistably westward. ⁶

A survey of literature on the economic development of

⁶Fromm, op. cit., p. 31

the developing countries tends to lead one to a similar conclusion. The hope for quick returns from the exploitation of hidden "El Dorados", in unexplored parts of regions like Africa, was an important force encouraging investment in railways.

But there are other factors, too, which ought to be overcome. These may be environmental, economic, social or political. A transportation facility which influences a great number of people, as well as being appreciated as to what it might accomplish,⁷ and followed by improvement in methods of agricultural production, better marketing facilities, and stable prices, will have a greater impact on the economic development than the one which does not consider the overall economy. Investment in transportation should be balanced with investment in other sectors of the economy.

5. Organization of Transportation

Transportation is a service to the land; it is also a link between all sectors of the economy and can constitute a separate entity of the economy. As a transportation system progresses to maturity, competition tends to develop between the different modes. In the case of rail and road, each mode has specific advantages for carrying particular kinds of traffic economically in respect to the length of haulage involved. Railways are well suited for movement of bulky goods

⁷Wilson, G.W., and others, The Impact of Highway Investment on Development (Brookings Institution: Transport Research Programme, Washington, D.C., 1966), p. 193.

at long distances while road transport is suitable for short distance movement of less bulky items. In the case of rail and road, this competition has resulted in the former losing high priced traffic to the latter, with consequential loss in profits and, in some instances, resulting in uneconomic operations. This phenomenon is characteristic of the mature transport environment in the developed countries. Control was exercised in order to avoid misallocation of resources and to safeguard the revenue of railways, especially if these were publicly owned.

Based on the experience of the developed countries, it was feared that the above situation would occur in the developing countries in the process of rail and road development. The tendency was, therefore, to discourage competition and safeguard railway revenue by restricting and regulating road transport. In the former British Colonies (e.g., East Africa), the method used was restrictive vehicle licensing on the model operated in the United Kingdom.⁸ This move was premature because of the inadequacy of transport facilities. In developing countries, unlike the developed areas, policies were needed which would have maximized the use of all modes of transportation in such a manner as to facilitate co-ordination.

⁸Hawkins, op. cit., p. 136.

CHAPTER II

1. THE EVOLUTION OF RAIL AND ROAD TRANSPORTATION IN TANZANIA

Introduction

The first attempt to establish a modern transport system in Tanganyika dates back to the 1870's. In 1876, Mackinnon and Buxton undertook to construct a road from Dar-es-Salaam to Lake Nyasa, as an attempt to open up the interior to modern commerce to replace the slave trade. The road extended inland for seventy-three miles but because of tsetse fly it proved to be of little use. Attempts to use¹ bullocks for transportation were also unsuccessful.² The last attempt to open up the mainland was when the Sultan of Zanzibar, Seyyid Majid, who claimed suzerainty over the area, granted Mackinnon and his friends a concession -- The Mackinnon Concession. This concession included among other privileges, "the exclusive right to regulate the navigation

¹Coupland, R., The Exploitation of East Africa: The Slave Trade and the Scramble (Faber and Faber Ltd., 2A Russel Square, London), pp. 302-303.

²Smith, E.W., The Earliest Ox-Wagons in Tanganyika - An Experiment Which Failed. Part I: Tanganyika Notes and Records, Vol. 40, Sept. 1955, pp. 1-14; Part II: Tanganyika Notes and Records, Vol. 41, Dec. 1955, (Government Printer, Dar-es-Salaam), pp. 1 - 15.

of rivers and lakes and the construction of roads, railways and telegraphs".³ The scheme never came off the ground. The development of a modern infrastructure had to wait until after the scramble for East Africa was settled by the Heligoland Treaty in 1890, when Tanganyika became a German Colony. The initial development of the Colony was undertaken by the German East Africa Company.

A. The Development of Railways

1. 1894 - 1919

The German East Africa Company built the first railway line, the Nordbahn (Tanga Line). The line was constructed from 1896 to 1911, during which time 220 miles of railway track was laid. The slow construction of this line is attributed largely to the inadequacy of funds. Work on the line had to stop for five years after the initial year of construction. The Imperial Government had no interest in the line, although in the end it came to the rescue of the railway.⁴

In contrast, the "Mittlelandbahn" (Central Line), was built at a speed and excellence of construction nowhere equalled in Tropical Africa. Proper financial arrangements, in which the railway company operated virtually like a public

³Coupland, op. cit., p. 307.

⁴Eberlie, R.F., The German Achievements in East Africa; Tanganyika Notes and Records, No. 55, Sept. 1960 (Government Printer, Dar-es-Salaam), pp. 196-197.

corporation, ensured the rapid construction of the line.⁵

This line has remained the most important undertaking in the railway history of Tanzania in terms of mileage. The line begins at Dar-es-Salaam harbour on the Indian Ocean and ends at Kigoma on Lake Tanganyika, a distance of 780 miles. It divides the country almost into two halves. Other railways built during the German Administration included the Tabora-Kahama line, which was part of a projected railway line to the south west part of Lake Victoria and Ruanda Urundi; and a tram line of 60 centimetre gauge from Lindi to some 55 miles inland. A line from Kilosa to Iringa and subsequently to Mbeya and Mbozi was also proposed.⁶ But the First World War, which was to result in the transfer of German East Africa to Britain (Tanganyika) and Belgium (Ruanda-Urundi), ended German plans and marked the end of the first era of railway development.

1920 - 1945

The second era of railway development was begun by the reconstruction of the railway lines, especially the Central Line which was destroyed during the German retreat.

In this period, railway construction was mostly in the

⁵Ibid., pp. 201-202.

⁶Gillman, C., A Short History of Tanganyika Railways: Tanganyika Notes and Records, June 1942 (Government Printer, Dar-es-Salaam), pp. 27-30.

form of extension of existing lines. The Tabora-Kahama line, started by the Germans, was extended to Mwanza on the south of Lake Victoria, from February 1925 to April 1928. A total of 236 miles of railway lines were built. The Tanga line was extended to Arusha in 1929, a distance of 55 miles from Moshi. The only new railway line built at this period was the Manyoni-Kinyangiri branch line started in 1930 and completed in 1933. The line was 93 miles long, bringing the total railway mileage constructed in this period to 384. The Manyoni-Kinyangiri railway, however, proved to be uneconomic and was removed between 1944 and 1947.⁷

1945 - 1961

A total of 280 miles of railway was built in this period. The first 135 miles of railway construction between 1946 and 1950 was precipitated by the discovery of lead at Mpanda. The area was linked to the Central line at Kaliwa.

The other 145 miles of railway line were associated with the Groundnut Scheme. The scheme led to the construction of the Southern Railway and a new port at Mtwara between 1948 and 1954. After the abandonment of the Groundnut Scheme, the line was never operated at a profit. It had to be subsidized by the government until it was removed in 1962.* A shorter line from the Central line to Kongwa, also associated with the scheme, was removed and replaced by a road.

⁷Ibid., p. 112.

* (for details, see Chapter IV, Case Study No. 2).

An important feature of railway development in 1948 was the amalgamation of the Tanganyika Railway system, together with that of Kenya-Uganda railway, to form the East Africa Railways to be administered by the East Africa High Commission. The significance of this amalgamation will be discussed in detail later. But the move was described by the East Africa Royal Commission in 1953, as:

a most necessary first step in the rationalization of transport in East Africa, and it is very doubtful whether without it Tanganyika could have raised the loan capital which has since been authorized for expenditure on the Tanganyika Section. 8

Since 1948, therefore, the railways of Tanganyika became part and parcel of the East African Railway System. It ceased to be a responsibility of the Tanganyika government, although the government undertakes to guarantee loans on international markets borrowed by the East African Railways and Harbours Administration.

1961 to Present

Between 1961 and 1965, a total of 141 miles of railways have been built. The Ruvu-Mnyusi Link Line, providing a link between the Tanga and Central Lines, has a total length of 120 miles. The line was begun in 1960 and opened to traffic in August 1963. The other rail construction is the Mikumi-Kidatu extension into the Kilombero Valley built

⁸East Africa Royal Commission 1953-1955 Report (London: H.M. Stationery Office), Cmd. 9475, p. 124.

between February 1963 and June 1965. This line now forms part of the proposed Tanzania-Zambia Railway. Over half of the investment to be spent on railway development during the Five Year Plan was for the Mikumi-Kidatu railway extension. The total expenditure during the plan period, including funds carried over from previous allocations, is as follows:

TABLE 1

F.Y.P. - 1964-69
PROPOSED RAILWAY EXPENDITURE

Project	£'000
1. Completion and extension of railway beyond Kidatu.....	£ 6,410
2. Moshi/Kalambweni cut-off.....	1,100
3. Rolling Stock.....	1,120
4. Train Control, Mwanza/Tabora.....	22
5. Air-brake conversion.....	115
6. Ballasting, Central Line.....	100
7. Mwanza Line, relaying.....	2,600
Total	£11,467

F.Y.P. - Five Year Plan.

⁹Tanganyika Five Year Plan for Economic and Social Development, 1st July, 1964 - 30th June, 1969 , p. 57.

The railways built between 1896 and 1965 are shown on Map 1. Table 2 summarizes the total number of railway track miles in Tanzania at the end of 1966.

TABLE 2
RAILWAY MILEAGE OF TRACK IN TANZANIA IN 1966,
BY CLASSIFICATION

	Running Lines	Total Mileage of Single Track, incl. sidings
I. <u>Main Lines:</u>		
Dar-es-Salaam - Kigoma	779.48	919.08
Tanga - Moshi	218.68	257.72
Mnyusi-Ruvu Link	117.06	119.51
II. <u>Principal Lines:</u>		
Tabora - Mwanza	235.99	265.55
III. <u>Minor Branch Lines:</u>		
Moshi - Arusha	53.62	59.02
Kilosa - Mikumi - Kidatu	66.85	74.65
Kaliwa - Mpanda	130.86	135.78
Total	1,602.54	1,831.31

Source: East African Railway and Harbours Annual Report 1966 (Nairobi, Kenya: Government Printer), Statement No. 14, p. 55.

B. The Development of Roads

The development of roads was not as systematically carried out during the German colonial administration as was the case with the railways. Virtually no important road development took place during the German administration. The Germans concentrated their efforts on providing bridges, ferries and rest houses on important caravan routes, as well as settling soldiers on small holdings which supplied food to travellers.¹⁰

1920 - 1945

After the First World War, roads were made by improving tracks made hurriedly to facilitate the movement of war supplies. Lack of funds made any extensive road programme impossible. Despite poor road standards, road transportation began to assume importance and by 1938 long distance portage had almost disappeared as buses and lorries became a familiar feature in settlements and main roads.¹¹

The earliest major road improvement was undertaken on the military track between Kilosa and Iringa.¹² Unfortunately, this road passed through a tsetse infested area, thus making a choice of another route necessary. In 1927, the first

¹⁰Harlow, V., Chilver, E.M., and Smith, A. (eds.), A History of East Africa, Vol. II (Oxford: Clarendon Press, 1965), p. 143.

¹¹Ibid., pp. 625-626.

¹²Moffet, I.P. (ed.), Handbook of Tanganyika 2nd Edition (Dar-es-Salaam: Government Printer, 1958), p. 92.

survey of the route, which was to form part of the Great North Road, was undertaken between Iringa and Mwenzo, and from Dodoma to Arusha.¹³ In the same year, a decision was made to build the Dar-es-Salaam - Morogoro Road.¹⁴ The construction of the Great North Road was completed in 1932. The total length of this road is more than 800 miles, and has remained the most important road work ever to be built in the transportation history of Tanzania. Its outstanding feature arises from the fact that both its sections, lying north and south of the Central line, were built through some of the most difficult (but also beautiful) high terrain associated with the Great Rift Valley.

A number of roads were also built to provide access to gold mining areas. The road from Itigi to Chunya, some 250 miles in length, was completed in 1937.¹⁵ In 1939, a road was built to link the Urwira goldfields with the railway at Uvinza.¹⁶ By this period, all the important gold mining areas of the time -- such as those in the Musoma District --

¹³Ibid., p. 97.

¹⁴Ibid.

¹⁵Ibid., p. 117.

¹⁶Provincial Commissioners' Annual Report 1939
(Dar-es-Salaam: Government Printer), p. 100.

had been provided with reasonable road communications, some of which were reported to be all weather roads.¹⁷

By 1936, a total of 13,928 miles of roads were reported, classified as follows:¹⁸

TABLE 3
CLASSIFICATION OF ROADS, BY 1936

Class of Road	Miles
Township Roads.....	213
District Headquarters Roads.....	97
Main Roads.....	2,784
District Roads, Grade A	1,478
District Roads, Grade B	9,356
Total	13,928

By 1945 only a rudimentary road system had been developed, mostly on an ad hoc basis.

1945 - 1961

A definite policy for road development came into force with the adoption of the first Development Plan in 1946. A number of factors had contributed to this. First,

¹⁷Stockley, G.M., "Outline of the Geology of Musoma District: Being a Preliminary Geological Survey of Musoma Goldfields with the exception of the Nigoti and Ikoma Areas", Geological Survey Dept., Bulletin No. 7 - 1935 (Dar-es-Salaam: Government Printer), pp. 3-4.

¹⁸An Economic Survey of Colonial Empire, 1936, Colonial Studies No. 149 (London: H.M. Stationery Office), p. 46.

the failure of the Manyon-Kinyangiri railway led to the belief that road construction provided a less expensive¹⁹ method of opening up new areas for development. Second, with the transfer of railways to the East African High Commission in 1948, the responsibility of the Government in providing communications was confined to road development. The main policy objective for road development was to provide a country-wide "Low-Cost Road"²⁰ system. The aim was to develop a pattern in the form of:

a "grid" of trunk roads, four running from north to south, and three from east to west. To these trunk routes, main feeder roads must be provided, and to these latter district feeder roads to the outlying markets and productive areas.²¹

There is no explanation given in the "Development Plan" for adopting the "grid" pattern of trunk routes, although the World Bank Report attributes it to "the fact that the natural flow of traffic carrying the territory's main export crops and the bulk of the trade in imported and locally²² produced goods is along lateral routes". Thus, the road pattern was complementary to the railway system which runs from east to west. The North-South trunk routes were to

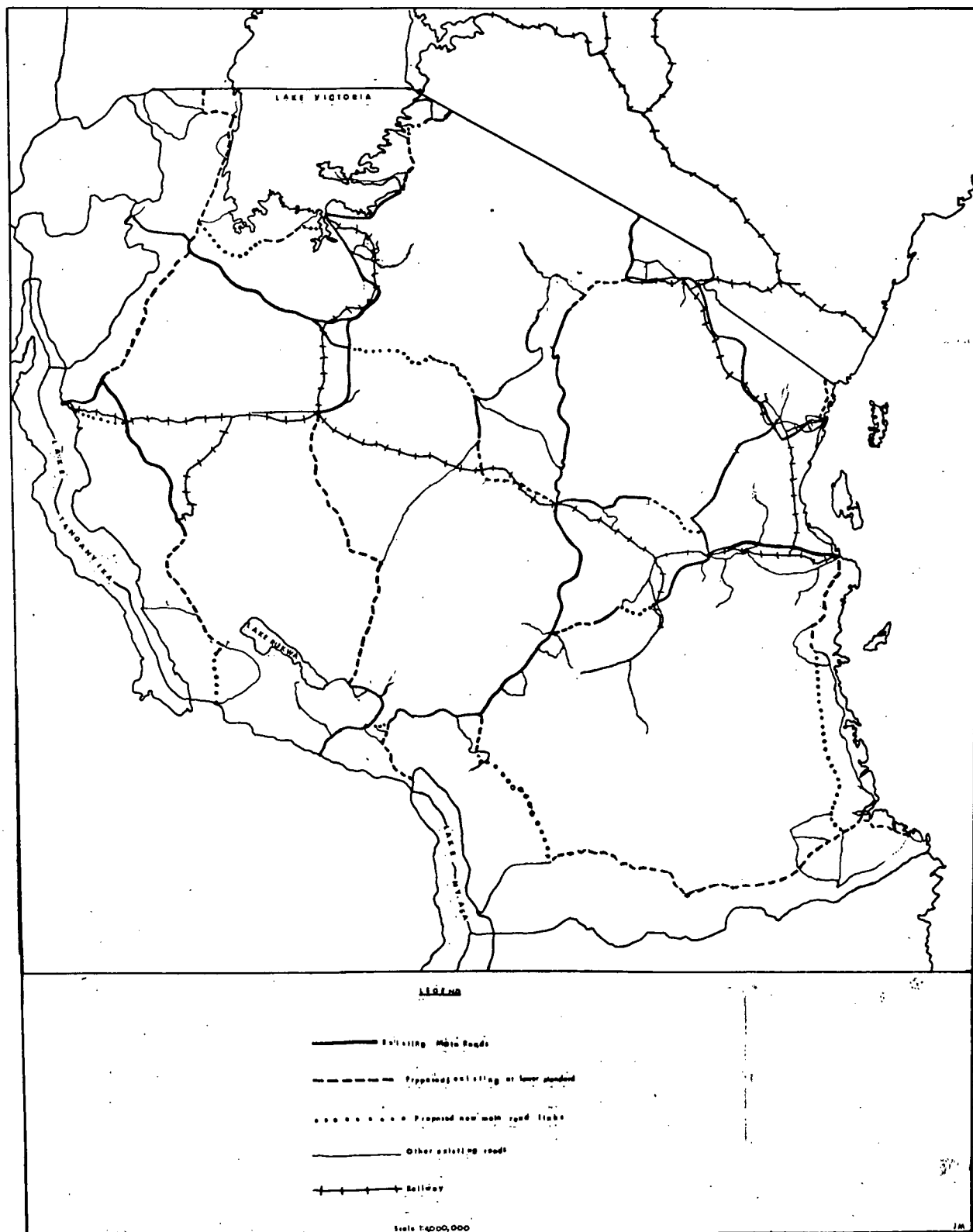
¹⁹Development Plan 1955-1960, Capital Works Programme (Dar-es-Salaam: Government Printer, 1955), p. 12.

²⁰IBRD., The Economic Development of Tanganyika (Dar-es-Salaam: Government Printer, 1960), p. 153.

²¹Development Plan 1955-1960, op. cit., p. 13.

²²IBRD., op. cit., p. 155.

MAP: DEVELOPMENT AND IMPROVEMENT OF TRUNK ROADS UNDER 1955-60



Source: Development Plan, 1955-1960, op. cit.

provide for movement in a north-south direction. The system also evolved as a result of linking roads which were already in existence at the promulgation of the 1955-1960 "Development Plan". In fact, the major feature of road development at this period was the improvement and upgrading of the existing roads, rather than the construction of new ones. Map 2 shows the proposed pattern of Trunk Roads under the above-mentioned Plan. The proposed expenditure under this Plan was allocated as follows:

TABLE 4 (a)
PROPOSED EXPENDITURE
UNDER 1955-1960 DEVELOPMENT PLAN

1. Development of Natural Resources	£ 4,950,000
2. Communication	7,470,000*
3. Urban Development	3,215,000
4. Electricity	2,000,000
5. Social Services	5,293,667
6. Public Buildings	1,950,000
7. Africa Housing	970,000
<hr/>	
Total £25,848,667	

* Of the approximate £7.5 million allocated for provision of communications, roads accounted for over 50% of this total, which was to be spent as shown in Table 4 (b) following.

²³Development Plan 1955-1960, op. cit., p. 4.

²⁴Ibid., p. 14.

TABLE 4 (b)

PROPOSED EXPENDITURE UNDER
1955-1960 DEVELOPMENT PLAN - ROADS

1. Trunk Routes	£ 2,243,000
2. Feeder Roads (incl. Territorial main and local roads)	1,289,000
3. Urban Roads	588,000
4. Reserve for unforeseen roads	150,000
<hr/>	
Total	£ 4,270,000

Appendix A gives a detailed analysis on how much was to be spent on Trunk, Main and Local feeder roads during the plan period.

By 1950, the country had a total number of 17,012 miles of classified roads. This number was increased to 21,459 miles at the end of 1962. The total increase of Territorial, Local and District main roads between 1950-1962 was 4,183 miles. Within the three classes, the greatest increase was that of Local (provincial) main roads. There was an increase of 3,194 miles of Local main roads, as compared to 722 miles of Territorial roads and 167 miles of District (feeder) roads. The high increase of Local main roads was largely for administrative reasons rather than for encouraging agricultural development, in view of the lack of feeder (District) roads linking them to the rural areas. Table 5, on the following page, summarizes the number of miles of roads built between 1950 and 1962.

It is of interest to note at this stage that the policy of concentrating on the provision of main roads at the expense

TABLE 5
MILEAGE OF CLASSIFIED ROADS
1950 - 1963

Year	Town- ship Roads	Other Settle- ment Roads	Terri- torial Main Roads	Local Main Roads	District Roads	Total
1950	338	87	3,039	3,055	10,493	17,012
1956	502	126	3,506	3,993	11,055	19,182
1957	490	135	3,517	4,319	10,934	19,395
1958	490	135	3,593	4,521	11,029	19,768
1959	490	138	3,588	4,781	11,033	20,030
1960	495	186	3,774	5,176	10,833	20,464
1962	486	203	3,861	6,249	10,660	21,459
1963	-	-	4,005	6,105	-	

Source: The United Republic of Tanzania, Statistical Abstract 1964 (Central Statistical Bureau - Directorate of Development and Planning - 1965, Government Printer, Dar-es-Salaam), p. 61.

of feeder roads was praised by the World Bank Report:

Up to the present, the Government's policy has been to build up the main road system to all weather standard, passable at all seasons, and to attend to feeder road improvement at a strictly limited scale. This was the right policy to start with; a feeder road could serve little improvement until the main road could take its traffic. The alternative of providing a complete system of main and feeder roads area by area, would have prejudiced the economic development of important areas of the territory and would have severely hampered administration. 25

1961 to Present

Road development since independence is first marked by a further change in policy during the Three Year Plan 1961/62 - 1963/64. This Plan had three main objectives, one of which was the development of communications with particular emphasis on providing feeder roads in the rural areas. 26

The allocation of the total capital expenditure under the Plan is shown on Table 14 (b), Page 70, Chapter III.

Of the £6.9 million allocated for communications, power and works, about two-thirds of it was for road development. Trunk roads were allocated £3.2 million as compared to £950,000 for feeder roads. 27 The rationale guiding these allocations is discussed in detail on page 71. However, the

²⁵IBRD., op. cit., pp. 155-56.

²⁶Smith, H., Readings in the Economic Development and Administration of Tanzania (Institute of Public Administration, University College; Dar-es-Salaam: Oxford University Press, 1966), p. 349.

²⁷Ibid., p. 54.

extent to which the road programme under the Three Year Plan could be implemented was limited by the amount of finance available. Not all the money needed to accomplish the road programme under the Plan was obtained. This has necessitated the carrying forward of road programmes of the Three Year Plan to be included in the present Five Year Plan. (see Appendix B)

Under the Five Year Plan, the policy proposed for road development is still that of providing a country-wide "Low-Cost Road".²⁸ The four objectives set out in the plan²⁹ are:

- a) The trunk and major link roads will be developed as necessary to meet traffic requirements.
- b) Major feeder roads will be improved or constructed to provide for the economic transport of an ever-increasing quantity of produce and other goods.
- c) Minor feeder roads will be improved or constructed to provide satisfactory access to developing areas.
- d) To ensure the economic soundness of each major project, preliminary feasibility studies will be undertaken as required.

Objectives (b) and (c) of the Plan should be commended since they reflect the government's intention to provide economic transport to the peasant farmer, as well as access

²⁸Five Year Plan, op. cit., p. 53.

²⁹Ibid., p. 54.

to areas with growth potential -- two factors overlooked in past road planning programmes. The expenditure under the Five Year Plan on different roads in the country is as follows:

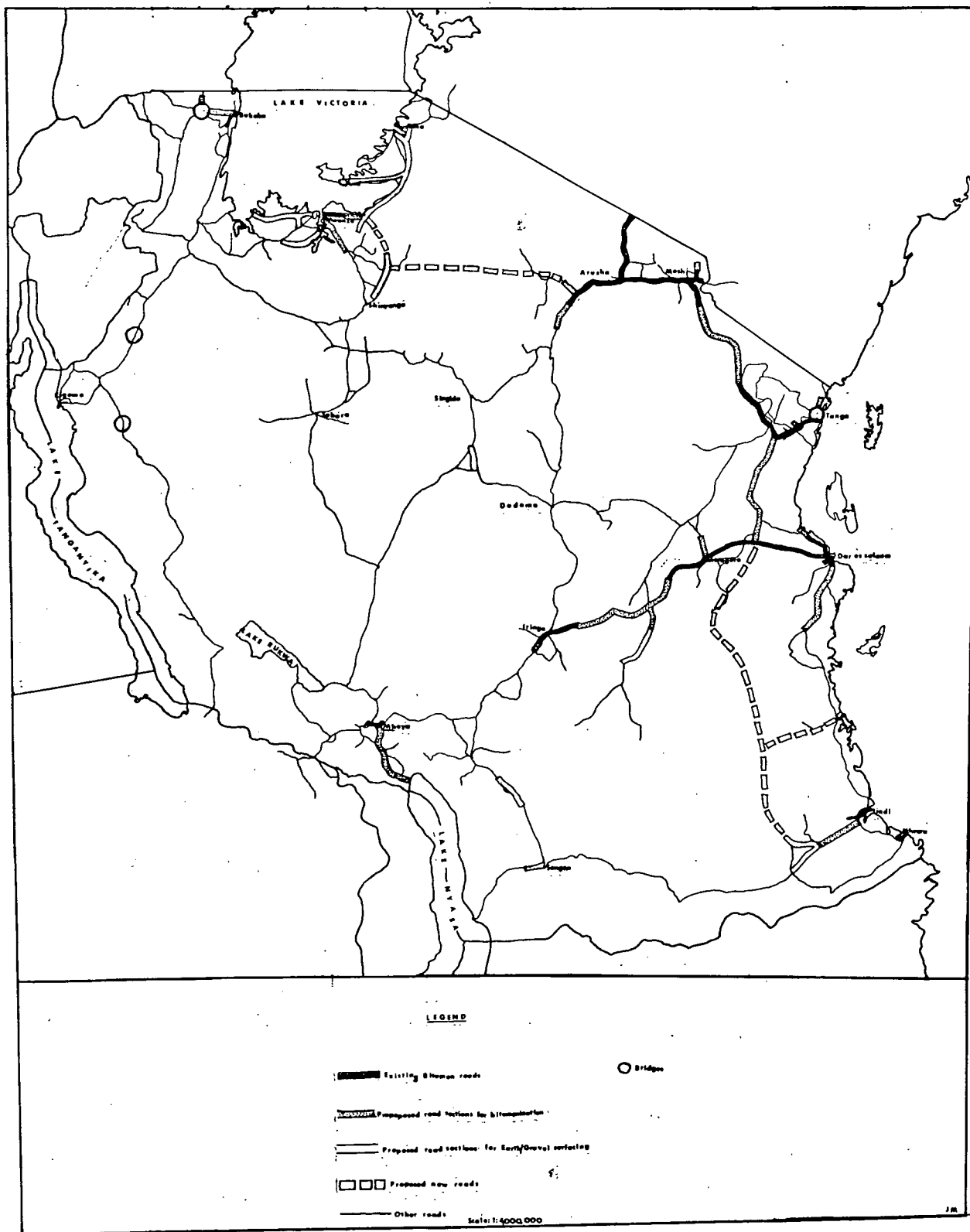
TABLE 6
FIVE YEAR PLAN - 1964/1969
PROPOSED EXPENDITURE ON ROADS

Roads	Provision
1. Great North Route	£ 98,500
2. Western Trunk Route	1,000,000
3. Eastern Trunk Route	928,000
4. Central Trunk Route	231,900
5. Northern Trunk Route	1,173,375
6. Southern Trunk Route	257,000
Total - Trunk Routes	£ 3,688,775
7. Major Link Roads	1,515,625
Total - Trunk & Major Link Roads	£ 5,204,400
8. Major Feeder Roads	£ 4,890,600
9. Minor Feeder Roads	935,000
Total Feeder Roads	£ 5,825,600
10. Miscellaneous	£ 770,000
Grand Total	£11,800,000

The total expenditure envisaged during the Plan period is approximately £22.9 million, of which £2.1 million is a carry-over from the Three Year Plan. ³⁰ Appendix B gives the

³⁰ Ibid., p. 55.

MAP 3 DEVELOPMENT AND IMPROVEMENT OF ROADS UNDER FIVE YEAR PLAN 1964-69



Source: Five Year Development Plan, 1964-1969, op. cit.

phasing of expenditure on the different roads. Map 3 shows the actual Five Year road development programme.

Road Maintenance and Construction Costs

On the whole, the physical geography of Tanzania does not provide a very difficult terrain for road construction. Highland areas are confined to peripheral areas and, in particular, to the southern part of the country. The only other physical obstacles worthy of mention are the Rift Valley and Swamp areas of the Malagarasi and Rufiji River Basins. Because the country lacks suitable road building materials (e.g., "murum" gravel found in Uganda), it is dependent upon imported ones, especially for building hard surface roads. But prices of construction materials have been rising, and hence construction costs. At present market prices, construction costs for different types of surfaces are:

TABLE 7
ROAD CONSTRUCTION COSTS

<u>Pavement Types</u>	<u>Terrain</u>	<u>Cost per Mile - £</u>
Bitumen	Flat & rolling country	10 - 15,000
Bitumen	Hilly country	13 - 25,000
Gravel	Flat & rolling country	3 - 10,000
Gravel	Hilly country	10 - 20,000

³¹Personal Letter from the Ministry of Communications, Labour and Works, The United Republic of Tanzania. Ref. No. CW.44019/72. August 12, 1967.

Most of the roads in Tanzania are of earth surfaces. Of the total 9,727 miles of roads maintained by the Central Government in 1962, only 871 miles were of bitumen surface. Gravel surface accounted for 1,556 miles and the remaining 7,398 miles were of earth surface.

The standard of roads in Tanzania has been very much conditioned by the low standards of roads initially provided. These are usually badly destroyed by heavy rains in the wet season. With the rapid increase in volume of traffic and use of heavier vehicles, road conditions deteriorated very fast, causing increased maintenance expenditure. Maintenance costs have increased from under £281,000 in 1951³² to £1.5 million in 1963/64.³³ The average annual cost of maintenance of different pavement types now is:³⁴

TABLE 8
ROAD MAINTENANCE COSTS

Type of Road	Cost per mile per year - £
Bitumen	450
Engineered Gravel	220
Earth/Gravel	120 - 140

³²Tanganyika Government, Statistical Abstract 1959 (Dar-es-Salaam: Government Printer), p. 102.

³³Statistical Abstract 1964, op. cit., p. 111.

³⁴Personal Letter, Ref. CW. 44019/72, op. cit.

The low standard of roads has restricted vehicle speed, while operating costs have tended to be high on the earth roads, depending on the size of the vehicle. Operating speed on different road surfaces given in the Tanzania-Zambia Highway study are:

TABLE 9
OPERATING SPEEDS FOR VEHICLES

Type of Vehicle	R o a d C l a s s i f i c a t i o n			
	Bitumen	Engin- eered Gravel	Improved Earth	Unimproved Earth
Cars & Land- rovers	50	40	35	< 35
Trucks and Buses	45	35	30	< 30

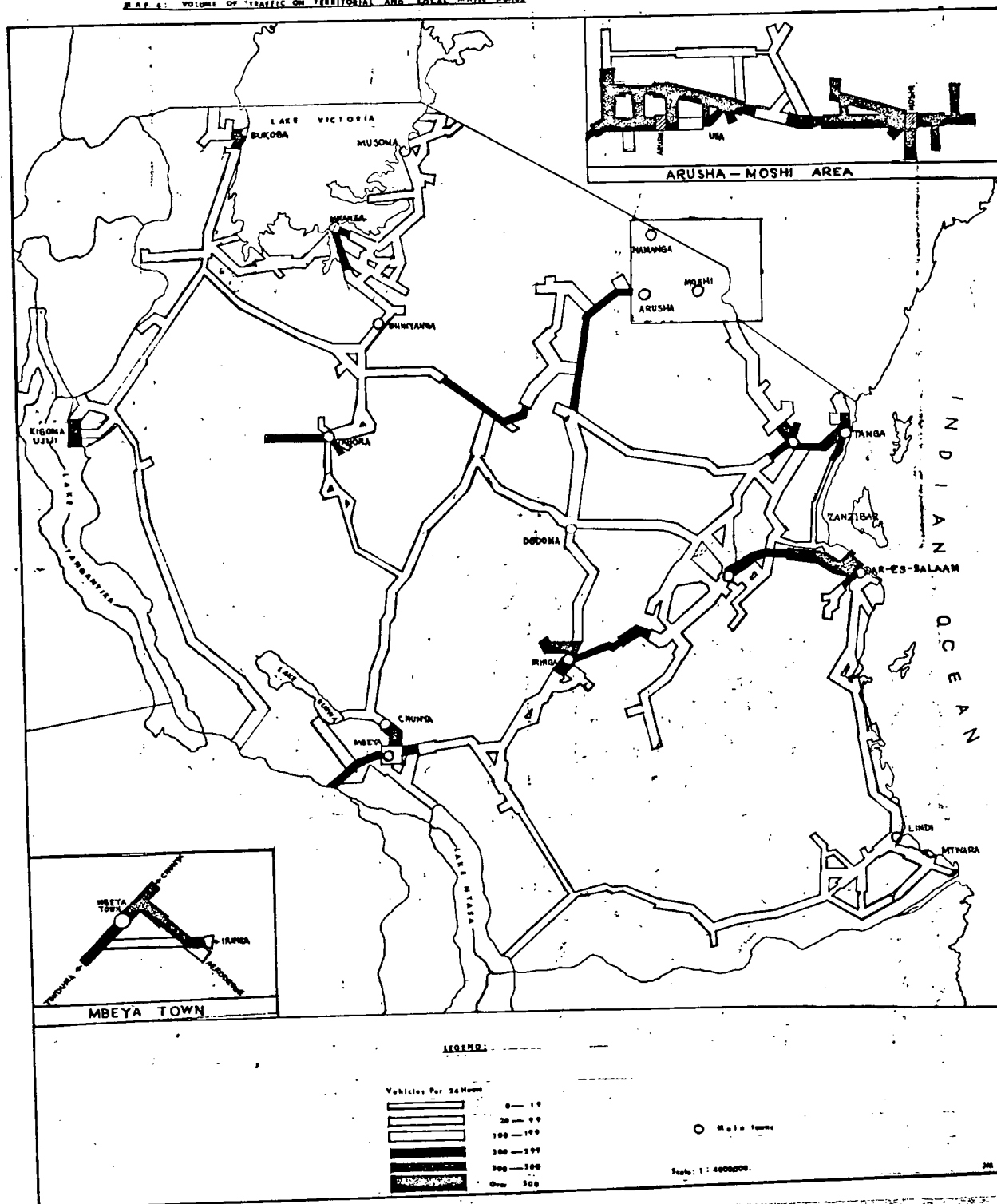
Reliable figures on vehicle operating costs on a country-wide basis do not exist. But just to give an idea on how these vary with road standards and terrain, operating costs for East African Railway Road Services in the southern part of the country have been quoted. These have declined from 1/86 s. (shilling)* in 1960 to 1/63 s. in 1963, per vehicle mile, a reduction of about 12%. Most of the roads

³⁵AID., Tanzania-Zambia Highway Study (Stanford Research Institute, 1966), AID 3/00/02971, p. 56.

³⁶Personal Letter from the Assistant General Manager's Office, East African Railway and Harbours, Dar-es-Salaam, Tanzania. Ref. No. ACM48, October 10, 1967.

* 1 East African shilling equals approx. thirty Canadian cents.

MAP 4: VOLUME OF TRAFFIC ON TERRITORIAL AND LOCAL MAIN ROADS



Source: Ministry of Communications, Power & Works, Annual Report 1962,
(Dar-es-Salaam: Government Printer)

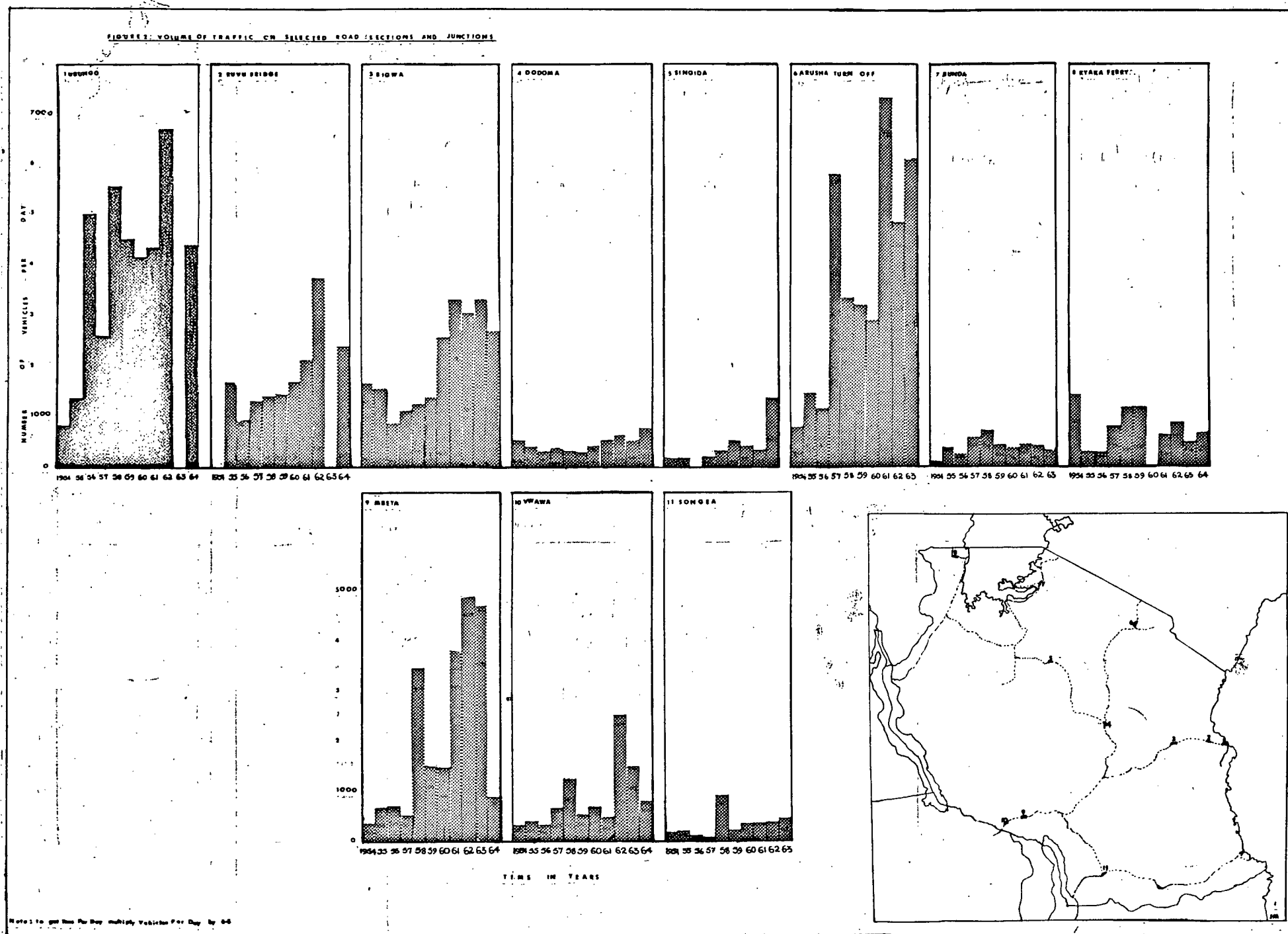
in this part of the country are of stabilized earth standard. The reduction in operating costs is due to the tremendous improvements done on the Great North Road between Morogoro and Iringa, and on sections passing through difficult terrain, all of which have been brought up to engineered gravel or bitumen standard.

The volume of traffic on the main roads is still low. As Map 4 indicates, in 1962 the number of vehicles, per day, on most roads was still less than 300, except near or between urban centres where, in some places, the number exceeded 500. The growth of traffic volumes on selected road sections and junctions is shown on Figure 2. Thus, road transportation has been growing in importance. This is further reflected in the steady increase in number of motor vehicles shown in Table 10 on the following page. The greatest increase has been in private vehicles and, in particular, automobiles. The other reason for the predominance of private motor vehicles is due to the licensing system, by which private commercial vehicles are registered under "C" licence. But it should be noted from the Table, too, that the government owns the second largest number of vehicles.

C. Organization of Rail and Road Transportation

In East Africa (Tanzania, Kenya, Uganda), railways are owned by the "East African Public" and organized as one of the self-contained services within the East African Common

Figure 1: Volume of Traffic on Selected Road Sections & Junctions



Source: Ministry of Communications, Labour & Works, Traffic Census Records,
Drawing No.'s 5355/R/C/1 - /10 (1965 & 1966)

Services Organizations.* Thus, the Railway Administration is a public corporation responsible to all of the three East African governments. In contrast, road operations are organized on a private basis, either by individuals or business firms. The Railway Administration also operates bus and trucking services in the Southern part of Tanzania.

The rapid growth in volume of motor vehicles led to early concern about rail/road competition. This concern was accentuated by the poor performance of railways, which operated at a loss. Thus, by 1931, legislation was passed to control road transport. In that year, the "Carriage of Goods by Motor (Control) Ordinance" was passed. It sought by means of high priced licences to afford some measure of compensation to the government resulting from loss of revenue by railway and, also, to discourage competition.³⁷ The ordinance was not effective. It was repealed in 1934, and replaced by the "Carriage of Goods by Motor (Prohibition) Ordinance 1934", which was designed to prohibit competition of motor traffic with the railway on certain scheduled roads.³⁸

*Since 1961, following the achievement of Independence by all the East African countries, the E.A. High Commission was replaced by the E.A. Common Services Organization, responsible for railways and harbours, telecommunications, airways, customs and excise and income tax, to mention but a few examples. Recently the E.A. Common Services Organization has been replaced by the E.A. Community, with the Railway now separated from the Harbours forming one of the Public Corporations.

³⁷An Economic Survey of the Colonial Empire 1933, Colonial No. 109 (London: H.M. Stationery Office), p. 44.

³⁸Ibid.

TABLE 10:

THE GROWTH OF LICENCED MOTOR VEHICLES 1953 - 1963

	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
Private (Licence) Motor Vehicles	19,000	22,000	24,316	26,205	29,675	32,057	35,046	37,046	38,893	41,526	45,620
Government Motor Vehicles	1,680	1,817	1,986	2,231	2,215	2,546	2,613	2,742	3,151	3,406	3,631
Total	20,680	23,817	26,302	28,436	31,890	34,603	37,659	39,788	42,044	44,932	49,251
Total - all types of Vehicles*	20,809	23,928	26,421	28,545	32,019	34,712	38,527	39,968	-	-	49,674

Sources: (a) Tanganyika: Statistical Abstract 1959 (Government Printer, Dar-es-Salaam), p. 55.

(b) United Republic of Tanzania: Statistical Abstract 1964 (Central Statistical Bureau: Directorate of Development and Planning, 1965, Government Printer, Dar-es-Salaam), p. 60

* cars, landrovers, light vans, trucks and heavy trailers, tankers, motorcycles and scooters, etc.

After the Second World War, road restriction was continued through the mechanism of licensing. The reasons for control were:³⁹

- (1) to discourage competition within the industry;
- (2) to safeguard the misallocation of resources for restricting free entry into the industry by unsuccessful operators;
- (3) to enable the provision of a better organization of the industry;
- (4) to limit competition with other modes -- especially railways.

In the 1960's, road restriction was not strictly enforced, although the policy tools for doing so were there. However, rail/road competition is still causing concern, though not from the government circles this time but the Railway Administration, and was a subject of a recent study.⁴⁰ Present government attitude on the issue seems to favour the encouragement of road transportation, especially by African operators, organized on a co-operative basis. There is no legislation limiting the movement of goods along routes running parallel with the railway. The formation of a Tanzania National Co-Operative Transport Company is further reflection of government intention to encourage road transportation. (This experiment, however, has proved a failure

³⁹Hawkins, op. cit., pp. 136-139.

⁴⁰Hazelwood, A., Rail and Road in East Africa: Transport Coordination in Under-developed Countries (Oxford, Basil Blackwell, 1964).

because the company went bankrupt -- but it is still the declared policy of the government to establish a new National Transport Company, once the causes which led to the failure have been investigated).

In the Five Year Plan, a provision of £300,000 has been allocated to provide credit to purchase vehicles by transport co-operatives.⁴²

D. The Transportation Problem of Tanzania

After the historical narrative of the evolution of railway and road transportation, the question to be answered is whether there is a transportation problem in Tanzania. How serious is it and which components constitute the major problem in the system?

In 1961, the World Bank Report held the view that lack of transportation facilities as an impediment to economic development was exaggerated.⁴³ It appears the World Bank Report confined the transportation problem to facilities in terms of miles of roads and railways. To appreciate the problem, and to measure its size in terms of present and future needs for economic development, the entire system must be examined: technically, e.g., all the elements in the system, the way, vehicle and motive power; administratively,

⁴²Five Year Plan, op. cit., p. 55.

⁴³IBRD., op. cit., p. 153.

from the point of view of organization of the individual modes as well as their co-ordination; and, lastly, the spatial operation of each mode.

In assessing the problem, the views of shippers suggest where the problem lies. One view is that of the Lint and Seed Marketing Board and hence transportation requirements of the cotton industry of Tanzania. Up to 1962, it was not possible to move all the cotton grown in the Lake Regions of Tanzania along the Central Line and export it via Dar-es-Salaam. Part of the crop had to be moved via Kisumu and along Kenya-Uganda railway to Mombasa for export. The reasons for diverting part of the traffic was due to lack of sufficient wagons along the Central Line. The construction of the Ruvu-Mnyinsi Link Line was, therefore, a necessary improvement in the East African Railway System, because it enabled the transfer of wagons from Kenya-Uganda-Tanga Lines to the Central Line. This objective has been fulfilled.⁴⁴⁴⁵

But it is still not possible to move all the cotton crop from the Lake Region along the Central Line. It is not implied here that all the cotton from the Lake Region should be moved along the Central Line. However, this is preferred by the Lint and Seed Marketing Board as it will save them the problem

⁴⁴The Lint and Seed Marketing Board: Report and Accounts for the Year ended 30th June, 1962 (Printed by Tanganyika Standard, Dar-es-Salaam), p. 17.

⁴⁵Letter, Ref. No. ACM48, op. cit.

of paying for storage facilities in Mombasa by using their own at Dar-es-Salaam harbour. The diversion of not only cotton but other traffic, too, to the Kenya-Uganda Line, thereby easing congestion along the Central Line, does not relieve the increased cost of shipment of cotton by the Lint and Seed Marketing Board due to storage charges at Mombasa.

Agricultural production seems to have grown faster than anticipated, making the available stock of wagons insufficient. This has combined with lack of storage facilities at Dar-es-Salaam harbour to aggravate the situation. Because of lack of storage facilities, part of the already inadequate supply of wagons are delayed at the wharf awaiting direct loading on to the ship.⁴⁶

Congestion along the Central Line is another problem.⁴⁷ It is attributed to insufficient motive power. Improvement of motive power on the Central Line has been slow compared to the Kenya-Uganda Line. The latter line is given priority because it follows a route with a difficult terrain, in some places reaching an altitude of 9,000 feet. In contrast, the only difficult section along the Central Line is Saranda, which is hardly 5,000 feet high. The other reason is the volume of traffic. The Kenya-Uganda Line has a higher level

⁴⁶Personal Letter from the Lint and Seed Marketing Board, Dar-es-Salaam, Tanzania, Ref. 105, Vol. V (51), Sept. 25, 1967.

⁴⁷Letter Ref. No. ACM48, op. cit.

of traffic than the Central Line because of the predominant use of Mombasa harbour for both export and import traffic of East Africa as a whole.

The first schemes of dieselization of the East African Railway System was confined to the Kenya-Uganda Line, and was due to be introduced on the Central Line between Dar-es-Salaam and Morogoro.⁴⁸ Congestion, as well as the disadvantages associated with using a mixture of steam and diesel engines, might have to be tolerated during the Plan period, since the improvement will take some time because it involves not only the ordering of more locomotives but replacing existing railway track with heavier rails.

The main problem in road transportation is the absence of feeder roads due to past policies of concentrating on building trunk roads. Therefore, the present road system does not provide efficient links to the mainstay of the rural population and the subsistence economy of Tanzania.

The poor standard of roads is another problem. The policy of constructing "Country-Wide Low-Cost Roads", described by the World Bank as defensive, was to provide, in the majority of cases, poor roads which in the rainy season became impassable thereby cutting off rural settlements from urban and main supply centres.

Next is the problem of organizing and co-ordinating

⁴⁸(E.A.R. & H.) Annual Report, 1967, op. cit., p. 17.

rail and road transport. The problem to be resolved in policy formulation as regards the two modes, is:

- (1) to maintain the principles under which the railway will continue to provide cheap means of transport, as well as receiving sufficient revenue for operating and maintaining the system;
- (2) to encourage an orderly development of road transportation which does not constitute a threat to the economical operation of the railways.

It is here that the problem of making the two modes complement -- rather than compete -- becomes significant. As far as the different modes of transportation (rail, road and inland waterways) in Tanzania are concerned, in most cases they are complementary rather than competitive. Both export and import traffic move by rail or road; at one time or another, before reaching their destination. The World Bank emphasized the need to strengthen this feature in the system.⁴⁹

The transportation problem of Tanzania is varied. It ranges from the need to modernize the railways by improving motive power, the inadequacy of wagons, congestion on the Central Line during the crop season, and lack of storage facilities at the ports; to substandard roads, lack of a well developed feeder roads system, and organization of rail and road transport to ensure economic operations and efficient use of limited facilities and equipment to meet the demand of rising traffic.

⁴⁹IBRD., op. cit., p. 153.

CHAPTER III

RAIL AND ROAD COMMUNICATIONS AND ECONOMIC GROWTH

A brief examination of the role transportation has played in the economic growth in other parts of the world will provide a general framework upon which the achievement of Tanzania may be compared. The United States and India have been selected for illustration purposes.

Railways and Economic Growth in the United States

It was pointed out earlier regarding the view that railways were responsible for opening up new land in the west was not wholly true.^{1 2} Fogel has shown in another study that railroads were not the cheapest means of transportation as compared to water transport, which had preceeded railway development. The only advantage railroads had over river transport is that they eliminated wagon haulage and hence its cost. Thus he concludes:

It is very likely that even in the absence of railroads the prairies would have been settled and exploited. Cheap transportation rather than railroads

¹Supra, p. 5.

²Fogel, R.W., Railroads and American Economic Growth: Essay in Economic History (Baltimore, John Hopkins Press, 1964), p. 214.

was the necessary condition for the emergence of the North Central States as the granary of the Nation. The railroad was undoubtedly the most efficient form of transportation available to the farmers of the nation. But the combination of wagon and water transportation could have provided a relatively good substitute for the fabled iron horse.

3

The role of railways in the economic growth of the United States cannot be confined to the examination of the level of service alone. It must be extended to the opportunity they offered on the growth of the iron and steel industry and fuels, such as coal and oil, by providing a ready and expanding market. Between 1840 and 1860 alone, consumption of iron and steel by railroads rose from 4.3 to 25.2 thousand tons, respectively. Such were the indirect benefits from railway building. The development of the railway in the United States did not depend on imports for building materials and rolling stock. Railways, in addition to providing an efficient transport system, opened new opportunities for exploiting the country's natural resources and hence economic expansion and diversification.

Railways and Economic Growth in India

There are two schools of thought on the part played
by railways in the early economic growth of India. One

4

³Ibid., p. 219.

⁴Anstoy, V., The Economic Development of India (Longmans, Green and Company, 1936; 3rd edition), pp. 133-144.

school of thought condemns the development of the railways for having disrupted the indigenous cottage industries and replacing them with the factory system. Railways provided access of British goods to the Indian market, and in so doing making it difficult for the craftsmen to compete profitably.

The other school of thought sees nothing wrong in the disruption of the indigenous Indian socio-economic organization; since this was compensated by linking the country to the rest of the world. It provided an effective system to deal with the famine problem, by linking villages and increasing contact between people and places. While perhaps the former school of thought has a case to prove against railway development, it is logical to concur with the latter view.

The issue to be examined, therefore, is to what degree did railway development benefit India and not the metropolitan power which ruled her at that time? The volume of trade which developed and which was oriented towards Britain, minimized the benefits which would otherwise have accrued had the railway stimulated markets for the development of internal resources of India. As Lansing argues:

"...the Imperial Government in the construction of railways in India in the 19th century did not seek primarily the economic development of the country. . . . In the details of the planning and operation of the system other considerations were paramount." 5

The economic policy which shaped the transportation

⁵Lansing, J.B., Transportation and Economic Policy, (The Free Press, New York: 1966), p. 136.

system of India served outside interests -- unlike that of the United States, which was geared towards opening up new areas and stimulating economic growth from within. Defence considerations, for example, over-shadowed economic ones.⁶

Where economic factors counted, these were designed to maintain the role of India as an exporter of raw materials and importer of manufactured goods.⁷ Thus, the linking of ports to the interior areas was given more preference than internal transportation facilities.

These few examples are intended to show that the de facto political status of India in the 19th Century and first half of the 20th Century, made the economic effects of railway development not entirely beneficial to her.

1. Rail and Road Communications in the Economic Growth of Tanzania

Introduction

The examination of the part played by rail and road communication vis-a-vis other factors affecting the economic growth of Tanzania has been broken up in four periods: 1904-1919, 1920-1948, 1949-1960, and 1961-64. The last years of these periods mark times (except for the last period) when significant changes occurred, which influenced the

⁶Saxena, K.K., Indian Railways - Problems and Prospects (Vora & Co., Publishers, PVT Limited, Bombay, India), p. 6.

⁷Ibid.

transport and economic development; namely, the transfer of the country from German to British Administration, Tanganyika Railways to East African Railway Administration. The last period (1961-1964) represents the first four years of Tanzania Independence.

1904-1919

Early railway building in Tanzania has been attributed to strategic reasons. While the railways did fulfil this objective, commercial motives were also paramount. "Peaceful penetration through competitive development and capture of traffic"⁸ featured more as a stimulus to railway development than strategy. Like many other colonial powers of the time, Germany needed colonies as sources of raw materials for her domestic industries and markets for manufactured goods. Railways were built to meet this requirement.

German policy in Tanzania was geared on developing plantation agriculture in the areas where the Tanga Line was to be constructed; based on rubber, cotton, coffee and sisal. Much research was carried out -- what one historian has described as "the Age of Scientific Colonization"⁹ -- to find out what crops were suited to the environmental conditions of the country.

⁸Gillman, op. cit., p. 15.

⁹Eberlie, op. cit., p. 11.

Coffee plantations were unsuccessful as compared to native grown coffee in Bukoba, which accounted for the greater part of the export of this commodity. Favourable prices in the world market led to rapid expansion of rubber on a plantation basis. However, the sudden fall in rubber prices, due to over-production in Southeast Asia, doomed the rubber industry and resulted in most of the rubber estates being converted into sisal plantations. From this date, sisal grew in importance and became the dominant export crop in the economy of the country.

The success of plantation agriculture also depended on the availability of labour. This problem was solved by resorting to compulsory labour -- the so-called "Wilhelmstal System"¹⁰ -- by which Africans had a choice of either working on a plantation or on a public works programme one month out of every four.

Attempts to grow cotton on a plantation basis were unsuccessful. Africans agreed to grow it when the government guaranteed a minimum price higher than the world price, which had dropped in 1908.¹¹ The present "Cotton Belt" in the Lake Regions, during this period, was notable for peanut production and exported via Mombasa along the Kenya-Uganda Railway.

¹⁰Harlow, op. cit., p. 189.

¹¹Ibid., p. 144.

Between 1906 and 1912, export and import trade increased as shown below. The import trade was accounted for by railway construction material, requirements for civil administration and plantations.

TABLE 11

1906-1912: EXPANSION OF TRADE
OF GERMAN EAST AFRICA

	1906	1907	1908	1909	1910	1911	1912
Exports	52.2	23.8	25.8	33.9	38.7	45.9	50.3
Imports	<u>11.0</u>	<u>12.5</u>	<u>10.9</u>	<u>13.1</u>	<u>20.8</u>	<u>22.4</u>	<u>31.4</u>
Total	63.2	36.3	36.7	47.0	59.5	68.3	81.7

(in million marks)

Source: Harlow, V. and others, History of East Africa, (Oxford: Clarendon Press, 1965), II, 153.

The Germans laid the foundation for the beginning of a modern economy in Tanzania, in which plantation agriculture played a leading role. Gillman concludes, in respect to the Tanga Line, that the railway was a great stimulant to rapid expansion of plantation enterprise.¹² On the other hand,¹³ Henderson attributes the success to several factors, including the railway, special tariff privileges, labour supply and credit facilities. It is true all these factors

¹²Gillman, op. cit., p. 21.

¹³Harlow, op. cit., p. 190.

were responsible for establishing the initial economic growth of Tanzania. As for future years, the decisive factor was the fall in rubber prices. This, rather than the railway, established sisal as the major export crop of the country.

This period was brought to an end by the First World War, during which time great damage was done on the railways, and the incipient economic base was disrupted.

1920 - 1948

The immediate task after the war was to re-establish lines of communication by rehabilitating the railways and upgrading the tracks to motorable roads. The extent to which reconstruction could be effected, to establish a base for further development, was limited by the amount of capital available. As a mandate territory, Tanganyika could not borrow money on the London Market -- the country had to depend¹⁴ on loans and grants. But the only type of loan which could be raised under the Palestine and East African Loans Acts of 1926, 1928 and 1931, respectively, were for either building¹⁵ railways or roads. Thus, she was able to raise about £3 million, under the above-mentioned Acts, to be spent on railway construction. The Mwanza branch line was built by capital from these loans.

¹⁴Cameron, op. cit., p. 69.

¹⁵Leubuscher, C., Tanganyika Territory: A Study of Economic Policy under Mandate (Oxford University Press, 1944), p. 158.

The world depression between 1930 and 1934 retarded further development. The fall in the price of primary products affected the revenue of the country and the purchasing power of the population. The price for sisal fell from £23 in 1930 to £12 per ton in 1934; that of coffee fell from £35 to £34 per ton at that time, and bees wax prices fell from £107 to £80 per ton.¹⁶ Demand for imports declined affecting revenue from customs duties. Revenue fell from £709,670¹⁷ in 1929-30 to £411,354 in 1931-32.

Throughout this period, there was uncertainty about the political future of the country. The fear that Tanganyika was going to become "a pawn on the international chessboard" repelled capital from the country. Simultaneously, there was a campaign to unite Tanganyika with Kenya and Uganda. This union was effected in 1923, and further strengthened in 1927. The Customs Union, however, proved a large disadvantage to the development of the country. By creating a Free Trade area and a Common Tarrif between the three countries, Tanganyika lost revenue; while prices for some consumer items imported from Kenya were higher than those imported from outside East Africa.¹⁸ The other disadvantage this union had was on the discouraging growth of local processing industries, such as tea and sugar, as a result of providing protection to those

¹⁶Moffet, op. cit., p. 106.

¹⁷Ibid.

¹⁸Smith, A., Financial Mission to Tanganyika (London: His Majesty's Stationery Office, 1932) Cmd. 4182, p. 22.

of Kenya and Uganda.¹⁹ It was at this time that the trade imbalance, largely favouring Kenya, was initiated; thereby creating much friction among the three countries, which was reflected in their efforts to create an East African Common Market.

The question of closer union was significant in the development and co-ordination of transport on an East African level. It was regarded as essential for deciding a future pattern of rail and road communication, as well as providing a better framework for financing such projects.²⁰

Efforts to use rate policies as a means to foster economic growth were discriminatory in that the differential rate system used charged low and high rates on export and import traffic, respectively. The system has been criticized because it did not raise high enough revenue for the railway. In particular, it was of a discriminatory nature in that it tended to subsidize those economic activities in which Europeans were engaged at the expense of the native people.²¹

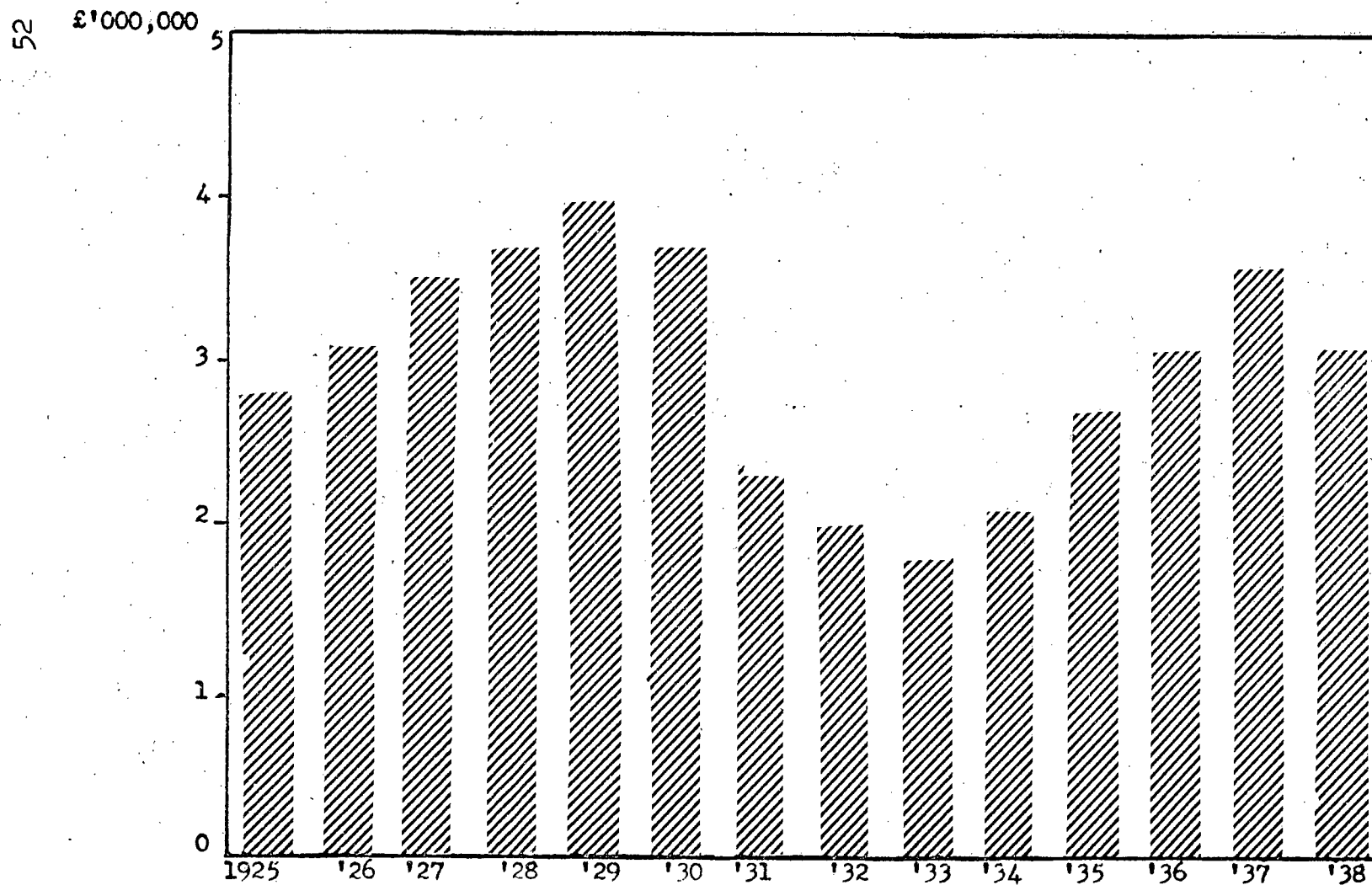
As the country was beginning to recover from the shocks of the First World War, the Second World War set in.

¹⁹Leubuscher, op. cit., p. 111.

²⁰Report of the Commission on Closer Union of the Dependencies in East and Central Africa (London: His Majesty's Stationery Office, 1939) Cmd. 3234, pp. 107-129.

²¹Leubuscher, op. cit., p. 113.

Figure 2: Growth of Import Trade - 1925-1938



Source: Leubuscher, G., Tanganyika Territory: A Study of Economic Policy under Mandate (London: Oxford University Press, 1944), Table CI, p. 205.

Although this time Tanganyika was not used as a battle ground, there was government pressure put on the country to meet war demands. Notable among these was food production, namely, maize. It was at this time that the road services by the Railway Administration was established to encourage the production of maize and rice in the Southern Highland, where development had been retarded by inadequate transport facilities.²² The government also instituted a system of subsidized prices, which encouraged the cultivation of food crops in areas which had not been brought under cultivation because of high transport costs. The need to meet war requirements overlooked the economics of production and resource allocation. A heavy strain was put on the infrastructure of the country and the transport system proved inadequate. The improvements which were carried out during this period were costly and had little bearing to the pattern of economic growth taking place. Indeed, transportation facilities were improved at the expense of other essential community needs like education.²³

Import trade increased in periods before and after the depression, as shown on the graph (Figure 1). The list of imports was dominated by cotton goods, mostly from Japan. Being a mandate territory, Tanganyika could not pursue a

²²Moffet, op. cit., p. 124.

²³Harlow, op. cit., p. 618.

discriminatory trade policy. The policy enforced at this time, opened the Tanganyika market to import trade from all other parts of the world, while in return she had only limited items to export to these countries. Thus, the "Open Door Trade Policy", like the East African Customs Union pointed out earlier, was to the advantage of other areas and --in particular -- Japan.

The problem in railway development at this period was that the line was operating at a loss and because railway receipts were included in general revenue, it affected the financial position of the country as a whole. The loss of railway revenue had been caused:²⁴

- (1) by the loss of the copper traffic from the Congo in the 1930's, which had been diverted from Dar-es-Salaam to Lobito;
- (2) the movement of export and import trade for areas around Lake Victoria, which moved along the Kenya-Uganda railway;
- (3) the railway administration staff was a costly one;
- (4) the heavy burden of the railway debt.

In the financial year 1931-32, out of the total debt of over £ 8 million, two-thirds was accounted for by railways.²⁵

²⁴Smith, A., op. cit., p. 84

²⁵Ibid., p. 46

The unhealthy financial situation of the country, which Armitage Smith attributed to a provision of an expensive economic and social infrastructure comparable to those of rich countries, resulted in his recommending the provision of low standard roads in the future expansion of transport facilities instead of railways.²⁶ The failure of the Manyoni-Kinyangiri branch line to operate at a profit was to confirm further that railways were too expensive as modes of transport for assisting economic growth.

The amalgamation of Tanganyika rail system with that of Kenya and Uganda in 1948, was a desirable development as far as the finance and the conditions of the railways were concerned. The significance of this move in the growth of Tanganyika, apart from eliminating the burden of operating the railway, was that the government was saved the problem of providing new railway facilities, and was thereby enabled²⁷ in recovering £414,000 loaned to the railway department.

There were two other significant developments. First, the newly formed railway administration was to function on a commercial principle and, in particular, provide cheap transport to assist agricultural, mining and industrial development²⁸ in the three East African territories. Despite this declared

²⁶Ibid., p. 85.

²⁷East Africa Royal Commission, op. cit., p. 123.

²⁸Hawkins, op. cit., p. 32.

objective, the rate policy which was devised was no different from the past one: namely, the "differential tariff". The low rates were geared to assist agricultural, mining and industrial development, and the high rate charged on import traffic was to make up for the loss.

The pattern of the rail system of the three countries provided effective links to Kenya and Uganda and only indirectly to Tanganyika. In view of this, it perpetuated the loss of export and import traffic from the Lake areas of the country as pointed out earlier.

The second aspect was the international nature of the railways. By making it a single system, it became possible to distribute the gains, for example, of moving the Tanganyika export and import traffic of the Lake areas from a central financial pool, upon which Tanganyika could draw for improvement of her rail system.

Towards the end of the period under discussion, anticipation of prosperity after the war, and, in particular, with the passing of the Colonial Development and Welfare Act in 1940, a "Development Plan" was drawn up in 1944. The plan envisaged the expenditure of £ 12.5 million over a period of three years for Resource, Social Service and Communication development.²⁹

Two other plans came into being in 1946 and 1947,

²⁹Burke, F.A., Tanganyika: Pre-Planning (New York: Syracuse University Press, 1965), p. 46.

which were revised versions of the 1944 and 1946 plans, respectively -- with the revised plan period extending for ten years. The Ten Year Plan of 1946 is significant in this discussion because it put great emphasis on communication. One-fifth of the £10.6 million proposed was allocated for railway development. Although the revision of this plan is attributed to increased prosperity of the country,³⁰ the war time pressures mentioned above cannot be overlooked. As pointed out earlier, the emphasis on communication was geared to the war rather than for stimulating economic growth.

1949 - 1960

This period saw Colonial Planning come into full swing. The type of planning being referred to here was not comprehensive. It was a "conglomeration of ad hoc schemes and public work projects"³¹ to be completed over a specified period of time. The process was aided by the Korean boom which reached its peak in Tanganyika in 1954.

During this period, the population of the country increased by 1.3 million; from 7.4 million people in 1948 to 8.7 million people in 1957. The gross domestic product is estimated to have grown at a rate of 6.5% per annum, giving a net growth for this period of 5%.³²

³⁰Ibid.,

³¹Ibid., p. 54.

³²Ibid., p. 51.

Production of main export crops increased throughout the period, as shown in Appendix C. High increases were in sisal, coffee, cotton and cashew nuts. Diamond dominated production in the mining sector. There was an overall incremental change in agricultural production of 64% between 1949 and 1955, but this dropped to 6% by 1958. Rapid increase in export production is attributed to price changes. This did not only affect production, but it led to significant changes in terms of value of the main agricultural exports towards the end of the period. Sisal remained the most important export crop, but its relative importance declined from more than 50% in 1949-50 to about 30% in 1960-61, as compared to tea, meat and cashew nuts, which increased in importance because of favourable prices compared to those of sisal.³³ The importance of sisal in the economy of Tanzania, and hence the repercussion it had on the revenue of the country, is dealt with in the "Case Studies" section further on.

But it should be mentioned in passing that, during this period, Tanganyika had the highest annual rate of growth of 7% in the quantity of agricultural production, as compared to that of Kenya and Uganda. But because of unfavourable prices for sisal, the rate of growth by value was less. The price index for Tanganyika remained at the same level in 1962-63 as it had been in 1949-50, namely, 108.³⁴

³³ Keysimira, Y., *Agricultural Export Development in E. Africa*, Institute of Social Research, Conference Papers, 1965, (Makerere University College, Kampala, Uganda), p. 6.

³⁴ *Ibid.*, Table 2c, p. 17.

Other factors which explain increased agricultural production, especially for coffee and cotton, were -- first, the control imposed over production and marketing of cash crops during the war; second, the development of Native Co-operative Marketing Societies and Marketing Boards, encouraged by the government.

The first co-operative society, the Kilimanjaro Native Co-Operative Union, came into being in 1932. Until 1952, the cotton from Tanganyika was sold by contract to the Raw Cotton Commission in Britain. In that year, the Lint and Seed Marketing Board became responsible for selling the crop. This Board, together with the Victoria Federation of Co-operative Union, became the main agents for handling the cotton crop as well as supervising and encouraging better production techniques.

Co-operative handling of crops eliminated middlemen, while the Board stabilized cotton prices. In years of favourable prices, the Board accumulated funds which were used to subsidize the farmers in years of poor prices. In recent years, the Board has extended its activities by channelling some of its profits into building and improving transport facilities, such as feeder roads and storage facilities.³⁶

The formation by coffee and sisal estates owners of the Tanganyika Coffee Growers Association and Tanganyika Sisal

³⁶Letter, Ref. 105, Vol. V (51), op. cit.

TABLE 12

GOVERNMENT OF TANGANYIKA: REVENUE & EXPENDITURE
BETWEEN 1948 - 1959

Year	Revenue	Expenditure
1948	6.7	5.8
1949	8.6	7.1
1950	10.4	8.2
1955/56	18.7	18.5
1956/57	17.5	17.8
1957/58	18.8	18.7
1958/59	19.2	19.5

Figures rounded and in £'000,000.

Source: IBRD., Economic Development
of Tanganyika, op. cit., p. 25.

Marketing Association, respectively, also played significant roles in marketing these crops as well as improving their production.

The revenue of the country in this period was rising at a rate of 9% per annum. It rose from £8.6 million in 1949 to £22.1 million towards the end of this period.³⁷ The main sources of revenue were from rising expenditure from export earnings. This increased demand for imports and hence increased revenue from customs and excise duties.

The level of economic growth achieved in this period was reflected in government expenditure. Between 1945 and 1954, revenue exceeded expenditure, after which time expenditure tended to outstrip revenue, as shown on Table 12. The increase was mostly for capital works, in which road construction featured very high. Thus, the 1947 Revised Plan was revised again in 1950, to take into account the increase in road construction costs, while the transfer of railway to East African Railway Administration also made revision necessary.³⁸ The 1950-1956 "Development Plan" envisaged a capital expenditure of £24.4 million, of which £2.7 million were to be spent on capital programmes.

However, continued prosperity, which boosted the government purse, encouraged the government to revise the

³⁷ IBRD., op. cit., p. 25.

³⁸ Moffet, op. cit., p. 139.

1950-1956 plan before it was completed in 1956, by raising proposed expenditure to £25.8 million. This new plan, which was to cover the period 1955 to 1960, included an expenditure of £3 million for constructing the Ruvu-Mnyusi Rail Link. The plan tended to incline towards allocating more money for social services, especially education. But in aggregate terms, allocation on communications and, in particular, roads, was the highest, as shown in Table 13 (a). Table 13 (b) compares expenditure on economic and social infrastructure; and Table 13 (c) compares the total economic infrastructure.

As it was pointed out in Chapter II, the road policy aimed at providing "quantity" rather than quality of good roads. Neither were the roads provided based on transport needs, which existed in different parts of the country. The road pattern which finally evolved was unrelated to the pattern of economic activities of the country. It has thus been criticized as having been unrealistic, in that by:

attempting to spread its limited resources over a vast territory, and buying experience and knowledge at great cost, the Tanganyika Government provided transport facilities which were under utilized in backward areas and inadequate in developing areas. By 1960, Tanganyika found its infrastructure improved, yet incomplete and expensive to maintain. . . . The mere creation of physical capital is no guarantee of economic growth. Indeed the Tanganyika Government had, in the groundnut scheme, ample and costly evidence that it could actually slow down the progress of the economy.

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³⁹Smith, op. cit., p. 15.

TABLE 13 (a)

GOVERNMENT OF TANGANYIKA - DEVELOPMENT PLAN 1955-1960

Item	1955-1960	Proportion of Expenditure - %	
	£'000,000	1955-60 compared to 1946-50	Plan
Natural Resources.....	4.9	19.2	17.8
Communication.....	7.4	28.9	35.9
Roads 4.2			
Railways 3.0			
Aerodomes <u>0.2</u>			
Urban Development.....	3.2	12.5	14.6
Social Services.....	5.3	20.5	12.0
Public Building.....	2.0	7.5	14.2
Electricity.....	2.0	7.7	-
Africa Housing.....	<u>0.97</u>	<u>3.7</u>	<u>5.5</u>
Total	25.8	100.0	100.0

Source: Development Plan 1955-1960: Capital Works Expenditure
(Government Printer, Dar-es-Salaam, 1955), pp. 4 and 6.

* includes miscellaneous expenditure

TABLE 13 (b) GOVERNMENT OF TANGANYIKA - CAPITAL EXPENDITURES ON ECONOMIC & SOCIAL SECTORS
1948-1950, 1955-1956, 1958-1959, AND ESTIMATES FOR 1960-1961 - in £'000

Category	1948	1949	1950	1955/ 1956	1956/ 1957	1957/ 1958	1958/ 1959	1960/ 1961 (est.)
<u>Economic</u>								
Agriculture & Animal Husbandry.....	169	229	359	90	72	147	247	217
Water Supplies.....	140	162	168	311	470	492	634	715
Roads.....	112	180	1,094	1,172	939	906	849	1,386
Other.....	71	301	113	208	85	90	140	401
<u>Social</u>								
Educational.....	47	227	292	674	1,026	1,196	1,135	677
Township Development..	73	104	450	570	1,292	993	810	721
Public Health & Social Welfare.....	65	9	44	346	419	309	291	303
Public Buildings and Works.....	272	341	906	707	942	1,253	966	1,471
Others.....	47	134	13	6	38	68	87	289
Total	996	1,687	3,439	4,084	5,283	5,454	5,159	6,180

Source: I.B.R.D. - Economic Development of Tanganyika,
(Government Printer, Dar-es-Salaam, 1961), p. 28.

TABLE 13 (a)

GOVERNMENT OF TANGANYIKA - EXPENDITURE ON CERTAIN ECONOMIC ACTIVITIES
1948 - 1958/59 - in £000,000

Year	Total Expenditure (incl. Development)	Roads & Bridges	Agriculture and Veterinary Services	Water Development
1948	6.8	0.3	0.5	0.1
1949	8.7	0.4	0.7	0.2
1950	11.6	1.4	0.8	0.2
1951	14.6	1.5	0.9	0.2
1952	16.3	2.2	0.8	0.3
1953	18.0	2.1	0.9	0.3
1954 Jan./June	9.1	0.9	0.5	0.2
1954 - 1955	19.8	1.9	0.9	0.6
1955 - 1956	22.6	1.9	1.0	0.8
1956 - 1957	23.1	1.8	1.2	0.9
1957 - 1958	24.1	1.8	1.2	0.9
1958 - 1959	24.7	1.8	1.1	1.1

Source: Smith, H.E., Readings on Economic Development and Administration in Tanzania
(Institute of Public Administration, University College, Dar-es-Salaam,
London: Oxford University Press, 1966), p. 16.

When the country achieved independence in December 1961, it had a deficient transport system incapable of assisting rapid economic growth.

1961 - 1964

In the first four years of independence, the momentum of economic growth experienced in the preceeding years continued.

In 1961, the population of the country was estimated to be about 9.5 million people. The National Income stood at £172.5 million and rose to £230.7 million in 1964. The Gross Domestic Product increased from £185.1 million in 1960 to £244.3 million in 1964.⁴⁰ The increase in the value of Gross Domestic Product in 1962 was 7.8% and 6.8% of 1960 and 1961 increases, respectively.⁴¹

Agricultural production continued to expand. The largest increases were in cotton, coffee and cashew nuts -- the latter increased by 39%. The continued increase in cashew nut production during this period was stimulated by stable market prices. Contributing to this stability, was the formation of the National Agricultural Products Board, which was made responsible for marketing cashew nuts, as well as other oil seeds, maize and rice.

⁴⁰Ibid., p. 51.

⁴¹Ley, C., and Robson, P., Federation in East Africa: Opportunities and Problems (Nairobi: Oxford University Press, 1965), Appendix IV, p. 225.

Although in actual fact the price of cashew nuts fluctuated between £40 and £49, per ton, in 1960 - 1964, these changes were not felt by the farmer. The increase in cotton production also reflects a response to favourable prices, which were above world average, given to growers in the Mwanza area.⁴² Sisal production increased by 7%, but its price continued to fall and was below £110 per ton, thus the value realized was less. Diamond production continued to dominate the mining sector accounting for 22% of the value of mineral production. In 1964, investment in transport equipment and machinery accounted for 42% of the Gross Capital formation.⁴³

Government revenue and expenditure continued to increase. Recurrent revenue increased from about £27.9 million in the fiscal year 1961-62, to £34.0 million in 1964-65. Recurrent expenditure fluctuated between £24.7 and £34.0 million, exceeding revenue by £2.8 and £0.5 million in 1961-62 and 1964-65, respectively. Expenditure on social infrastructure, notably education, ranked high, followed by expenditure on economic infrastructure with emphasis remaining on trunk roads, as shown in Table 14 (a).

The rate of expenditure on Social Services throughout this period was about 29% of annual total expenditure, while

⁴²Smith, op. cit., p. 54.

⁴³Ibid., p. 59.

TABLE 14 (a)

EXPENDITURE ON SELECTED ECONOMIC AND SOCIAL SERVICES
1961 - 1964

Sector	1960/ 1961	1961/ 1962	1962/ 1963	1963/ 1964	1964/ 1965 *
I <u>Economic Services</u>					
Road & Bridge Maintenance.....	1.2	1.5	1.6	1.5	1.5
Agriculture.....	0.8	1.0	1.7	1.6	1.9
Water Supplies.....	0.02	0.10	- 0.2	- 0.3	0.2
II <u>Social Services</u>					
Education.....	3.3	3.9	4.4	4.9	5.9
Medical.....	1.8	1.9	2.1	2.3	2.5
Community Development.....	-	0.1	0.08	0.2	0.2

* Approved estimate.

Figures rounded and in £'000,000.

Source: The United Republic of Tanzania:
Statistical Abstract 1964 (Central
 Statistical Bureau - Directorate of
 Development and Planning - 1965;
 Government Printer, Dar-es-Salaam),
 pp. 113-114.

that on economic services varied between 15% to 20%.

An important aspect in the development process of the country in this period, was the implementation of the Three Year Plan 1961/62 - 1963/64, based mostly on the World Bank Report of 1960. The plan had three main objectives. First, the development of agriculture, livestock, water supplies, and irrigation; second, the improvement and development of communications; and, finally, the development of secondary education.⁴⁴

This period marks a departure from "Colonial Planning", to the beginning of comprehensive planning. The underlying economic objectives were to increase the per capita income of the population and the general standard of living of the people. The plan envisaged an expenditure of £24 million in contrast to £18 million recommended in the World Bank Report. Expenditure on trunk and feeder roads was allocated the highest proportion of the development capital. These accounted for about 17% of the total expenditure, in contrast to 13.5% and 9.8% for Education and Agriculture, respectively, as shown in Table 14 (b).

The policy guiding road development under the Three Year Plan was to continue building trunk rather than feeder roads. This was in contradiction with the recommendation of the World Bank Report, which favoured the development of

⁴⁴Three Year Development Plan (reprinted in Smith), op. cit., p. 349.

TABLE 14 (b)

GOVERNMENT OF TANGANYIKA: PROPOSED EXPENDITURE
FOR DEVELOPMENT PLAN - 1961/62 - 1963/64

Main Category *	Expenditure	% of Total Expenditure
1. Communications, Power & Works...	6.9	28.8
Trunk Roads.....	3.2	13.5
Feeder Roads.....	1.0	4.0
Aerodromes.....	0.2	0.8
Power.....	1.8	7.5
2. Agriculture.....	5.7	24.0
3. Education.....	3.3	13.7
4. Home Affairs.....	2.2	9.1
5. Lands and Surveys.....	1.3	5.4
6. Prime Minister (office)	1.3	5.2
7. Local Government.....	1.2	5.2
8. Commerce and Industry.....	1.1	4.6
9. Health and Labour.....	1.0	4.0
Total	24.0	100.0

* Except in 1.

Figures rounded and in £'000,000

Source: Smith, H.E., Readings in the Economic Development and Administration in Tanzania (Institute of Public Administration, University College, Dar-es-Salaam, Oxford University Press, 1966, London), pp. 357-8.

feeder roads.⁴⁵ The reason for not undertaking a feeder road development programme was that there were insufficient surveyors who could undertake the job. The Trunk Road Programme was given preference because the system, as it had been developed in pre-independence period, was not serving the needs of the country adequately. Since the road pattern was oriented "outwards", it facilitated the outflow of purchasing power from the rich provinces, particularly in the northern part of the country into the neighbouring Kenya and Uganda. It did not provide direct connections between the three most developed regions in the country, namely, West Lake and Northern Regions, as well as linking them with the major seaports in the country. The latter case was particularly true in the case of the two former areas which did not have a direct road link with Dar-es-Salaam. Thus, the areas depended entirely on the railway and, in particular, on supply of their trade from Kenya and Uganda. The Three Year Plan road programme was designed to eliminate this deficiency as well as connect areas of agricultural and mineral production with the main outlets in Tanganyika.⁴⁶

The implications of this policy on the future development of a transport system is two-fold. First, it reflects

⁴⁵IBRD., op. cit., p. 156.

⁴⁶Smith, op. cit., p. 358.

concern on the side of a National Government to re-orientate the transportation system to the internal needs of a country it was built to serve; and to provide more facilities in those areas most developed and with promising potential for future development. Second, it was a declaration that road transport should be made to play the same role as that of railways. This marked a departure from past policies, which avoided providing direct road connections to seaports as a way of discouraging competition between rail and road.

Such a policy had worked against the development of inter-regional trade within Tanzania. For example, both passenger and goods traffic between the Lake Regions and Arusha-Kilimanjaro Regions had to follow a circuitous rail route through Kenya. Today, by completing the Sekenke road junction, it is quicker and cheaper especially for people to travel between the two areas. In view of the rapid growth of manufacturing activities in the two areas, especially in the Arusha - Kilimanjaro Regions, inter-regional trade in items such as beer, matches, sugar and textiles, will be highly encouraged and will reduce the dependence of areas around Lake Victoria for the supply of these products from Kenya and Uganda.

The value of having a direct road link with the main ports, is that road haulage can be supplemented to ease congestion at the ports by moving the less bulky and short-haul traffic inland. The use of lorries to ease congestion at Mombasa in recent years was pointed out in the last chapter.

Although no similar development has been reported in the case of Dar-es-Salaam, congestion prevailed at the port in 1965.⁴⁷ In view of the limited port facilities and the sudden dependence of Zambia for its import and export trade via Dar-es-Salaam, which is mostly transported by road, traffic movement by road ought to play a big role in easing congestion and, also, eliminating unnecessary and expensive delays of ships in the ports. This in turn will reduce expenses in port operations.

Policies influencing transport development in post-independence days, and, in particular, road transport, are not concerned with the number of road miles per se. It reflects a concern with whether or not the existing transport system meets the needs of Tanzania adequately and, in so doing, begin to effect those changes necessary to effectively reorientate the system to meet internal transportation needs.

⁴⁷E.A.R. & H., Annual Report 1966, op. cit., p. 28.

CHAPTER IV

CASE STUDIES

1

1. Significance of Transport Costs in the Production of Main Export Crops

a) Sisal

Sisal is the most important export crop in Tanzania. Its central position in the economy of the country is reflected in its proportionate share in the economy as a whole. Sisal accounts for about 30% of the value of domestic exports. In 1964, producers of sisal were the second largest employers of the labour force, after the government, employing about 25% of the employed African labour force.²

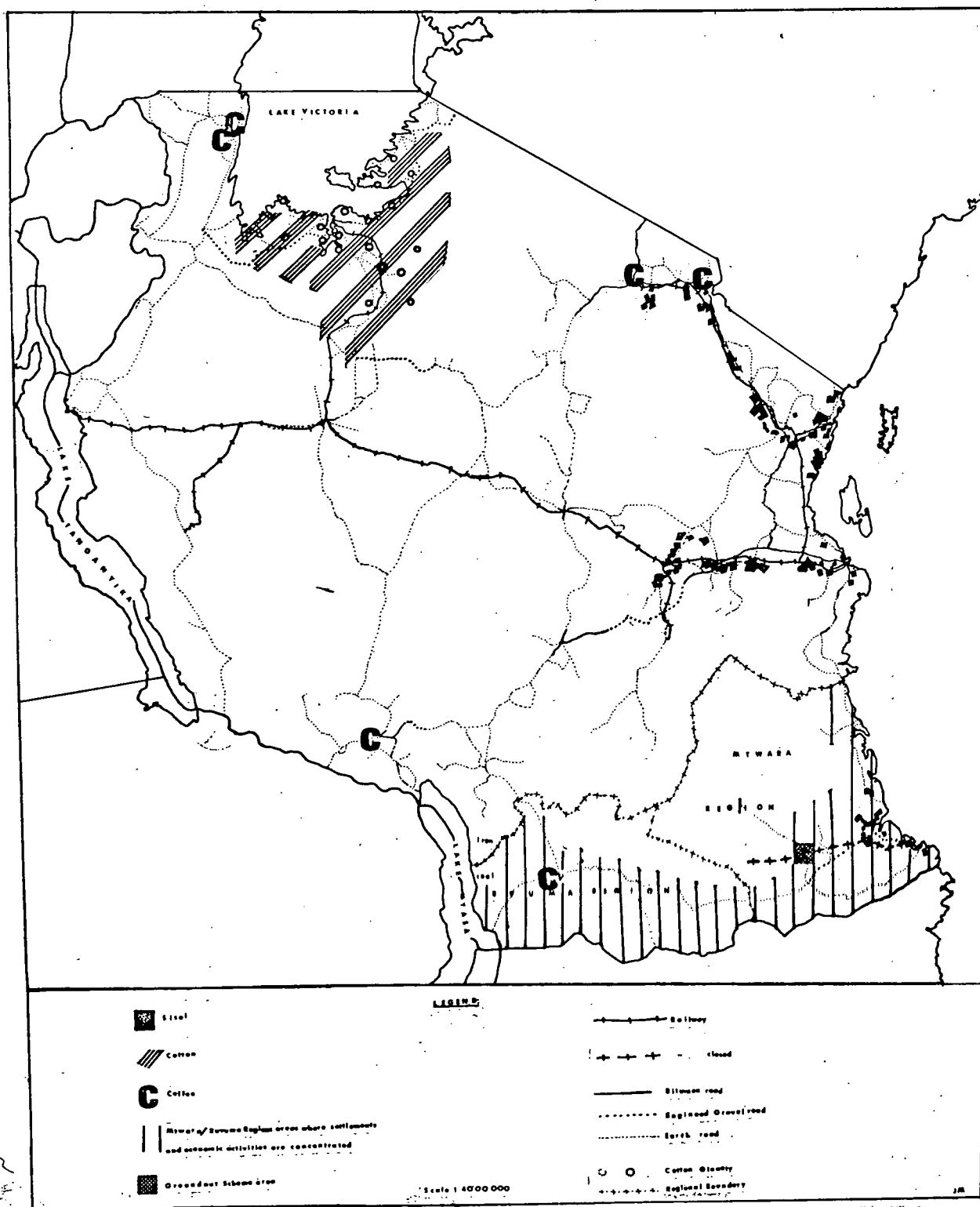
Most of the areas producing sisal were located along or near the first railway line to be built in the country. This has led people to believe the crop was dependent upon closeness to rail facilities for successful economic production. It was also pointed out earlier how the crop came to occupy its prominent position in the economy of the country, which was due to the fall in rubber prices at the beginning of this century.

Since the crop is not very much influenced by climate (as in the case of coffee, cotton or tea), in that it can withstand drought conditions as well as poor soils, its location along the coastal belt is not based on physical factors.

¹Map 5 has been provided for general reference of areas referred to in the Case Studies.

²Guillebaud, op. cit., p. 115.

MAP: SITAL COTTON COFFEE GROWING AREAS, RAILROAD FACILITIES AND PATTERN OF ECONOMIC ACTIVITIES IN NIWARA AND RUVUMA REGIONS



On the other hand, there seems to be a close correlation between important areas of production and early German settlement.

Tanga produces 56%, the Central area (coast region) 26%, Northern area (Arusha and Kilimanjaro) 7.8%, and the Southern (Mtwara region) 5.3% of the plantation sisal. The remaining 3.2% is produced on a non-plantation basis (e.g., hedge sisal), mostly from the Lake zone.³ Tanga was the first to be developed by the Germans, thus it has maintained the leadership because of historical reasons.

Sisal production is only feasible on a large-scale basis. It is both a capital and labour intensive industry. The fact that the present industry occupies only about 1% of the total area of the country (361,800 sq. miles), and the type of land required is in ample supply, land cannot be regarded as a limiting factor in the expansion of the industry.

The minimum capital investment for producing a ton of sisal before the Second World War was £59. The comparable figure at present market value is £200.⁴ The total capital invested in the sisal industry of Tanzania is over £20 million.⁵ This has all come from private sources, not so much by borrowing, but by plowing back profits earned from

³Ibid., Appendix Table C, p. 133.

⁴Ibid., p. 60.

⁵Ibid., p. 60.

increased production and good market prices. Thus, although the country has been faced with a shortage of capital, the sisal industry has, by and large, been able to finance its own expansion.

The availability of labour was pointed out earlier as one of the underlying reasons for the success of plantation agriculture during the German administration. Because of the prevalent limited mechanized nature of the production process, the industry requires a lot of labour. Supply of labour, as well as its cost, in terms of increase in wages and other aspects related to it, will influence production costs.

The labour force for the industry has remained relatively stable. The industry retained much of the same labour force through high and low export earnings.⁶ But labour is becoming expensive because of increase in wages and fringe benefits, such as sick pay, holidays and annual paid leave. In 1963, cost of labour represented 58% of the net total expenditure. Between 1958 - 1963, the average net total expenditure, per ton, increased by 58.8%, that of labour averaged 67% at the same period of time.⁷ Table 15 shows the cost of labour compared to other major costs of

⁶MacBean, Export Instability and Economic Development (London: Allen and Unwin, 1966), p. 155

⁷Guillebaud, op. cit., pp. 72-73.

production of one ton of sisal. The small proportion of transport costs is reflected by the fact that this is included in the heading of "All other costs".

TABLE 15
SISAL PRODUCTION
LABOUR AND CAPITAL COSTS PER TON
1962 and 1963

Cost	Shillings Per Ton		
	1962	1963	Increase
Labour	30.6	33.2	+ 2.6
Depreciation	9.5	11.9	+ 2.4
All other costs* (incl. building contractors)	99.1	119.3	+ 20.2
Total	139.2	164.4	+ 25.2

* (includes stores, power, staff, salaries and commissions, administrative expenses, transport to port, sisal cess)

Source: Guillebaud, C.W., An Economic Survey of the Sisal Industry of Tanganyika (England: James Nisbet & Co. Ltd., 1966), p. 69

The cost of transport must be weighed against the cost of labour to have any significance at all in the total production costs of sisal. Two types of transport cost should be distinguished. First, is the cost of transporting sisal from the plantations to the port either at Tanga, Mtwara, or Dar-es-Salaam. Second, is the cost of shipping the sisal from the port to its destination (e.g., c.i.f. or f.o.b.). Only

the first costs are of concern here.

Most of the sisal is moved by railway to the ports of Tanga or Dar-es-Salaam.⁸ The railway tariff rate is "tapered". Thus rates charged on traffic decrease with increasing distance. In other words, tariff rates are not proportionate to the length of haulage.

The tapering of rates and the low value nature of sisal, requiring subsidization by high value traffic, combine to reduce the significance of transport costs in over all production of the crop. Most of the plantations are within one or two hundred miles from the ports, thus, they do not really benefit from reduction in freight charges with increasing distance. A ton of sisal from Morogoro to Dar-es-Salaam, a distance of 125 miles, costs about £1.5 per mile to transport. By comparison, similar weight of sisal from Ngomeni to Tanga, a distance of 15 miles, costs about a £1/4 to¹⁰ transport.

⁸Except in the Southern (Mtwara) area, where there is no railway, in which case the product is moved by road to Mtwara. Also, in a few instances, in the Tanga and Central "sisal regions", where some estates have begun transporting their sisal to sea ports by road.

⁹Hazelwood, op. cit., p. 83.

¹⁰The Economist Intelligence Unit: Investment Opportunities in Tanganyika (The Government of the United Republic of Tanzania), p. 28.

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⁹Hazelwood, op. cit., p. 83.

¹⁰The Economist Intelligence Unit: Investment Opportunities in Tanganyika (The Government of the United Republic of Tanzania), p. 28.

On the other hand, if the Railway Administration were to adopt a "Cost-Tapered Actual Tariff", charges for short distances will be too high; consequently increasing transport costs in areas where most of the sisal is now produced. Charges for medium distance will be reduced substantially, and charges for distances greater than 400 miles will be increased. But transport charges as a percentage of the f.o.b. value of the commodity will still be small.¹¹ But this is "if" the tariff rates will be changed. At the moment, however, "sisal is unaffected by the difference between chargeable and true mileages."¹² Therefore, the view that transport costs discourage the establishment of sisal estates is not altogether justified.

It would appear that sisal estate owners have preferred to increase their production by intensive rather than extensive methods. Also, wherever there has been a need to bring new land into production, it is economically cheaper to make this expansion in areas where the industry is already well established, rather than in new areas. The latter alternative would have involved new capital investment to establish self-containing production units. The increasing production from "hedge sisal", growing in semi-wild condition around south eastern parts of Lake Victoria, is another good

¹¹Hazelwood, op. cit., pp. 98-99.

¹²Ibid., p. 98.

example to indicate that transport costs do not influence greatly the expansion of sisal production. The availability of capital from the Victoria Federation of Cooperative Union has made possible the construction of a factory to clean and boil "home dicorticated" sisal. It would appear, in this instance, lack of capital to build a factory to clean and bale sisal has been the limiting factor in the development of an organized sisal industry around the Lake area. The government is now encouraging Village settlements in the Lake Zone, based on cultivation of sisal which will be processed and sold under the auspices of the Victoria Federation of Cooperative Union.

The availability of capital and the cost of labour will continue to remain the most important factors in the production of sisal. These factors, in conjunction with new markets, increased demand, improvement in the world price for sisal, and secondary use of sisal for paper production, will determine the role the crop will continue to play in the economic growth of the country. Transport costs, although they cannot be overlooked, do not constitute an obstacle to the expansion of the sisal industry.

b) Coffee and Cotton

Unlike sisal, coffee and cotton are peasant crops grown by farmers, the majority of whom belong to cooperative

movements. The most important are the K.N.C.U.,¹³ B.N.C.U.,¹⁴ V.F.C.U.,¹⁵ and T.C.T.A.¹⁶ -- which handle the coffee crops of smaller coffee unions in different parts of the country; such as the Meru Union in the Arusha Region, Rungwe and Mbozi Unions in Mbeya Region, and Matengo Union in Songea Region. The K.N.C.U. and V.F.C.U., the two largest cooperative movements for coffee and cotton, respectively, in the Kilimanjaro and Lake Victoria areas, have been selected for illustrations.

The producing unit is the family "shambas"¹⁷ averaging two to three minimum acres per family and employing family labour. After harvesting the crop (cotton or coffee), it is taken to a buying station either by portage or bicycle, and, in some cases, on a lorry hired by a group of farmers. The former method is predominant in the cotton growing areas, where in Sukumaland, for example, bicycles are used extensively for this purpose. In coffee areas, because of the mountainous terrain and high ownership of lorries and vans among the Chaggo people, motor transport is becoming increasingly important.

The cost of transport in the first stage of crop movement is borne directly by the farmer. At the store, the

¹³Kilimanjaro Native Cooperative Union.

¹⁴Bukoba Native Cooperative Union.

¹⁵Victoria Federation of Cooperative Union.

¹⁶Tanganyika Cooperative Trading Agency.

¹⁷Swahili word used for small peasant farms.

crop is sold to the Primary Cooperative Society, which is responsible for delivering it to a Union's ginning or curing works for processing and baling or bagging, depending on whether it is cotton or coffee. The cost of transporting the crop in the second phase is borne by the Union. After the second stage, the crops are in the hands of the Marketing agencies -- K.N.C.U., B.N.C.U., and T.C.T.A., and¹⁸ L.S.M.B. These agencies are responsible for auctioning the processed crop and for its final shipment to the buyers overseas. Thus, they meet the cost of storage and transport of the last phase -- from the curing factory and ginneries to the seaports either at Dar-es-Salaam or Mombasa. Although coffee from the Kiliminjaro area is now auctioned at Moshi, it is still exported through Mombasa instead of Tanga, the nearest port in Tanganyika, because of the better port facilities of Mombasa as compared to the lighterage port of Tanga.¹⁹

Since coffee, a high rated traffic, is not subsidized like cotton or sisal, it is possible that the cost of transport it to Mombasa may be as high as those of exporting it through Tanga, plus additional costs due to poor handling facilities of the port. The major justification for continuing to export the Tanzania coffee through Mombasa, is the leading role

¹⁸Lint and Seed Marketing Board.

¹⁹Hoyle, op. cit., p. 79.

the city plays as a centre for "coffee exchange"²⁰ between East Africa and world markets.

Continuing to export part of the cotton grown in the Lake area via Mombasa is intended to ease congestion on the Central Line and storage space at Dar-es-Salaam port, as it was pointed out earlier. The costs incurred in hiring storage facilities at Mombasa, by the Lint and Seed Marketing Board, constitutes an important part of transportation costs of cotton lint to the buyers. Appendix D shows the generalized pattern of the stages coffee and cotton pass through to reach their destination.

As far as the coffee grower in the Southern part of Tanzania is concerned, the second stage, namely, from the buying station of the primary society to the curing factory, is a great limiting factor. Absence of a curing factory in the area has meant that the parchment coffee has to be moved about 800 miles to Moshi -- by road in the case of coffee grown in the Rungwe and Mbozi areas, or by road to Mtwara then by sea to Tanga and rail to Moshi. The cost of transporting coffee along these two alternative routes are £11 - £12 for the former route and slightly higher for the latter route.²¹

The situation of the coffee production in the Southern

²⁰Ibid., p. 79.

²¹Rowe, J.W.F., The World's Coffee: A Study of the Economics and Politics of the Coffee Industries of Certain Countries and of International Problem (London: Her Majesty's Stationery Office, 1963), p. 136.

area should not be confused. High transport costs for moving coffee to curing works at Moshi are not the limiting factor. It is the absence of a local coffee curing factory, thus necessitating the long movements mentioned previously, which is the limiting factor. The total amount of coffee now being produced in the area is still too small to support a curing works. The minimum economical through-put of a curing works is 5,000 tons.²² If production can be increased to a level where a curing factory will be feasible, and capital found to construct one, the long haulage to Moshi and, hence, the transport costs involved will be eliminated.

As for the price given to the farmer: it is calculated to cover services, such as transport to ginnery or curing works, ginning and curing, baling, storage and bagging, undertaken on his behalf by the Union. In the case of coffee transport to curing works, the cost constitutes 13% of the total cost (transport, curing, sampling and storage) and only about 3% of overall costs incurred by K.N.C.U. per bag of parchment coffee.²³ The cost for transport of cotton to ginneries constitutes about 4% of overall costs (transport, bagging, ginning and baling). The Lint and Seed Marketing Board pays about 7% for transport and storage of lint cotton

²²Ibid.

²³Calculated from figures in Ruthenberg, H., Agricultural Development in Tanganyika (Berlin: Springer-Verlag, 1964), Table 28, p. 101.

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being delivered to the consumer.

Thus, on the whole, the burden of transport costs shouldered by the peasant farmer is small. His major responsibility is to deliver his crop to the primary society. From there on it is the job of his Cooperative Union and affiliated marketing agencies to meet the remainder of the costs. The two cents or so, which is deducted from his income after selling, to cover the direct costs for the services which will be rendered, are minimal compared to the price he receives for his crop. Transport costs, therefore, are significant to the marketing agencies, such as the K.N.C.U. and Lint and Seed Marketing Board. The importance of transport costs in total costs incurred for providing all the necessary services by the Union and Marketing agencies in the past is given on Table 16 (a) and 16 (b).

In the case of coffee, factory expenses (handling, curing and handpicking), "cost" on interests and bank charges, and for sisal bags, are higher than that for transport to curing works. It is possible factory expenses include transport costs to a sea port since these costs are not very obvious.

As for cotton, however, the costs for transport, weighing, loading and storage rank high, if those costs for

²⁴Ibid., Table 29, p. 102.

TABLE 16 (a)

KILIMANJARO NATIVE CO-OPERATIVE UNION LIMITED

COFFEE SELLING SECTION - 1961/62 SEASON

PROCESSING

Twine, labels, stencils & brushes.....	£2,638	
Sisal bags for collection.....	-	
Transport, from Societies to Curing works...	9,763	
Handling, curing & handpicking	42,394	
Sisal bags for export.....	<u>17,486</u>	£72,281

SELLING

Warehouse rent, sampling & sorting.....	£ 1,075	
Liquoring & technical services.....	425	
Auction expenses.....	751	
Brokerage: Auctioneers.....	51	
Economic Advisor.....	<u>4,232</u>	6,534

GENERAL

Coffee cess.....	£ -	
Interest & Bank charges.....	10,621	
Insurance.....	1,801	
Maintenance of scales at Societies.....	947	
Printing stationery, incl. Kalamzoo Equip...	8,628	
Overtime.....	1,221	
Accountancy & supervision fees.....	575	
Sundry expenses.....	<u>491</u>	24,284

Total £103,099

Source: Kilimanjaro Native Co-Operative Union Limited,
Thirtieth Annual Report 1961-1962 (Moshi, Tanzania)
Appendix C

TABLE 16 (b)

ACCOUNT FOR PURCHASING COTTON LINT BY THE LINT AND SEED
MARKETING BOARD FOR 1961-1962 CROP SEASON

PURCHASES

149,971 Bales A.R. Lint	£7,153,699	
11,549 Bales B.R. Lint	<u>321,443</u>	£7,415,132
Delivery incentive paid to unions.....		68,875
Ginning quality bonus.....		8,615
Transport, weighing, loading.....		
storage & sundry charges		40,682
Bank charges.....		18,682
Classification expenses.....		7,464
Claims Paid:		
Quality.....	£ 6,649	
Bale Measurement.....	<u>80</u>	<u>6,729</u>
TOTAL		<u>£7,626,265</u>

Source: Lint and Seed Marketing Board, Tanganyika.
Report on Account for the Year ended 30th June, 1962.
 (Printed by Tanganyika Standard, Dar-es-Salaam),
 Appendix I, p. 32.

purchasing lint and for delivery incentives paid to the Unions are overlooked. Bank charges constitute the second highest category of costs. In comparing these two Tables (mentioned previously), it should be borne in mind that, unlike the Lint and Seed Marketing Board, the K.N.C.U. is both a Cooperative Union and a Marketing Agency comparable to T.C.T.A. This combines the functions performed by V.F.C.U. and Lint and Seed Marketing Board for cotton. Because of this, some costs are not very apparent as has been indicated above.

In view of these other high charges, which are necessary if the farmer is to continue to benefit from the existence of cooperative and marketing board institutions, reduction in transport cost due to delay and lack of storage facilities -- as was pointed out earlier -- will assist in reducing overall expenditure and provide a higher profit. One of the reasons for high bank charges in the case of the Lint and Seed Marketing Board is due to the poor transport facilities and delays.

2. Railway and Road Transport as Factors in the Economic Growth of S.E. Tanzania:

A significant happening from an economic development and comprehensive planning view point in the economic growth of Tanzania, was the Groundnut Scheme.

²⁵op. cit. Personal letter from Lint and Seed Marketing Board,

This Scheme was a plan by the British Government, after the Second World War, to grow peanuts in the British dependencies for export to England and Europe to meet the shortage of vegetable oils. The largest portion of the scheme was to be established in Tanganyika, under the auspices of the Overseas Food Corporation, with a capital of £25 million.²⁶ The Scheme involved the clearance of 20,000 acres; in the former Western (Urambo), Central (Kongwa) and Southern (Nachingwea) Provinces. By 1950, however, the Scheme proved a failure and was abandoned.²⁷ This Scheme put a lot of strain on the poor transport system of the country for moving an imported supply of heavy machinery. But it also left the country with transport assets of a railway and a new seaport at Mtwara in the former Southern Province.

From a planning point of view, the "consequence of the massive groundnut scheme is the powerful reinforcement it gave in view that modernization and development for Tanganyika depends upon a nationally planned agricultural development".²⁸

One of the areas selected for the scheme was Nachingwea in the former Southern Province. When the scheme failed, the railway was retained with the hope that "by lowering

²⁶Moffet, op. cit., p. 133.

²⁷For details about the Groundnut Scheme, see Wood, A., The Groundnut Affair (The Bodley Head, 1956).

²⁸Burke, op. cit., p. 39.

freight costs on both imports and exports it will encourage business enterprise and in some parts will enable certain crops to be grown economically which have not been worthwhile in the past owing to the high cost of road haul".²⁹

The traffic to be carried by the railway was estimated at 121,000 tons in 1953, and was expected to rise to 242,000 tons by 1960. Actual traffic carried, however, was 32,043³⁰ and 25,064 tons in 1953 and 1960, respectively. In the long run, the railway became uneconomic to operate. Between 1955 and 1960, it operated at an overall loss of between £210,000 and £250,000 per annum, which had to be made good by the Tanganyika Government to the Railway Administration. The line was finally closed and removed in 1962.

When the railway was under construction, there was a detailed programme for construction and improvement of roads, which included a trunk road linking the coast with inland settlements and, in particular, Songea.³¹ This road, when it was completed and opened for public use, provided a more flexible service of moving traffic than the railway. Road transport, therefore, attracted more export and import traffic than the railway. For example: out of the 34,000 tons of

²⁹A Review of Development Plans in the Southern Province (Dar-es-Salaam: Government Printer, 1953), p. 42.

³⁰O'Connor, A.M., Railways and Development in Uganda (E.A.L.S.R. - Oxford University Press, Nairobi, 1965), p. 142.

³¹Review of Development Plan, op. cit., pp. 40-41.

cargo received at the port of Lindi and Mtwara in 1960, less than 2,000 tons was moved inland on the railway.³²

The Southern Province, before it was divided into the present two regions of Mtwara and Ruvuma, formed the second largest administrative unit in the country. Good internal communications were essential both for administration and economic development. The area is not poorly endowed with resources, both agricultural and mineral, compared to other parts of Tanzania. It has coal and iron ore deposits, 400 and 45 million tons, respectively, still awaiting development when sufficient demand and capital exist. The World Bank Report attributed one of the reasons which impedes production on a commercial basis was the remoteness of the area from the coast and from rail transport facilities.³³ The area is the leading producer of cashewnut, which has been shown to have increased in importance as a major export crop of the country. Despite increase in production, however, a great proportion of the export traffic of this crop did not move by rail. Out of the export production of 30,000 tons, only 7,775 tons moved by railway -- less than a third of the total production.

The area produces about 5.3% of the total sisal of

³² O'Connor, A.M., Railway Construction and the Pattern of Economic Development in East Africa (paper now printed in Transactions of the Institute of British Geographers, No. 36, June 1965), p. 4.

³³ IBRD., op. cit., p. 148.

the country. The production of sisal in the area increased from 8,074 tons in 1947³⁴ to 12,268 tons in 1963³⁵. Export trade of major products between 1952 and 1962, shown in the table below, increased except for timber which suffered a decline by about 50%.

TABLE 17
EXPORT TRADE OF FORMER SOUTHERN PROVINCE
1952 - 1963

Commodity	Tons Exported	
	1952 ³⁶	1963 ³⁷
Cashewnuts	9,740	36,138
Cassava	16,927	19,441
Sisal	11,159	18,651
Groundnuts	738	3,304
Coffee	196	1,683
Timber	4,540	2,617

The lesson to be learned from the failure of the Southern Railway is that the line, in contrast to road development and improvement in the area, was not oriented to

³⁴Review of Development Plan, op. cit., p.14.

³⁵Guide to Preparation of Regional Five Year Plan - Mtwara Region (Directorate of Development and Planning).

³⁶Review of Development Plan, op. cit., p. 14.

³⁷Hoyle, B.S., The Seaports of East Africa: A Geographical Study (Nairobi: East African Publishing House, 1967), p. 70.

the local economy. The economic base and pattern of economic activities had already been established when the railway entered into the picture.

There was no doubt by 1952 that road transport was playing a leading role in the area, judging from the level of traffic which on most roads exceeded 100 vehicles a day.³⁸

Road improvement, which occurred simultaneously with railway construction, helped to strengthen and make obvious the advantage the lorry had over the railway of having been the first mode of transport to be established in the area.

Unlike the Northern area, where railway preceeded motor transport as the first modern means of transportation, in the Southern area motor transport was the first and is still the dominant mode -- though not necessarily the cheapest in some areas.

Road improvement helped to reduce operating costs, thus enabling motor firms and operators to charge the same rates as those being charged by the railway. Contrary to the belief at the time of building the Southern Railway, it was the level of service, rather than lack of a cheaper mode of transport, which was required. The railway did not meet this requirement because ab initio, it was not oriented to the needs of the area. It only served to divert the attention of road programming and delay its implementation. When this was finally effected, growth of the economy of the area

³⁸Review of Development Plan, op. cit., p. 41.

was accelerated.

If the level of development achieved in the area was less than it should have been, the reason must be sought in other causes. Notably, in those factors other than inadequate transport facilities, which, to date, still inhibit rapid development of the economy of Tanzania as a whole. Even if the Groundnut scheme had succeeded and managed to provide sufficient traffic for the line, it is unlikely that it would have done much to influence the position of road transport in the area. The railway was part of a superimposed scheme geared to outside needs. When the scheme failed, the railway could not be made to fit into a local economy which was geared to road transportation.

CHAPTER V

THE ROLE OF TRANSPORTATION IN TANZANIA'S ECONOMIC GROWTH

1. Transport Investment Benefits

Exact figures on the amount invested in transportation for Tanzania as a whole are hard to arrive at, because of scarcity of data, especially before 1948. Only a slight attempt has been made here to assess the magnitude of pre-1948 transport investment. Roughly £11.1 million was spent in building railways, the purchasing of rolling stock, rehabilitation and compensation to Germany between 1919 - 1939. Most of this capital was provided by loans, the allocation of which, between the territory and its railways, is shown on Table 18 overleaf.

TABLE 19

PROPORTION OF DEBT CHARGES TO DOMESTIC EXPORTS AND REVENUE - 1928-1935

Year	Debt Charges	Domestic Exports	% of Debt Charges to Domestic Exports	Revenue	% of Debt Charges to Revenue
1928	158	3,873	4.1	1,973	8.0
1929	214	3,722	5.7	1,993	10.7
1930	227	2,636	8.6	1,749	13.0
1931	311	1,645	18.9	1,522	20.4
1932	189	2,190	8.6	1,291	14.6
1933	385	2,543	15.1	1,565	24.6
1934	425	2,646	16.1	1,720	24.7
1935	431	3,445	12.5	1,974	21.8

Figures given in £'000,000.

Source: Frankiel, H.S., Capital Investment in Africa
(Oxford University Press, 1938),
Tables B7, p. 179, B8, pp. 180-185.

TABLE 18

PROPORTION OF PUBLIC DEBT ACCOUNTED FOR TERRITORIAL AND RAILWAY SERVICES, 1931/32

Source and Type of Loan	Capital Amount				Annual Service Charges		
	Territory	Railways	Expense & Discount	Total	Territory	Railways	Total
Imperial Exchequer	£ 761,400	£1,286,442	£ -	£2,047,842	£ 46,400	£ 70,186	£123,586
Imperial Exchequer (no interest chgs.)	556,983	518,525	-	1,075,508	-	-	-
I Total	£1,318,383	£1,804,967	£ -	£3,123,350	£ 46,400	£ 77,186	£123,586
II Guaranteed Loan 4-1/2, 1948/68	£ 144,411	£1,799,393	£126,196	£2,070,000	£ 8,761	£109,160	£117,921
III Guaranteed Loan 4%, 1931-1971	638,863	2,122,794	238,343	3,000,000	36,062	119,838	155,900
IV Guaranteed Loan 4%, 1932	651,224*	78,756	20,000	750,000	32,563	3,937	36,580*
Total I - IV	£2,752,901	£5,805,910	£384,539	£8,943,350	£123,786	£310,121	£433,907
V Colonial Develop- ment funds; Loans (1932 - 1941)	£ 39,900	£ -	£ -	£ 39,900	£ 5,279 (average)	£ -	£ 5,279
GRAND TOTAL	£2,792,801	£5,805,910	£384,539	£8,983,250	£129,065	£310,121	£439,186

* (refers to £500,000 received by that time)

Source: Smith, A., Financial Mission to Tanganyika
(London: H.M. Stationery Office, 1932), Cmd. 4182, p. 46.

Railways were allocated two-thirds of total capital from loans. In view of the fact that railways operated at a loss, these loans had to be serviced from General Revenue. Thus, although domestic exports and revenue increased (except in the period of depression 1931-1932), debt charges consumed a fair proportion of the export and revenue receipts.

Table 19 shows the proportion taken by public debt from export revenue and general revenue. By 1939, the per capita debt charges had amounted to £1. 13s. 9d.¹ In contrast, the net total revenue of the country in the same period was only £33 million or about £2-1/2 million per annum.²

Thus, in these two decades the budget of the country was meagre in comparison to the needs and problems of the country. But this small budget had to accommodate the railway debt!

After 1948, the investment referred to, with regards to railways, is that which was incurred by the government to subsidize non-profit making lines. Between 1954 and 1960 - 1961, slightly over £1 million was expended by the government to make good the losses of the Railway Administration.³

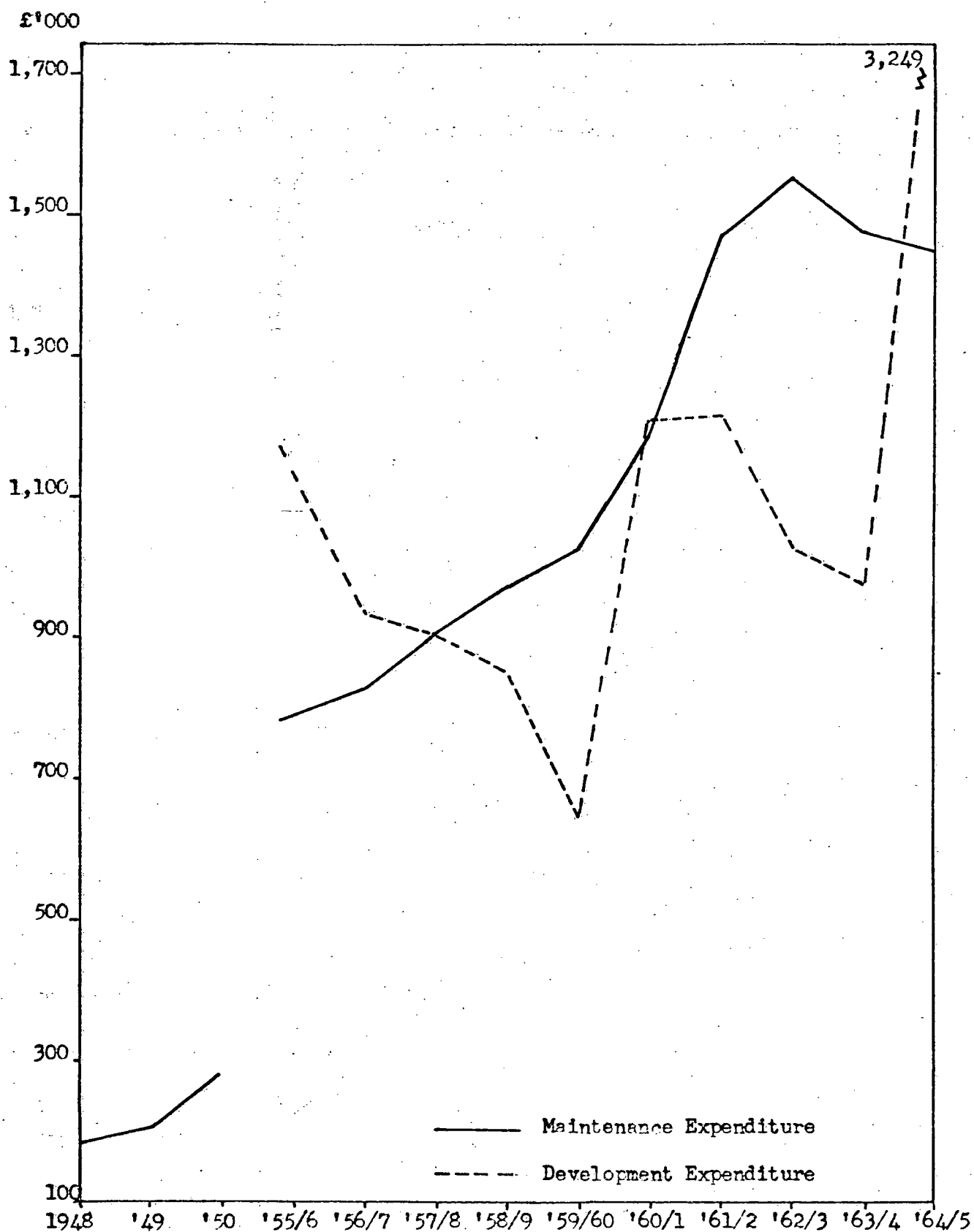
Investment in roads reached a total of about £1.4 million at the end of 1950. After that year, there was increasing expenditure for maintenance, reaching a level of

¹Leubuscher, op. cit., p. 335.

²Moffet, op. cit., p. 335.

³IBRD., op. cit., p. 20.

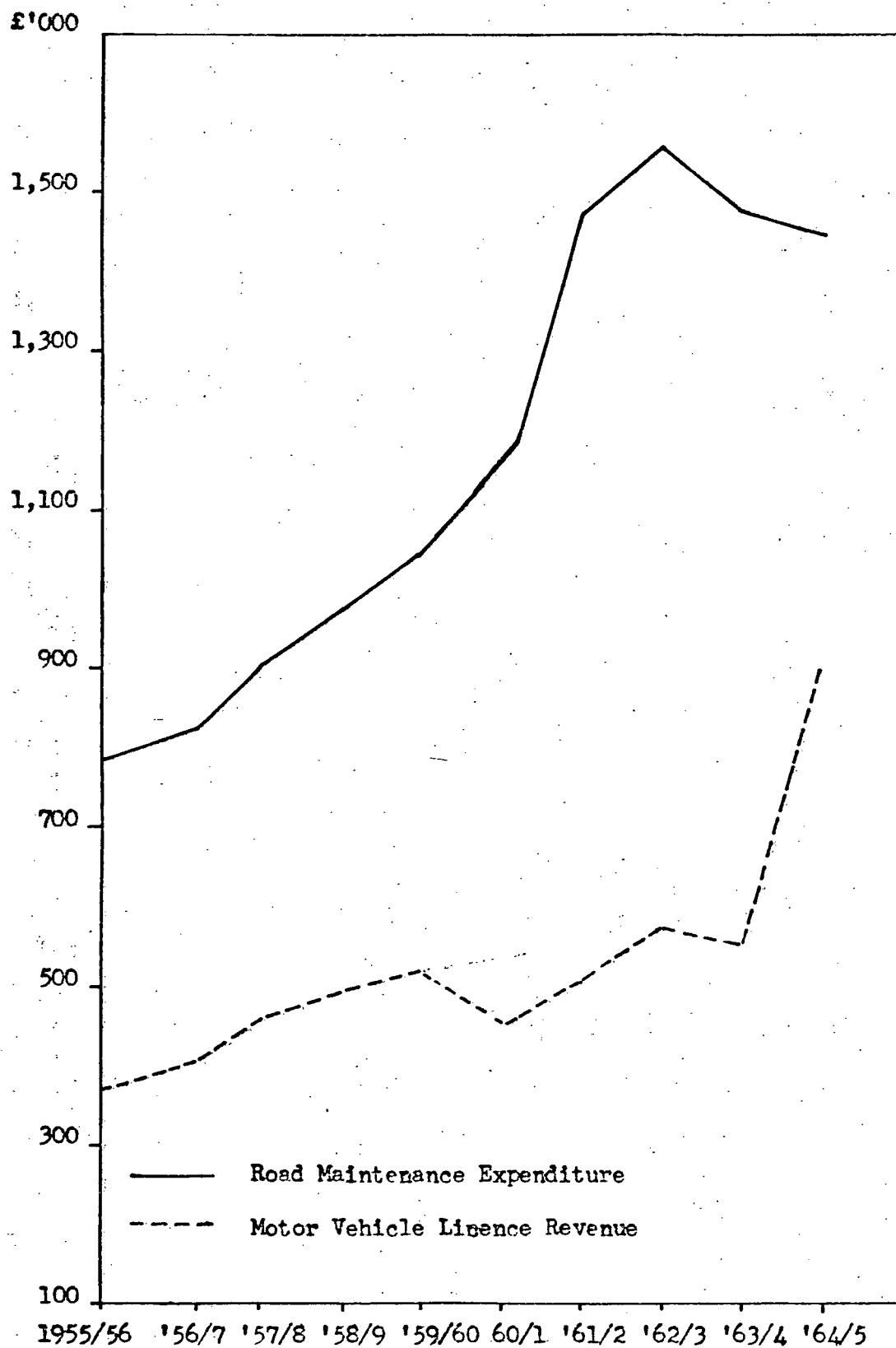
Figure 3: EXPENDITURE ON ROAD MAINTENANCE AND DEVELOPMENT



Source: Statistical Abstract 1959 & 1964, Central Statistical Bureau, (Bar-es-Salaam: Government Printer)

Figure 4: A COMPARISON OF EXPENDITURE ON ROAD MAINTENANCE
AND REVENUE FROM MOTOR VEHICLE LICENCES

100



Source: Statistical Abstract, op. cit.

£1.6 million in 1961. Expenditure on road development tended to decline between 1955 - 1959-60, when it went up again at the beginning of the Three Year Plan. From 1962, it started to fall off again until the beginning of the Five Year Plan. Figure 3 depicts the trend explained above. The increasing capital expenditure on road maintenance reflects the rapid deterioration of roads as traffic volume increased and because of the sub-standard condition of the roads.

The money used for road improvement came from General Revenue. The road users' contribution to this pool was mostly in the form of indirect taxation on imported motor vehicles and road transport equipment, motor fuel tax, and, more importantly, from motor vehicle licences. Because of the nature of the data on revenue obtained from these items, it is only possible to show the revenue derived for the last item. Revenue from motor vehicle licences increased all the time, as can be seen from Figure 4. But this was only half of what road maintenance was costing, which did not include capital for new road development. In practice, the balance needed to meet maintenance and the provision of new roads had to come from other sources. Thus, road maintenance consumed a sizable proportion of the limited resources. By so doing, less had to be spent in other sectors of the economy or even for the construction of new roads, e.g., feeder roads. The decline of expenditure on road development between 1956 and 1960, supports this observation (see Figure 3).

Figure 5: Value of Imports of Rail and Road Transport Equipment

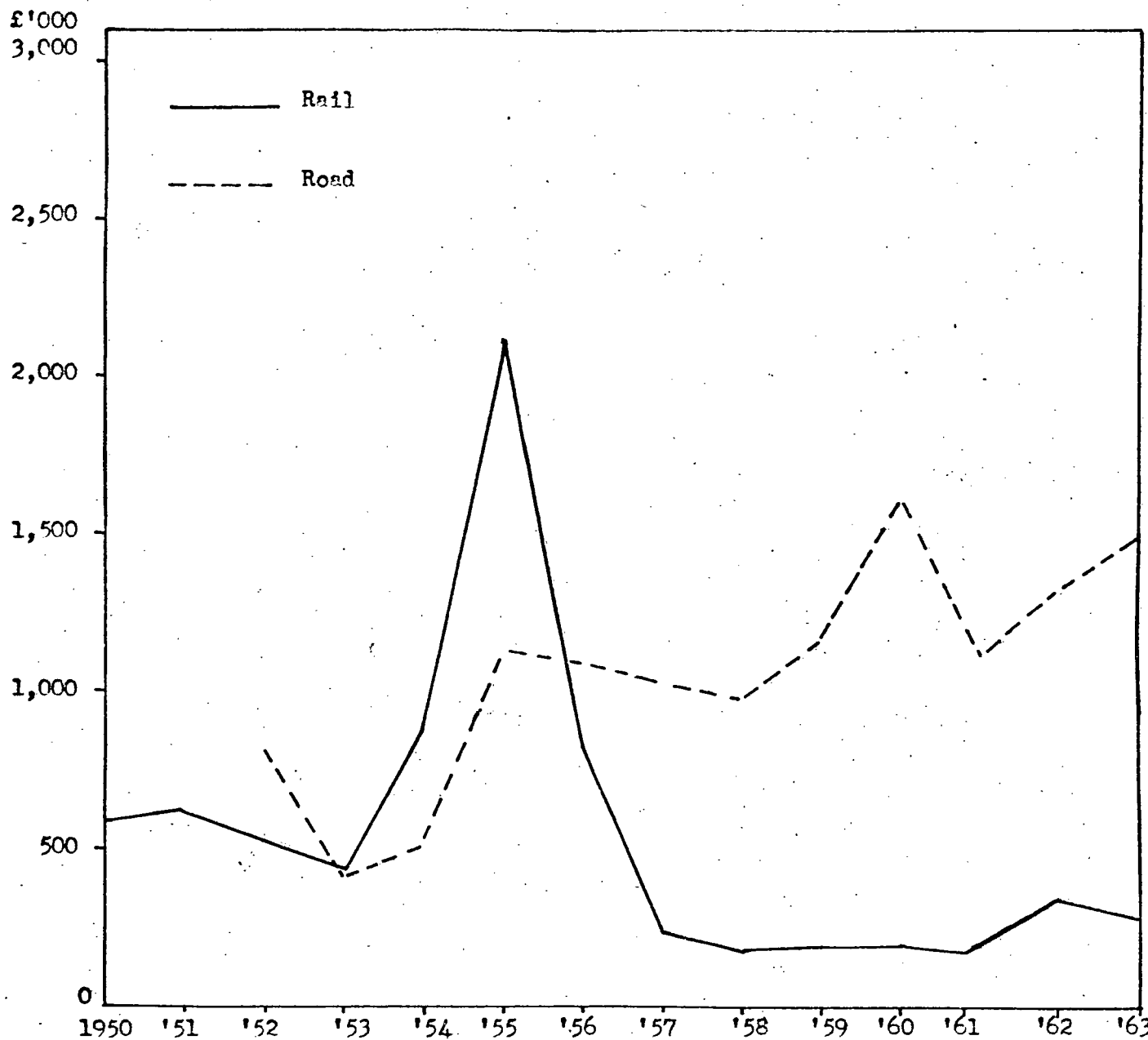
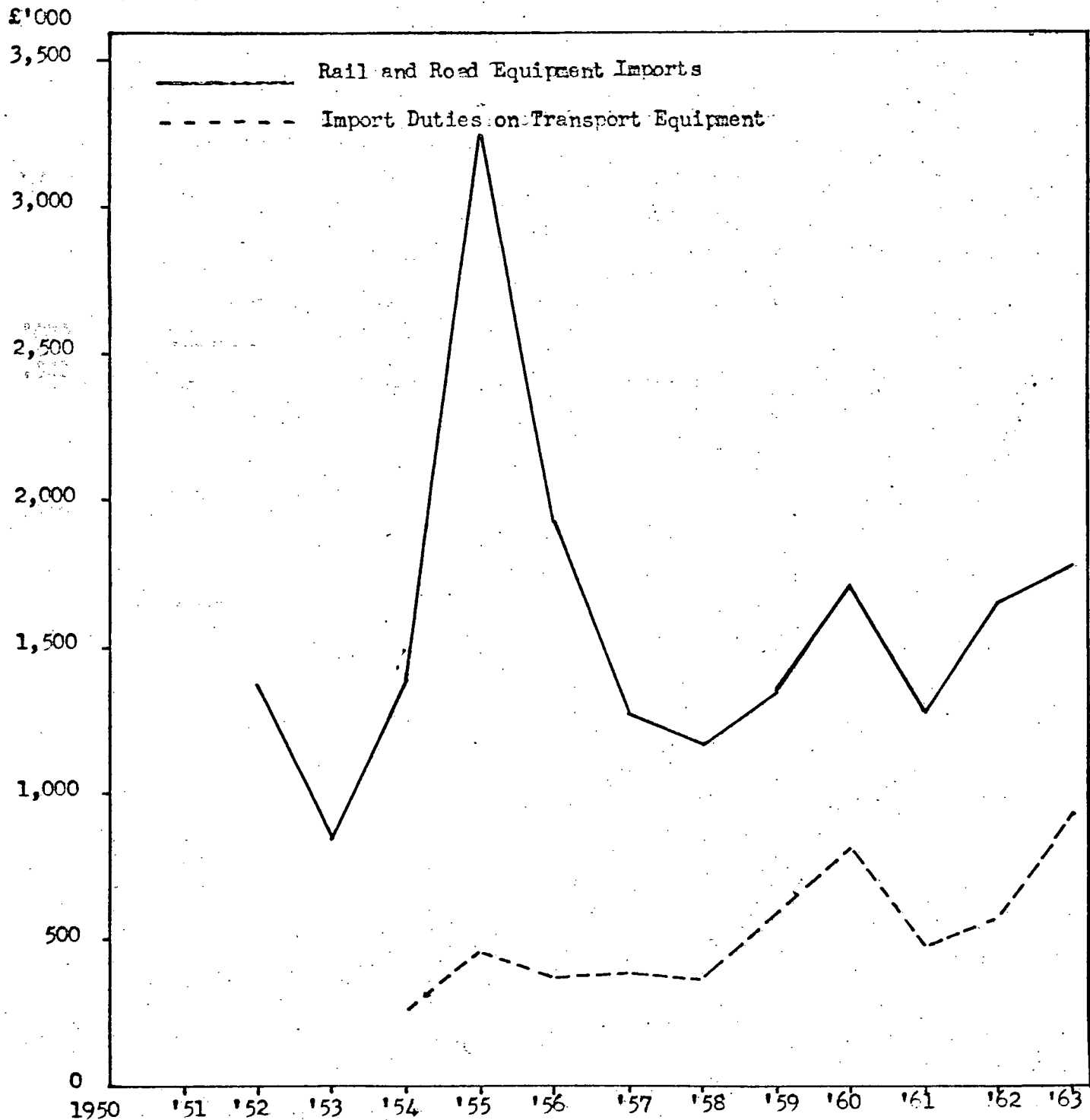
Source: Statistical Abstract, op. cit.

Figure 6: A Comparison of Values of Imports and Import Duties
on Rail and Road Equipment



Source: Statistical Abstract, op. cit.

Both rail and road had to depend (and still do) on imports for their equipment. To get these, the country had to pay in foreign exchange. Although the post Second World War demand for transport equipment has fluctuated, particularly that of railways, because of the long life of this equipment, it constituted a large investment as shown in Figure 5.

This demand created a market for foreign imported transport equipment. Thus, the benefits from local transport manufacture industry was non-existent. Whatever benefits arose accrued to overseas suppliers. The benefit to Tanzania was mainly in the form of indirect taxation on such imports. These, however, were small compared to total value of both rail and road equipment imported in this period, as Figure 6 shows. To have charged higher import duties would have resulted in the increase in the price of the equipment and, also, in more foreign exchange payments.

2. The Past Role of Transport in Tanzania's Economic Growth: An Assessment

The evolution of rail and road transport, and the economic growth of mainland Tanzania has been discussed. If we take the beginning of the establishment of German Colonial Administration as marking the starting point of a modern economic system of the country, it is important to remember that all this has taken place in a very short period of time -- just over 50 years. The fact that the economic development

of Tanzania is very recent, has been stressed by the World Bank Report. When assessing the role of rail, road and other transport facilities in general, this fact should be borne in mind.

The railways, which in Tanzania, preceeded road development, reduced travelling time and costs, particularly between inland centres and the coastal areas. It marked the end of long caravans of porters to and from the coast, which had been the feature of pre-railway era. Internal movement, however, relied on portage, especially in a north-south direction; and it was not until the building of roads after the First World War and the subsequent introduction of motor transport that the deficiency was met.

Portage as a form of transportation, primitive as it is, was not completely eliminated. It still forms an important link of the distribution system, where it is more economical than rail or road transport. It should, therefore, be regarded as an integral part of a "modern" transport system rather than a legacy of the past. Although it would appear that its days are numbered in view of the increasing popularity of the bicycle, which provides a better service and flexibility.

The overcoming of distance in space, which was achieved by the railways, was oriented towards export (raw materials) and import (manufactured) trade. The road system which evolved

in post Second World War period, accentuated in a north-south direction this "linear" aspect of rail/road transport facilities. A network system is yet to develop. Although the integration between rail/road was achieved physically, the absence of a feeder road system reduced its effectiveness. Thus the most important role played by railways was to facilitate export and import trade. This achievement was inevitable because it was the *raison d'être* for railway construction.

As in India and many former colonial territories, the railway linked Tanzania to international trade as a supplier of raw materials and consumer of manufactured goods. This role was strengthened by the "open door trade policy" pursued under the mandate system. By and large, the internal market was neglected. Road development, which could have been regarded as a more flexible transport mode for such development, was not developed to open up the internal market. Similar to the railway after 1948, the main road system was intended for administration, strategy and inter-territorial trade. When a customs union between Kenya, Uganda and Tanganyika, was established with a common tariff, the presence of good inter-territorial transport routes opened Tanganyika as a market for Kenya goods and made the Northern part of the country dependent upon the distributive trade of Kenya and Uganda.

It is not the argument here that if transport facilities had been geared towards encouraging the expansion of

an internal market, this would have facilitated rapid growth. Other factors, such as capital and increase in productivity had to be present. However, assuming for the moment that the amount of capital which flowed into Tanzania, and the level of productivity achieved in the period under review were above average, transport facilities oriented to internal market needs would have encouraged the establishment of those industries for which the market existed and hence reduced the increasing dependency of the country to Kenya imports. Local raw materials could have been used to manufacture these products. The policies which guided the development of customs union in East Africa did not favour Tanzania and thereby limited an increased level of economic growth in a regional framework.

Other factors were more significant than transportation in the rapid growth of export trade. The increase in import trade was determined by the increase in income from selling export products. The most important factor as far as export trade is concerned is the world price for primary products upon which Tanzania is dependent for its revenue. The effect of the fluctuation in the world price of sisal, the mainstay of the country's economy, has been and still is important in influencing the trend in the economic development of the country. The favourable prices which were enjoyed by this crop during the Korean boom, provided revenue which

enabled the government to embark on ambitious programmes and, in particular, road development. To this day, revenue obtained from sisal by the government still affects budgetary consideration in assessing annual expenditure on development projects, as can be learned from a recent budget speech:

The great disappointment has been sisal export tax revenue, which we originally estimated would yield £2.8 million. The final yield is not likely to exceed £800,000 -- a shortfall of £2 million. Taking all these factors into consideration, my revised estimate of total revenue for the year is £33 million as compared with my budget estimate of £34 million. 4

In addition, the viability of the sisal industry in terms of production costs has been the availability of capital and labour. These two factors have been more significant than transport costs (Inland). As shown above, the tapering of railway tariff rates and the closeness of the sisal plantations to sea ports, makes transport a less significant cost in the overall production process up to the time when sisal is shipped overseas. Neither can the present location of the sisal plantations be attributed solely to rail facilities, as was shown earlier.

In the production of other export crops, namely, cotton, coffee and cashewnuts, world prices for these commodities have equally been important. However, the establishment of centralized marketing through cooperatives and

⁴United Republic of Tanzania, Speech by the Honourable, the Minister for Finance, introducing the Estimates of Revenue and Expenditure 1965/66 to National Assembly, on 10th June, 1965 (Dar-es-Salaam: Government Printer, 1965), p. 6.

marketing boards has been very crucial in that they have insulated the peasant farmer from the affects of fluctuation in world prices, and, in so doing, providing a stable price incentive for increased production. These institutions also carry out on behalf of the peasant farmer those services which would have been beyond the means of a single farmer if he were to produce his cotton or sisal economically and receive a good return. Although in theory one can talk of transport costs in subsistence production (with the exception of the initial cost borne by the farmer), these costs are shared by many peasant farmers. Therefore, the transport costs are actually a small percentage of the overall income he receives, plus fringe benefits for being a member of a cooperative society.

These economic institutions, developed to meet the need of a peasant and largely subsistence economy, have been the key to the economic growth and prosperity of the rural areas, and Tanzania in general. It must be remembered that the achievement, though far from satisfactory, has come about despite an inadequate feeder road system, as well as poor transport service due to inadequate wagons and storage facilities. Also, the level of economic growth achieved to date, largely by increased agricultural production, was by use of poor and primitive methods of production. In the light of present knowledge of experimenting with new farming methods,

⁵Smith, op. cit., pp. 51-52.

present levels of production can be doubled and even trebled (e.g., cotton production).

The prevailing low productivity of the subsistence sector, which constitutes the largest market, has been a limiting factor, too. This provided only a subsistence level of income and limited demands to basic needs. At the same time, it has minimized pressure which would have been put on the poor transport facilities. Had this happened, it would have acted as a catalyst in transport improvement by eliminating those bottlenecks, which constitutes the present transport problem of the country stated earlier.

Also, although there was an increase in the supply of capital from local sources due to increase in export production, this amount has been less than what would have been achieved had levels of production been higher.⁶ To be effective, transportation must be related to productivity and, above all, to balanced growth.

When evaluating the role of transportation in a developing country, such as Tanzania, the most important factor is the cost of these necessary services. In the case of Tanzania, and this is much more relevant to railway rather than road development, this price was too high. The "cost of capital" used to build railways were totally beyond the means

⁶For a detailed discussion of the relationship between Productivity, Market, Transportation and Capital, see: Nurske, R., Problems of Capital Formation in Underdeveloped Countries; and, Patterns of Trade and Development. (Oxford University Press, 1967), pp. 4-31.

of the country in its early stages of economic growth. An average of 4.48% interest had to be set aside for amortizing loans borrowed to build railways. This crippled the financial as well as capital availability for economic development in general.

Although the high cost of capital was not confined to Tanganyika,⁷ the many disadvantages the country had as compared to other parts of Africa, which resulted in further flight of capital, meant that austerity measures in the allocation of the already limited amount of capital was essential to achieve a balanced growth. The total amount of capital used to repay railway debt before 1948, diverted capital which should have been invested in other sections of the economy to establish a base for future development. Thus, when railways are compared to roads, they inhibited development because of diverting capital to non-productive activities.

The roads, on the other hand, were largely financed from internal capital. But, because the initial road standards were very low, this resulted in high maintenance costs. After 1948, it was the roads rather than railways which called for increasing expenditure in the government budget.

The experience of Tanzania in rail and road development poses two issues in transportation development. First,

⁷Frankiel, H., Capital Investment in Africa (Oxford University Press, 1938), p. 174.

in regard to the railways, is the size of the country. Can it be said that the initial failure of the railways was due to the smallness of the country, since the neighbouring Kenya-Uganda railway, which served two countries as well as the Northern part of Tanzania, operated on a profit? Also, it was pointed out that one of the causes of loss of revenue for the Tanganyika railways was due to the diversion of Congo traffic.

The poverty of the country has also been considered⁸ as having been an obstacle to railway development. When the amalgamation took place, the proportion of traffic moved along the Tanganyika railways was still less than that along the Kenya-Uganda railway. It was the distribution of profits from a central pool rather than the increasing earning capacity of the line which accounted for its solvency. As far as volume of traffic along the two main lines is concerned, the Tanzania section still carries less traffic than that which originates from the hinterland within the national boundaries.

The second point to consider is the division of responsibility in the provision and maintenance of railways and roads. In East Africa, this is divided between the Railway Administration, which is a public corporation, and the individual governments. In the case of Tanzania, this division enabled more money to be spent on road development.

⁸Ibid., p. 282.

But there was no inter-territorial coordination of road development, as was the case with railway development after 1948. The suggestion to establish an East African Road Corporation recommended by the Royal Commission of 1953-1955, did not materialize. Thus, each country developed different policies as regards rail and road development.

In the case of Tanzania, traffic haulage by roads was restricted. The problem in due course has become not so much of control of road transport for the benefits of the railways, but the role these two modes can play in the development of the country. Given proper coordination, and with the encouragement being given to road development, the two modes are complementary rather than largely competitive. It would appear that there is an increasing need for coordination between railway and road operations and, therefore, between the agencies involved. The solution of this problem in future will go a long way to eliminate wastage due to uneconomic competition between the modes and to make them more effective in the economic development of the country.

In other parts of the world, the impetus provided by the development of rail and road was the market these services provided for consumption of iron and steel in locomotive and truck building and the development of the automobile industry. No such developments took place in Tanzania.

A transportation industry, as such, is still in the

adolescent stage, although its influence is beginning to appear in the Gross Domestic Product. Also, railway repair workshops are one of the most important employers in East Africa. But most of the employment benefits have accrued to Kenya, where the main workshop depot is located at Nairobi.

As far as road transport is concerned, the most important development has been in the growth of gas stations and garages for repair, while truck assembly and body building businesses are still few in number. Since all these activities depend mostly on imported items, Tanzania spends extra on charges for foreign exchange.

All these factors combine to explain why despite increased capital investment in transportation, its impact has not been as great as was the case in the developed areas. Not only that, but the wastage that occurred because of war damages and provision of transport facilities to meet war demands, as well as activities unrelated to the economic development of the country, such as the groundnut scheme, limited the role transportation would have played in the economic growth of Tanzania.

How far does the role of transportation in the past economic development become useful in planning for future development in Tanzania, and developing countries in general?

What should be the role of transportation in the future development of the country? These questions, as well as a framework for transport planning at a national and regional level; transport coordination, and transport as a tool to facilitate the implementation of some of the national objectives, such as "Ujamaa Villages", are examined in the following chapter.

CHAPTER VI

TRANSPORTATION AND ECONOMIC DEVELOPMENT

1. Observation and Conclusions

In a country, which was completely undeveloped toward the end of the 19th Century, with portage as the major form of transport, railways were regarded as the prerequisite to any form of development. The objectives guiding railway development, and transportation in general, were mixed; the main ones being humanitarian, political and economic.

Initially, in the case of Tanzania, strategic and administrative reasons predominated, especially during and immediately after the First and Second World Wars. Economic motives were secondary, and oriented towards encouraging overseas trade for sources of raw materials and markets for manufactured goods. The pattern of transport routes which developed was typically colonial -- linking sources of raw materials to markets overseas and vice versa. The railway system of Tanzania still reflects this trend, which is being perpetuated by virtue of the country being a primary products exporter. Mining and grandiose agricultural schemes also led to transport development, especially railways.

In Tanzania, railways proved to be too expensive a

mode of transport for initiating economic development. In developed countries like the United States and the United Kingdom, where water transport preceeded railways, the latter form provided better services but not necessarily cheaper.

In Tanzania, railways provided better and cheaper service compared to portage. But, they became a financial burden to the country. The capital for constructing and maintaining the system was beyond the financial resources of the country. The line ceased to be a liability when it was made part of a regional railway system.

The question of size of the country as a factor holds good in East Africa, which in essence constitutes a well defined geographical unit. Since the two major railways of East Africa were constructed by two rival powers, German and British, strategic reasons overshadowed the geographical unity of the area. When the whole of East Africa came under British rule after 1919, events were to lead to the unification of the two railway systems under one administration.

The success of the East African Railway Administration in being able to operate at a profit has made it a viable public utility agency, with the support of the three East African governments, able to float bonds on international markets as well as borrow from the World Bank capital for further transport development. This is a very important aspect of transport development in East Africa. The existence of the Railway Administration has removed obligation for railway

development from the individual three East African governments. No allocation is made for railways in the national budgets. But any development planned by the Railway Administration for any one of the three East African countries, and approved by all three governments, is considered in the over all annual development programmes.

The high cost of railways development favoured road investment for stimulating economic development. The policy for road development was to provide country-wide low-cost roads, with emphasis on Trunk roads forming a "grid". This pattern of main roads was achieved easily. But it was not evolved as a function of economic activities. Its effectiveness was further reduced by lack of feeder roads.

The initial standard of roads provided, which could be improved as demand increased with the volume of traffic, were too low. Thus it called for higher maintenance costs than would have been the case if, for example, an all weather standard was adopted. In view of the fact that it is excessive rains which tend to cause much damage to existing low standard roads, the choice of provision of all weather roads would have been quite in order. The result of providing low standard roads was that these consumed extra resources which could have been used for completing the missing link in the system -- the rural feeder roads.

An examination of the Five Year Plan Road Programme shows that at least a quarter of it is in the form of road

improvements for upgrading earth surfaces to gravel, and the latter type to bitumen surface. In view of the high demand for scarce capital in other sectors of the economy, road development policies should aim at providing roads which can stand up to weather conditions of Tanzania; as well as to ensure reduction in maintenance costs. Even more important is that it is better to have few miles of main roads of good standard, complete with feeder roads, rather than to have many miles of substandard main roads, which are expensive to maintain, but at the same time incomplete because there are no feeder roads and are unrelated to existing economic activities.

The organization of railway and road transport was influenced by the desire to control rail/road competition. On one hand, road development was encouraged as a basis for developing new areas; on the other hand, it was being restricted so as to ensure sufficient traffic for railways. The pursuance of a restriction policy on road development was based on the experience of developed countries where railways were losing traffic to roads. The preoccupation with rail/road competition retarded the movement of goods by road, especially long distance haulage. Even more so, it distorted the picture of a transport environment in a developing country.

In an area where one mode of transport is not enough for development, transport policies should have been to foster

the maximum use of existing capacity of all modes of transport and make them complement rather than compete with each other. This approach would have resulted in a better coordinated transport system than at present. In view of the fact that the interval between the establishment of one transport mode (e.g., railway) and another (e.g., road), has been relatively short in Tanzania, and the fact that the majority of the people cannot afford to buy their own vehicles, competition to the extent which has taken place in the developed countries is unlikely to occur in Tanzania.

There are other factors which suggest that complementary rather than competitive modes should be the guiding principle in transport organization of Tanzania. The peripheral location of population and economic activities is one reason. The pattern of wholesale and retail trade is another. In the case of the latter, road transport is the most convenient mode for collection and distribution, as this is on a cross-country basis and transported in small and less bulky consignments. Road transport is also increasing in popularity for passenger movement even for long distances, because buses offer a better service than the railway. Railways will continue to be important for bulky and large consignments on long line haulage and, in particular, to ports and vice versa.

The understanding of the role which different modes of transport play -- in this case, rail and road -- in a

particular country is essential if, co-ordination and, finally, integration of the transport network is to be achieved. The experience of the Soviet Union in this field is worth noting. According to Zvonkov:

one of the fundamental principles of the planning of a joint transport is that transportation be regarded as a unified technological process for the transfer of commodities from the sphere of production to the sphere of consumption and not merely that part of this process pertaining to the origination and termination of goods on a single medium of transportation such as from one rail terminal to another. The unified technological transportation process refers to the most efficient utilization of all the inter-related transport media, personnel, and organizations participating in the movement of commodities. This process includes all the components of a particular service, such as the type of equipment, transshipment terminals, storage, buses, and the distribution of commodities. 1

While perhaps this describes a very sophisticated level of transport integration, there are other ways which a developing country like Tanzania can adopt as a point of departure. The innovation of a new technology is a good example. The introduction of wagon ferries on Lake Victoria, which provides a model combination of water and rail, is an illustration of the technological changes taking place in the development of transport in East Africa. In the case of rail and road, however, transport policies will still remain

¹Taafe, R.N. (ed.), Principles of Integrated Transport Development in U.S.S.R. (Department of Geography, University of Chicago), p. 14.

²East African Railway and Harbours Annual Report 1965 (Government Printer, Nairobi, Kenya), p. 3.

the most important tools for co-ordination until such a time that a technological innovation will be introduced (e.g., piggy backs), which will enable the integration of rail and road.

This co-ordination can be achieved through the formation of a National Transport Board. The function of the Board, however, will not be confined to bringing about co-ordination between rail and road, but will include the important task of transportation planning on a national level. The basis for such a Board is existing already, namely, the Transport Licensing Authority. But if it can be formed on the basis of the recently established "Regional Road Boards", it will be even better.

The Regional Road Board Act (1967) enables the Minister in charge of communications to establish for any region a Regional Road Board. The function of a Regional Board is to make recommendations to the Minister respecting the construction, improvement, alteration, reconstruction, maintenance and supervision of roads, ferries and aerodromes, except for roads within an area of jurisdiction of a city or municipal council.³ This Act, as can be gathered from above, includes the consideration of facilities for other modes. The emphasis on roads is a recognition of what constitutes a bottleneck in the country's transportation system. Due to the emphasis of developing territorial main roads mentioned

³Personal Letter from Ministry of Communications, Labour and Works, The United Republic of Tanzania. Ref. No. CW.44019/72, August 12, 1967.

earlier, it meant that local areas remained uncoordinated to the main road system of the country. Regional Road Boards, therefore, are intended to fill the gap by assessing transportation needs at a regional or local level and deciding on priorities for expenditure.⁴

A National Transport Board can be formed by heads of all Regional Transport Boards.⁵ This will bring together what amounts to a list of transport problems and needs from different parts of the country. It will reflect the type and magnitude of transport problems which exist. The disadvantage of this approach is in the allocation of funds. There may be a tendency by regional representatives to overlook national priorities by concerning themselves with problems of the areas they represent. It is here that the second alternative is advantageous. A National Transport Board should be constituted by members not connected with Regional Transport Boards. It should include government officials from the ministries of:

- a) Communication and Labour;
- b) Agriculture;
- c) Industry, Mining and Power;
- d) Lands, Surveys, Water and Settlements.

⁴Regional Road Boards have been established in Mwanza, Mara and Shinyanga Regions, an important cotton growing zone of Tanzania.

⁵"Transport" will be a better substitute for "Roads", because it covers all modes.

Representatives should also be included from Railway Administration in Tanzania, road transport firms, business and industrial firms, cooperatives and marketing boards. The Regional Transport Boards will send all their transport needs and problems to the National Board. These items will be examined in conjunction with the transport requirements for development of the country as a whole and the funds available will be allocated on the basis of "national transport priorities".

How much transportation does a developing country need to ensure smooth economic development? Here again the experience of the Soviet Union is relevant since it is based on planned development. In the Soviet economic development, funds were diverted for transport improvement only when capacity threatened to be a bottleneck in industrial development, which was a priori in the country's planned development.⁶ The Soviet transport policy was also geared towards improving railways at the expense of other modes, and concentrated on the movement of freight rather than passenger traffic.⁷ In so doing, the Soviet Union was able to achieve an intensive utilization of transport capacity without too much investment of new capital.

Tanzania has embarked on planned economic and social

⁶Fromm, op. cit., p. 124.

⁷Ibid.

development. Unlike the U.S.S.R., however, resources are limited. The goals are also different. Tanzania aims at doubling the income of the people, becoming self-sufficient in trained manpower and in doubling the average life expectancy, by 1980.

Despite emphasis on social infrastructure, it is economic infrastructure which is given priority, with the transport sector ranking third and accounting for 16% of total investment.⁸ In the case of the first goal, its realization will depend on increased investment in the agricultural sector which employs over 50% of the population. It was shown earlier that had better agricultural methods been used, higher levels of production would have been realized than that achieved to date.

Investment in agriculture should be a priori in Tanzania. The agricultural transformation approach advocated in the plan can best be achieved within the planned period through investment in better methods of agricultural production, as well as the provision of facilities such as storage and curing factories which in some areas have limited the expansion of certain cash crops as well as giving rise to unnecessary long distance transport demand.

In contrast to the Soviet Union, in Tanzania there has been increased allocation of resources to the transport sector, with a rise in production. This has been the case in India, too.

⁸Farer, T.J. (ed), Financing African Economic Develop-
(M.I.T. Press, 1965), p. 24.

Some of this expenditure, in the case of Tanzania, was intended to eliminate the "colonial legacy" in the transport sector, and not necessarily reflecting increasing demand for more transport capacity. This investment is justified because it is geared towards orienting the transport system into internal needs and, therefore, stimulate local markets.

It is this type of expenditure which was referred to at the beginning (see Chapter I, p. 4) as a "forced investment". It seems to be unavoidable if economic and social objectives of post independence are to be fulfilled. The increasing expenditure on transportation in developing countries is not merely intended to create more capacity or for modernization of railway and upgrading roads, but it is also due to the reorientation of the network to meet economic, social and political goals.

Transport needs increase with rise in economic growth. The higher the level of economic growth the more transportation a country needs. In Tanzania, the supply of transport capacity ahead of demand was unsuccessful, as the failure of the Manyoni-Kinyangiri railway showed. But in the light of present planned development now taking place in Tanzania, provision of transport capacity ahead of demand would not necessarily lead to the same results. It is the scarcity of resources which makes this approach undesirable. Resources spent on providing transport ahead of demand will have greater

benefits if used to alleviate problems in other sectors of the economy and, in so doing, facilitate balanced growth.

The role transport can play and its effectiveness in economic development will be determined by all the factors discussed above. Thus, to be effective, transportation must be planned carefully. Present and future needs ought to be determined. Traffic should be allocated according to the relative advantage of one mode over the other for such traffic. New technological possibilities should be considered. These, as well as benefits accruing from new transport projects in relation to cost and the effects on the country's balance of payments, employment position and integration with the existing transport system, have to be considered in allocating resources for further transport development.

2. Framework for Transport Planning and the Choice of Mode for Future Development

The effective role of transport in future development of Tanzania will depend first on the extent which existing problems will be overcome. The modernization of the railways from steam to diesel engines now underway, the provision of adequate rolling stock, storage facilities, upgrading roads, and the provision of feeder roads, are some of the problems which require immediate attention.

Port capacity and facilities also must be improved if the needs of Zambia are not to cause a bottleneck in the capacity of the system. It also depends on the formulation of good management policies which will ensure the maximum use of limited transport facilities and capital resources.

All these considerations will require careful planning, not only of the Tanzania transport system, but that of East Africa and Zambia as a whole. Thus the proposed Tanzania-Zambia rail link has to be considered in planning the transport sector to meet future needs.

A transport plan for Tanzania as such does not exist. All that is indicated in the Five Year plan is the amount to be spent on different transport projects and, in particular, road projects. No attempt has been made to estimate present or future transport needs for Tanzania.

Transport planning for Tanzania can be approached either on a micro or macro scale. The first refers to national and the second to regional level. The approach selected will depend on whether the project involves Tanzania alone or Tanzania and a neighbouring country. Also, whether the plan is for rail, road, water, air, pipeline or port development. In the case of rail, water, air, and port, and because they are organized on a regional basis, the macro approach will be the best to use. Appendix E depicts a suggested framework for determining transport needs at micro

and macro levels, and the factors which should be considered.

When planning transportation to meet future needs, the choice of mode usually arises. In the case of Tanzania, this is reflected in the proposed Tanzania-Zambia railway which will join the Central line to the Zambia railway system. Although the decision to build it has been accelerated somewhat by the Rhodesian crisis, it still provides a good example of the dilemma facing developing countries in deciding whether future investment in the transport sector should be in rail or road.

The difficulty partly arises from the misunderstanding of the role railways have played in the past. In the case of the Tanzania-Zambia railway, the situation is slightly more complicated. The crux of the problem is not the magnitude of the investment involved, but rather the effect this railway will have on existing railways now providing (or used to) outlet to Zambia, and depending for most of their revenue on the movement of Zambian copper and import goods. These railways (Rhodesia and Benguela railway), as well as some other less direct routes, are not being used at full capacity. Thus, it will be uneconomical to allocate scarce resources to provide more transport facilities when the present ones are still under-utilized.

The opportunity costs of investing in a railway

facility instead of agriculture will be very high -- if its benefits will not exceed construction costs. Also, as far as the provision of adequate transport between Zambia and Tanzania is concerned, it is argued that the improvement of the existing road (the Great North Road) can best meet the anticipated trade between the two countries. Resources, therefore, should be invested in the upgrading of this road to an all weather standard.

The other reason against building the railway is the gauge problem. The East African Railway system is on a metre gauge, while that of Zambia is on a 3' 6" gauge. This will require a switching station to enable the transfer of engines and wagons from one system to the other, thereby increasing operating costs. Therefore, the World Bank declared the railway project uneconomic and favoured financing the upgrading of the Great North Road.

As far as Tanzania is concerned, a "southern railway" seems to be overdue. The proposed railway will pass through the Kilombero Valley and the Southern Highland, two areas of high agricultural and mineral potential suffering from lack of adequate transport facilities. The construction of this line will make possible the exploitation of the coal and iron ore deposits in the Ruhuhu Basin. The proposed steel rolling mill will provide a ready market.

⁹African Research Bulletin (Africa Research Limited, England), Vo. IV, No. 12, January 13, 1968, p. 903.

In the case of Zambia, political considerations underlie the desire to construct the railway so that it can have a reliable outlet, in view of being surrounded by "unfriendly" countries, especially since U.D.I. by Rhodesia.¹⁰ But having committed itself to the railway, Zambia will make sure that it moves most, if not all, of its export and import traffic along it.

Thus, the fear that the new line will run at a loss is unfounded. Nor will the diversion of traffic by Zambia be contrary to what has been taking place in the area. The pattern of traffic movement between the Rhodesia and Benguela railway has not been determined by market forces only. The predominant use of the Rhodesian railway by Zambia, which is a longer route to markets than the Benguela railway, has been determined by "agreements among private companies and railways, by railway tariff policies, and ocean shipping rates, [and] political relations among the colonial powers or among the countries themselves".¹¹

The probability of diversion of traffic by Zambia to the new line is the underlying objection to the building of this railway. The historical evidence provided by railway development in Tanzania shows that the Central Line suffered

¹⁰Unilateral Declaration of Independence.

¹¹Haefele, E.J., Steinberg, E.B., Government Control on Transport, An African Case (Washington, D.C.: Brookings Institution, Transport Research Programme), p. 10.

a loss when copper traffic from the Congo was diverted to Lobito after the completion of the Benguela railway. A similar diversion of traffic will turn these two railways, which are now operating at a profit, to a loss.

The advantages of the railway to Zambia include the benefit which will arise from being able to control at least half of the proposed railway and rolling stock in its own national boundaries and those of a friendly nation. The new employment created by the project, and above all the stronger links with East Africa, with which it shares common political and economic objectives, are additional benefits. Further, there is the hope of being admitted into the East African Economic Community¹² (including Kenya, Uganda, Tanzania, Ruanda, Urundi and Zambia; and possibly Somalia and Ethiopia).

To appreciate the nature of the proposed Tanzania-Zambia railway, one must go beyond political factors. It involves the question of forming a large and uniform Regional Economic Group, efficiently served by transport facilities to expand the market for agricultural, industrial and economic development in general.

The World Bank's refusal to finance the project, however, was not the end of the story. The Maxwell-Stamp report has found the railway economic and, therefore, feasible. This finding, as well as the deterioration of relations between Zambia and Rhodesia, has made the project a necessity.

¹²The Standard-Tanzania: No. 11538, 2nd December, 1961, p. 1.

The construction of the railway has been brought close to reality by the readiness of the People's Republic of China to give an interest free loan to the two governments for construction of the line.¹³ A project planning agency was formed by the two countries last July,¹⁴ to examine technical matters, such as the gauge problem. An engineering study is now being carried out. All these events suggest that the railway will be built. When the railway, which has a total length of 1,042 miles, is eventually constructed, it will constitute the biggest undertaking ever to be carried out in the present century, both in terms of miles and the size of capital investment involved which is about £100,000,000. The railway will take between five to seven years to build.

3. Transport and Ujamaa Villages

Transportation, when it is properly utilized, is an effective tool in assisting the attainment of economic and social objectives. In Tanzania, for example, transportation has a role to play in "rural transformation" approach to agriculture, based on planned "Ujamaa" Villages.¹⁵ The government will assist in the setting up of these communities by

¹³The Standard-Tanzania, No. 11467, Sept. 11, 1967, p.1.

¹⁴The Standard-Tanzania, No. 11415, July 12, 1967, p. 1.

¹⁵For details on the philosophy guiding the setting up of "Ujamaa Villages", the reader should consult:

Nyerere, J.K., Socialism and Rural Development (Dar-es-Salaam: Government Printer, 1967),

providing capital, and capital equipment such as agricultural machinery, technical advisers in agriculture and animal husbandry, teachers; as well as community facilities like schools, health centres, and water supplies. Many of the villages will be based on the production of agricultural commodities, and organized on a cooperative basis.

The location of Ujamaa Villages will be determined by the availability of capital, willing settlers to undertake the initial pioneer work, the type of crop to be grown, and, therefore, favourable environmental factors. Transport facilities and demand also have to be examined before final decision to set up the villages is made.

Transport requirements will vary from accessibility of the proposed area for settlement, either by rail, road or water. The relocation of people and other requirements for establishing the settlements will be influenced by existing transport facilities. In an area where these are absent or poor, it is bound to increase initial capital costs, especially if new transport routes have to be surveyed and constructed. Consideration will also have to be given to the level of service being provided for passenger and goods traffic. Distance from major centres of supply, as well as transport requirements for expected levels of production from the settlements will be of major consideration in planning Ujamaa Villages. Thus, transportation should be

made an integral part of the "Ujamaa Village" planning process.

.....

The pronouncement that transport alone is not enough for economical development has been pointed out time and time again. In this Study it still holds good. Transport as a means to an end should be made to serve the needs for which it is supposed to provide a service. It must not be developed in such a way that it results in misallocation of scarce resources.

In developing countries, such as Tanzania, where capital for development is scarce, austerity measures should be practised to reduce increasing allocation of resources now being channelled into transportation. But this should be done after a thorough investigation of the whole economy has been made to ascertain what constitutes the problem.

As it has been shown here, in some cases it is the lack of storage facilities or a processing factory which give rise to unnecessary transport demand; and, hence, increasing expenditure on transportation.

It is in pointing out such misdirection of resources that past investment in transport guides future planning: but this is not the end of the task. The process ought to continue through reappraisal of the transport problems of the developing countries, and, in particular, establishment of a theory for transport research and development.

APPENDIX A: DEVELOPMENT PLAN: 1955 - 1960
ROAD PROGRAMME

Road	Proposed Expenditure			
	1955/56	1956/57	1957/60	Total
I The Great North Road				
(a) Arusha - Makuyuni	£ 200,000	£ 75,000	£ -	£ 275,000
(b) Porotos Deviation	75,000	175,000	90,000	340,000
(c) Bridges	60,000	20,000	-	80,000
(d) General Improvements	10,000	10,000	70,000	90,000
Total	£ 345,000	£280,000	£ 160,000	£ 785,000
II Other Trunk Routes				
(a) Dar-es-Salaam/Morogoro	20,000	£ -	£ -	£ 20,000
(b) Morogoro - Iringa	279,000	-	-	279,000
(c) Southern Trunk Route:				
Lindi - Mtama	14,000	-	-	14,000
Other Sections	15,000	20,000	5,000	85,000
(d) Eastern Trunk Routes:				
Coastal Road	15,000	50,000	300,000	365,000
(e) Tanga - Nrthn. Prov.:				
Korogwe Pare Border				
Sections	50,000	50,000	50,000	150,000
(f) East/West Trunk Route:				
Morogoro - Western				
Province	10,000	20,000	80,000	110,000
(g) Western Trunk Route:				
Uganda Border - Abercorn:				
-Bukoba Dist. Section	25,000	25,000	50,000	100,000
-Westrn. Prov. "	10,000	10,000	20,000	50,000
(h) Lake Victoria/Lake Nyasa:				
Kenya Border -				
Musoma Section	15,000	20,000	80,000	115,000
Musoma/Mwanza Sect.	10,000	20,000	30,000	60,000
Mwanza/Tabora "	10,000	10,000	20,000	40,000
GNR/Lake Nyasa "	10,000	10,000	50,000	70,000
Total Trunk Routes	£ 483,000	£235,000	£ 740,000	£1,458,000

APPENDIX A: DEVELOPMENT PLAN - 1955/60: ROAD PROGRAMME

Road	Proposed Expenditure			
	1955/56	1956/57	1957/60	Total
III Territorial Main Roads				
(a) Mwanza - Biharamulo	£ 100,000	£150,000	£ -	£ 250,000
(b) Ushashi - Nansio	10,000	-	-	10,000
(c) Feeder Roads to Southern Prov. Rlwy.	13,000	7,000	-	20,000
(d) Luiche Swamp - Kigomo	10,000	15,000	-	25,000
(e) Njombe Roads	10,000	50,000	50,000	110,000
(f) Kilombero Valley Roads	20,000	30,000	-	50,000
(g) Mpui - Ilemba	8,000	-	-	8,000
(h) Dar-es-Salaam - Morogoro Rd. to Handeni	-	10,000	30,000	40,000
(i) Other Major Roads	10,000	10,000	100,000	120,000
Total Territorial Main Rds.£	181,000	£272,000	£ 180,000	£ 633,000
IV Other Road Projects				
(a) Improvements Territorial & District Main Roads	£ 20,000	£ 20,000	£ 60,000	£ 100,000
(b) Bituminization Main Rds.	20,000	20,000	80,000	120,000
(c) Lake Prov. Cotton Roads	20,000	20,000	40,000	80,000
(d) Eastern Prov. Cotton "	20,000	20,000	40,000	80,000
(e) Northern Province Roads	80,000	10,000	10,000	100,000
(f) Surveys	8,000	5,000	7,000	20,000
(g) Ferries	10,000	10,000	20,000	40,000
(h) Minor Road Construction	8,000	28,000	24,000	40,000
(i) Improvements Dist. Rds.	8,000	12,000	36,000	56,000
(j) Road of Access - Agricultural Areas	2,000	5,000	13,000	20,000
Total	£ 196,000	£130,000	£ 330,000	£ 656,000
Grand Total*	£1,205,000	£917,000	£1,410,000	£3,532,000

* (excluding Urban unforeseen roads)

Source: Development Plan: 1955-1960 Capital Works Programme
 (Dar-es-Salaam: Government Printer, 1955), pp. 16-17.

APPENDIX B:

F.Y.P ROAD PROGRAMME - ROAD EXPENDITURE CARRIED OVER FROM T.Y.P.
AND ESTIMATED ROAD EXPENDITURE BY 1966/67

Route and Project Designation	Year	Capital Expenditure F. Y. P.	T. Y. P. Carry- over	F. Y. P. Provision	1966/67 Approved Estimate
<u>A. Main Roads</u>					
<u>1. Great North Route</u>					
Arusha (Dodoma Corner) - Babati) <u>Extension of bitumen towards</u>) <u>Babati</u>)	1968/9	£ 35,000	£ -	£ 35,000	£ -
Iringa - Makumbako -) <u>Extension of bitumen</u>) <u>towards Utete</u>)	1968/9	63,500	-	63,500	-
Programme Total	1968/69	£ 98,500	£ -	£ 98,500	£ -
<u>2. Western Trunk Route</u>					
Uganda Border - Bukoba -) Biharamulo: <u>Build Kyka Bridge,</u>) <u>bituminization of Uganda</u>) <u>Border - Bukoba</u>)	1964/66 & 1967/69	£ 750,000	\$ 250,000	£ 500,000	£ 195,000
Nyakanazi - Uvinza - <u>build</u>) <u>Malagarasi River Bridge</u>)	1966/7	200,000	-	200,000	29,000
Uvinza - Zambia Border - <u>build</u>) <u>Uvinza Bridge to replace ferry</u>)	1967/68	300,000	-	300,000	5,000
Programme Total	1964/68	£ 1,250,000	£ 250,000	£ 1,000,000	£ 229,000

APPENDIX B

F.Y.P. ROAD PROGRAMME - ROAD EXPENDITURE CARRIED OVER FROM T.Y.P.
AND ESTIMATED ROAD EXPENDITURE BY 1966/67

Route and Project Designation	Year	Capital Expenditure F. Y. P.	T. Y. P. Carry- over	F. Y. P. Provision	1966/67 Approved Estimate
<u>3. Eastern Trunk Route</u>					
Kenya Border - Tanga - Segera) Sigi River: <u>Bridge and</u>) <u>Extension of bitumen towards</u>) <u>Kenya Border</u>)	1964/66	£ 100,000	£ 22,000	£ 78,000	£ -
Segera - Chalinze:) <u>Bituminization of</u>) (IDA scheme No. 3))	1964/67	625,000	-	625,000	360,500
Chalinze - Naganga: <u>Survey of</u>) <u>new alignment</u> (stabilized) earth standard) AID scheme)	1964/65 & 1968/69	235,000	235,000	-	13,750
Nanganga - Mingoyo - Mtwara;) <u>Complete engineering gravel</u>) <u>to Nanganga. Commence bitu-</u>) <u>minization of Mingoyo to</u>) <u>Nanganga. (Part I IDA Scheme</u>) No. 5))	1968/69	225,000	-	225,000	-
Programme Total	1964/69	£ 1,185,000	£ 257,000	£ 928,000	£ 384,250

APPENDIX B:

F.Y.P. ROAD PROGRAMME - ROAD EXPENDITURE CARRIED OVER FROM T.Y.P.
AND ESTIMATED ROAD EXPENDITURE BY 1966/67

Route and Project Designation	Year	Capital Expenditure F. Y. P.	T. Y. P. Carry- over	F. Y. P. Provision	1966/67 Approved Estimate
<u>4. Central Trunk Route</u>					
Dodoma - Singida: <u>Survey and</u>) <u>reconstruction Manyoni - Issuma</u>) <u>to engineering gravel standard</u>)					
Programme Total	1964/68	£ 231,900	-	£ 231,900	£ -
<u>5. Northern Trunk Route</u>					
Taveta Junction - Segera:) <u>Bituminization of Mkumbura to</u>) <u>Kisangiro (IDA scheme No. 4)</u>)					
Programme Total	1964/68	£ 1,319,375	£ 146,000	£ 1,173,375	£ 930,000
<u>6. Southern Trunk Route</u>					
Nanganga - Masasi - Songea) <u>Engineered gravel Nanganga -</u>) <u>Masasi</u>)	1964/66	£ 221,000	£ -	£ 221,000	£ -
Songea - Njombe - Wino -) Kifanya: <u>Realignment</u>)	1964/66	£ 80,000	44,000	36,000	50,000
Mtwara-Zambia Link Road: to) <u>raise standard of existing</u>) <u>running surface between Mtwara</u>) <u>and G.NR</u>)		-	-	-	650,000
Programme Total	1964/67	£ 301,000	£ 44,000	£ 257,000	£ 700,000

APPENDIX B (F.Y.P. ROAD PROGRAMME - CONT'D.)

Route and Project Designation	Year	Capital Expenditure F. Y. P.	T. Y. P. Carry- over	F. Y. P. Provision	1966/67 Approved Estimate
B. Major Link Roads					
Mwanza - Usagara - Biharamulo: <u>Bituminization of Usagara - Kikongo</u>	1967/68	£ 50,000	£ 14,500	£ 35,500	£ -
Nyakanga - Bunda - Mwanza: <u>Complete Engineered gravel Mwanza-</u> <u>Nyakanga, bituminization of</u> <u>Mile 22 to Magu.</u>	1964/66	240,000	60,000	180,000	13,500
Morogora - Iringa - <u>Bituminization</u> <u>of Morogoro Mile 38 to Mile 148,</u> (IDA schemes No. 1 & 2) (has been reduced to engineering design)	1964/67	977,875	101,500	876,375	-
Makuyuni - Ngorongoro - Bariati- Mwanza - Arusha, Link Road <u>Feasibility Survey</u>	1964/65 & 1968/69	50,000	-	50,000	-
Kenya Border - Musoma: <u>Engineered</u> <u>Gravel: Musoma to Mile 20. Drain-</u> <u>age Mile 20 to Kenya Border.</u> (IDA scheme No. 9)	1964/66	187,500	-	187,500	-
Usagara - Nzega: <u>Bituminization</u> <u>of 23 miles of road from Usagara</u> <u>to Maguiki</u>	1967/68	186,250	-	186,250	-
Lindi - Masasi - IDA project completed		-	-	-	100,255
Dar-es-Salaam - Tunduma: <u>Survey & Design for the section of</u> <u>GNR Tunduma - Iringa. AID project</u>		-	-	-	-
Programme Total	1964/69	£ 1,691,625	£ 176,000	£ 1,515,625	£ 113,755

APPENDIX B (F.Y.P. ROAD PROGRAMME - CONT'D.)

Route and Project Designation	Year	Capital Expenditure F. Y. P.	T. Y. P. Carry- over	F. Y. P. Provision	1966/67 Approved Estimate
C. Major Feeder Roads					
Magu-Bukwimba: <u>Engineered gravel</u>) Magu - Bukwimba)	1967/68	£ 130,000	£ -	£ 130,000	£ 500
Uyole - Itungi Port: <u>to bitumen</u>) <u>standard 77 miles</u> (IDA - No. 6 & 7)	1964/67	1,071,875	9,000	1,062,875	308,072
Kilondota - Bariati: <u>Stabilized</u>) <u>earth, Kilondoto-Bariati, (IDA #8)</u>)		810,000	30,000	780,000	5,000
Dar-es-Salaam - Kibiti: <u>Extension</u>) <u>of bitumen miles 4 to Kibiti</u>) Mile 88 (IDA scheme No. 10))		991,250	28,000	963,250	573,500
Bunda - Nansio: <u>Engineered Gravel</u>) (AID Scheme))	1964/67	630,000	216,000	414,000	268,860
Eastern Trunk Route - Kilwa:) <u>Survey of new alignment stabilized</u>) <u>earth standard.</u> (Subject to AID) Feasibility survey))	1964/65 & 1968/69	167,000	167,000	-	62,510
Bukindo - Katunguru - Karumo:) <u>Survey & Stabilized earth Bukindo-</u>) <u>Buchenzi (32 miles); engineered</u>) <u>gravel Buchenzi - Karuma (49 miles)</u>)	1965/69	130,000	-	130,000	8,875
Katunguru - Sengerema: <u>Survey &</u>) <u>engineered gravel - 14 miles</u>)	1967/69	113,500	-	113,500	4,450
Kasemwa - Buyagu - Busisi: <u>Survey</u>) <u>& stabilized earth on new</u>) <u>alignment</u>)	1968/69	126,225	-	126,225	22,000

APPENDIX B (F.Y.P. ROAD PROGRAMME - CONT'D.)

Route and Project Designation	Year	Capital Expenditure F. Y. P.	T. Y. P. Carry- over	F. Y. P. Provision	1966/67 Approved Estimate
C. Major Feeder Roads (cont'd.)					
Marangu - Usseri: <u>Survey & bitu-</u> <u>minization of Mikumi - Nsolwa</u>)	1968/69	£ 304,750	£ -	£ 304,750	£ 13,000
Mikumi - Ifakara: <u>Survey & bitu-</u> <u>minization of Mikumi - Nsolwa</u>)	1968/69	125,000	-	125,000	-
Songea - Mbamba Bay: <u>Survey &</u> <u>engineered gravel</u> (108 miles))	1964/65 & 1968/69	127,000	-	127,000	-
Dar-es-Salaam - Bagamoyo: <u>Survey</u> <u>and extension of bitumen</u>)	1967/68	210,000	-	210,000	-
Muheza - Amani: <u>Survey & exten-</u> <u>sion of bituminization of 22 miles</u>)	1964/65 & 1968/69	154,000	-	154,000	12,500
<u>Improvements to other major feeder</u> <u>roads (Regional programmes to be</u> <u>submitted)</u>)	1964/68	152,000	52,000	100,000	-
<u>Bituminization of other major</u> <u>feeder roads (Regional programmes</u> <u>to be submitted)</u>)	1964/68	170,000	20,000	150,000	32,700
Kiberege - Lupiro - Malinyi)	-	-	-	-	-
Mbeya (Tunduma) - Sumbawanga: minor improvement works *)	-	-	-	-	25,000
Rural Feeder Roads - Lake Region**))	-	-	-	-	175,000
Programme Total	1964/67	£ 5,412,600	£ 522,000	£ 4,890,600	£1,366,967

* (To be included in Feeder Roads programme when Road R. Laboratory's final report on Transportation has been received)

** (Funds provided to purchase materials for setting up of 40 road camps in association with the proposals to take over certain district roads in Mwanza, Mara and Shinganga Regions)

APPENDIX B (F.Y.P. ROAD PROGRAMME - CONT'D.)

Route and Project Designation	Year	Capital Expenditure F. Y. P.	T. Y. P. Carry- over	F. Y. P. Provision	1966/67 Approved Estimate
D. Feeder Roads in Rural Areas; Miscellaneous Roadworks and Equipment					
Rural Feeder Roads, Provision of culverts & bridging (AID & CAL)	1964/67	£ 1,520,000	£ 585,000	£ 935,000	£ 112,500
Surveys & Investigations (economic feasibility study of a Ruanda - Tanzania RoadLink was carried out under this scheme)	1964/69	180,000	-	180,000	17,500
Tourist Roads - Roads selected by the National Tourist Board	1964/69	54,000	-	54,000	-
Cotton Roads	-	-	-	-	61,295.9
Programme Total	1964/69	£ 2,372,000	£ 667,000	£ 1,705,000	£ 191,295.9
* Grand Total	1964/69	£13,861,995	£2,062,000	£10,800,000	£4,015,267.9

* (All project designations have not been shown, but Programme total is for all projects)

T. Y. P. - Three Year Plan: 1961/62 - 1963/64

F. Y. P. - Five Year Development Plan: 1964 - 1969

APPENDIX C

GROWTH OF TANGANYIKA'S EXPORTS -
QUANTITIES, SELECTED PRINCIPAL PRODUCTS

Year	Sisal '000 Tons	Coffee '000 Tons	Cotton '000 Tons	Ground- nuts '000 Tons	Cashew nuts '000 Tons	Diam- onds '000 carats	Total all Exports £'000,000
1913	21	1.1	2.2				
1919	17						
1920	17						
1921	8	3.8	1.1				
1922	10	4.3	1.5	12.5			1.3
1923	13	4.0	1.5	16.5			1.7
1924	18	5.3	2.5	18.7			2.6
1925	18	6.0	4.5	9.1			2.9
1926	25	6.5	4.9	15.9			3.0
1927	33	6.6	3.9	14.1			3.3
1928	36	10.4	4.9	10.6			3.9
1929	46	8.9	4.9	7.8		23.3	3.7
1930	50	11.5	3.7	17.3		13.3	2.6
1931	56	9.3	2.4	3.1		7.8	1.6
1932	61	11.4	3.2	15.9		1.4	2.2
1933	70	12.7	5.1	19.2		1.4	2.5
1934	73	14.8	5.6	8.0		1.2	2.6
1935	83	18.6	10.0	16.4		1.4	3.4
1936	81	12.1	11.3	22.8		2.7	4.5
1937	91	13.6	11.5	22.3		3.2	5.0

APPENDIX C

GROWTH OF TANGANYIKA'S EXPORTS - QUANTITIES, SELECTED PRINCIPAL PRODUCTS

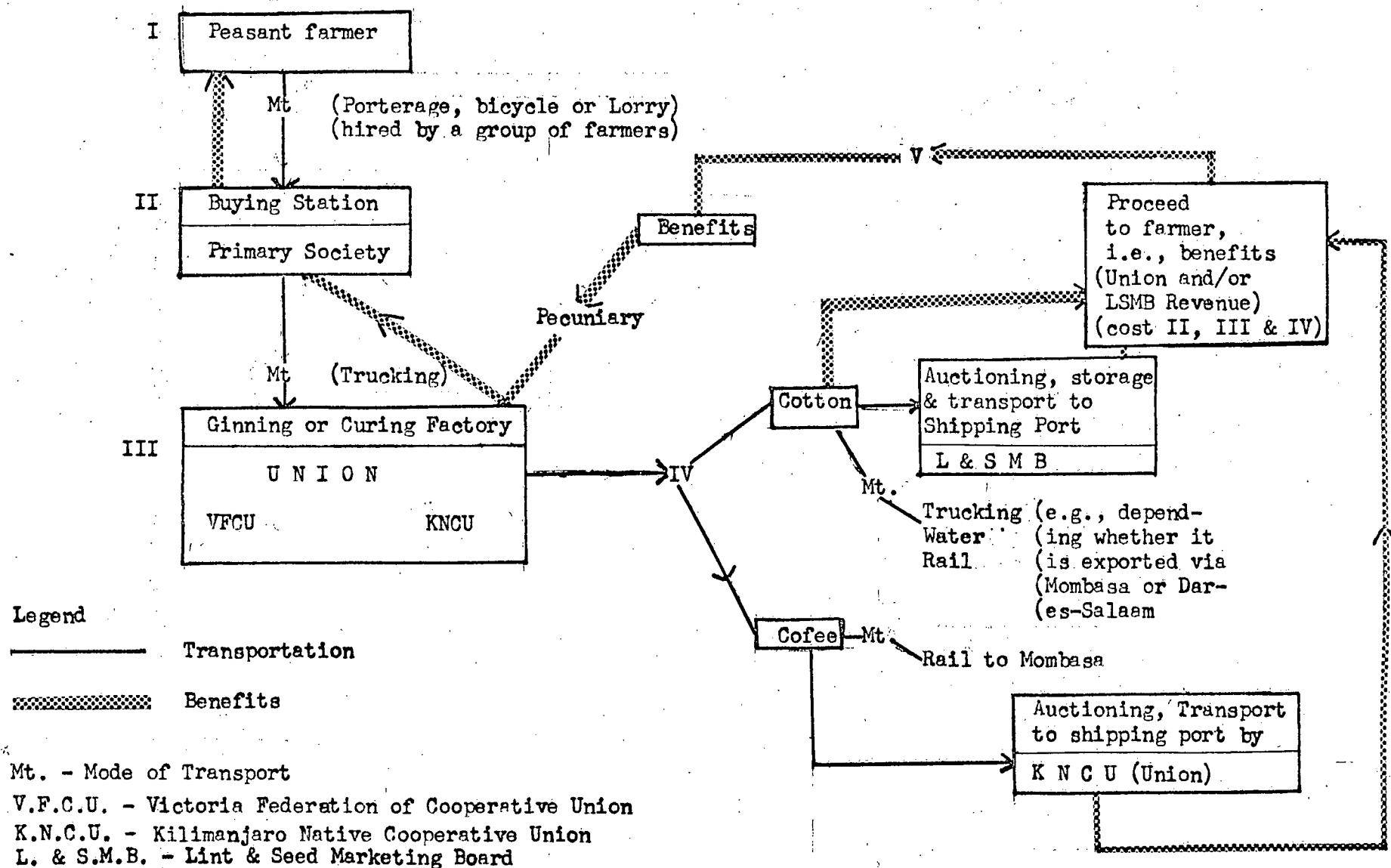
Year	Sisal '000 Tons	Coffee '000 Tons	Cotton '000 Tons	Ground- nuts '000 Tons	Cashew nuts '000 Tons	Diam- onds '000 carats	Total all Exports £'000,000
1938	101	13.7	8.9	3.8		3.6	3.7
1939	93	16.6	11.6	4.5	.9	3.4	4.3
1946	112	10.0	4.0	.5	3.2	119.	
1947	96	13.9	7.0	3.5	1.3	92.	11.1
1948	117	11.3	9.9	3.1	5.6	148.	16.2
1949	113	12.0	10.8	.8	3.6	131.	20.9
1950	120	15.0	7.0	.1	6.5	131.	24.0
1951	142	16.6	8.3	3.5	8.2	9.	40.5
1952	158	18.6	11.1	9.4	11.5	332	47.4
1953	171	15.2	14.8	1.1	11.4	171	35.4
1954	168	19.4	12.1	2.5	16.3	330	37.3
1955	174	18.5	20.4	5.6	18.2	323	37.9
1956	186	21.6	27.9	15.1	16.7	358	47.0
1957	182	18.5	27.2	16.1	33.7	373	41.4
1958	198	22.2	32.1	12.6	31.3	515	44.3
1959	209	19.6	30.7	12.1	33.2	555	47.9

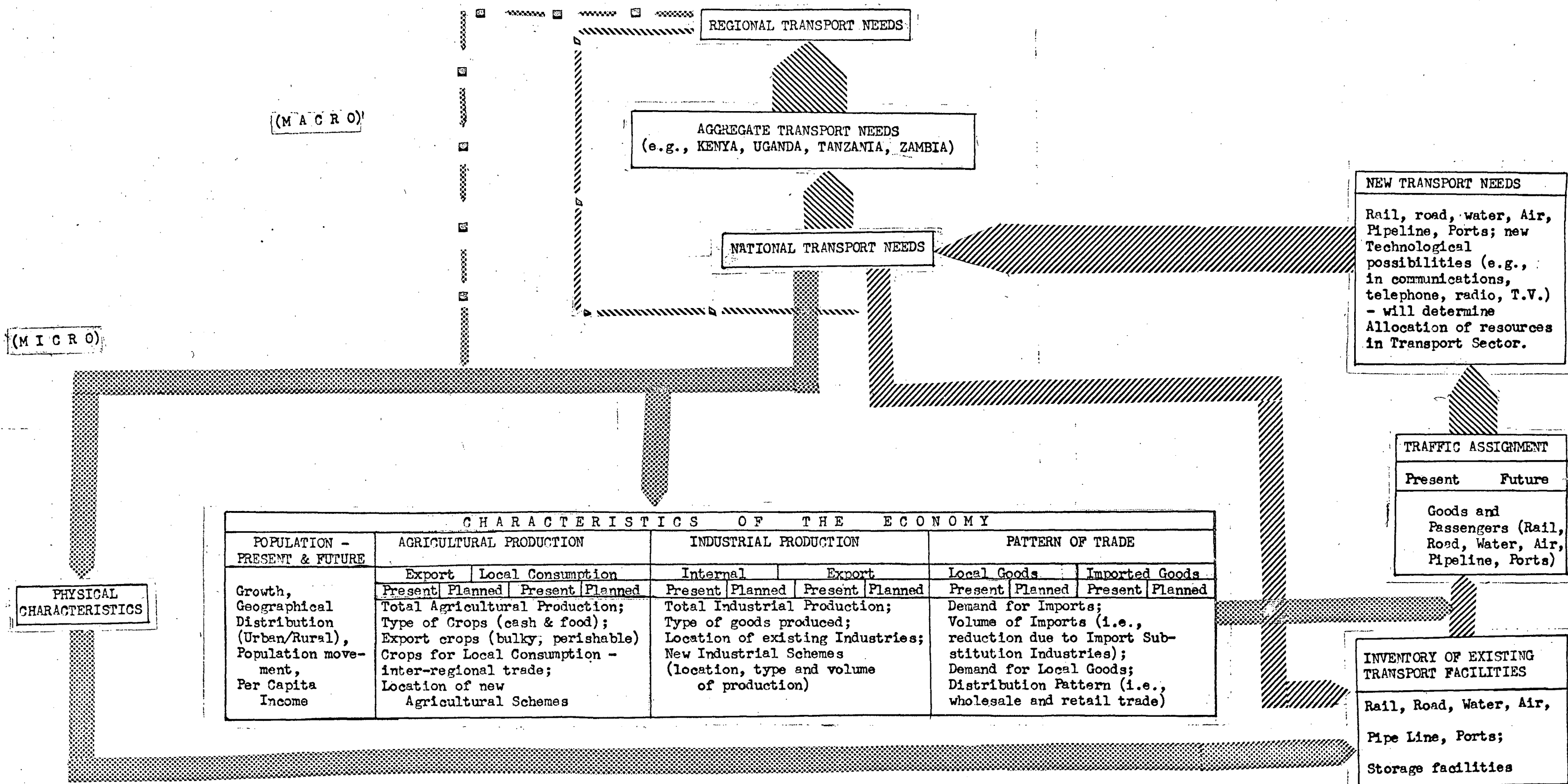
Note: Total Value of Exports includes other minor commodities not shown on Table, e.g., Tea, Skins - Hides & Calf, Fur.

Source: Economic Development of Tanganyika
(Dar-es-Salaam: Government Printer, 1960), pp. 12-13.

APPENDIX D

THE MARKETING OF COFFEE AND COTTON IN TANZANIA AND THE DIFFERENT MODES OF TRANSPORT USED IN MOVING THE CROP FROM THE FARM TO EXPORTING PORT





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