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EAST AFRICAN TRANSPORT PROBLEMS IN RELATION TO THE PROMOTION OF ECONOMIC DEVELOPMENT (Progress Report)

62-68

EAST AFRICAN TRANSPORT PROBLEMS IN RELATION TO THE PROMOTION OF ECONOMIC DEVELOPMENT

Progress Report

FOREWORD

At the third session of the Economic Commission for Africa, a resolution 35(III) was adopted which called for a study of East African transport problems, in particular to promote intra-African trade and industry, and for the submission of a report to the Commission for consideration, if possible, at the fourth session.

While most of the basic research and consultations needed for the accomplishment of this task have been completed, it has proved technically impossible to translate the study in time for the fourth session. The Executive Secretary consequently submits this progress report, which briefly describes the principal findings to date. The material now available also makes it possible to present at this stage, the main recommendations for action, while the motivation will be presented in detail in the full report. The Executive Secretary likewise feels that the transport problems, confronting the East African governments call for a late-1962 meeting dealing primarily with sub-regional problems in East Africa a step which has already proved its usefulness in West Africa, where a transport meeting was convened from 23 to 27 October 1961. If such a meeting were to be convened in East Africa, the present study could in its entirety, serve as a background paper for it. In this case, it would also be possible to use the findings of some reports not yet available.[1/]

As was the case with the West African transport study, the present study for East Africa does not pretend to deal fully with all transport systems in the sub-region or with all the problems confronting them. It merely aims at a discussion of some important questions more or less common to these systems in which the possibility of action can be considered.

While, as emerges from this report, the bulk of the material gathered in the field refers to Kenya, Tanganyika, Uganda and to a lesser extent the Federation of Rhodesia and Nyasaland, more material concerning Ethiopia, Somaliland and Sudan will be incroporated in the full report.

1/ Notably the Bank's report on Uganda and studies on rate problems made by Dr. Hazlewood of Oxford University

INTRODUCTION

1. The fact that improved transport is a prerequisite for any form of economic development need hardly be stressed; it is also obvious that inadequate transport systems have been one of the principal obstacles to rapid economic progress in the countries of both East and West Africa.[1/] This problem has many facets - topographical, political, economic etc. - which will be discussed more fully below. It must however be emphasized that the present study is primarily concerned with transport in relation to economic development. Hence, other aspects of similar importance - political, ethnographic and sociological - are largely omitted. As in the case of the West African sub-region, this constitutes a considerable limitation for East Africa,[2/] where the existing transport systems were often created for political, strategic or administrative reasons rather than from "economic" motives in the strict sense of the term.

2. "Economic development", as understood in this study, comprises naturally both industry and trade, and one of the principal aims in improving and integrating transport systems in East Africa is indeed to provide better services for the internal or domestic markets. The necessity of extending markets across national boundaries - in the case for instance, of new industries - raises the question of concerted action in general, and sub-

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1/ See "Transport Problems in Relation to Economic Development in West Africa", (E/CN.14/63).

2/ For the purposes of this study comprises the East African sub-region, Bechuanaland, Ethiopia, the Federation of Rhodesia and Nyasaland, Kenya, Mozambique, Somaliland, Sudan, Tanganyika and Uganda.

regional transport. These may in most cases, but by no means exclusively, concern roads. As will be shown later, railway expansion both within and across national boundaries is still possible in East Africa, and both coastwise shipping and, in exceptional cases, river transport - not to mention airports and seaports - have their sub-regional as well as their national aspects.

3. A general view of transport in Africa, and particularly in its western and eastern sub-regions, is aptly expressed by one expert as follows: "Almost nowhere in tropical Africa is there a fully integrated transport complex permitting a rational selection of either road, rail or air transport. This deficiency is most conspicuous in regard to domestic markets; the various transport techniques were developed, as far as economic aspects prevailed, with the primary aim of promoting foreign trade." Not a single country in the East-African sub-region, with the possible exception of the Union of South Africa, is adequately provided with transport in its national territory; nor can the situation be deemed satisfactory at the sub-regional level. The transport picture is, as a matter of fact, characterized by missing sub-regional links and devious transport routes. There is however, a substantial difference in some respects between West and East Africa. In the former, transport routes, and particularly railways, have until now largely been confined to each country's national territory - a sign of the political and economic competition between the former colonial powers. In East Africa, the railway lines of the East African Railways and Harbours Administration serve Kenya, Uganda, Tanganyika and, indirectly, Ruanda-Urundi as well, and now to an increasing degree, the Orientale province of the former Belgian Congo. The Mozambique territory accommodates lines from the Federation of Rhodesia and Nyasaland as well as from the Transvaal. Trunk roads likewise play a greater role in sub-regional transport than is the case in West Africa, although discrepancies still exist, especially in road-building and maintenance standards.

4. The major economic problems facing the planner of transport development in East Africa as a means of promoting economic development will be briefly dealt with below. That they are very different from the corresponding problems in an economically developed country goes without saying, as emerges clearly when we come to study the true costs and profit earning capacity of transport undertakings as well as the economic effect of transport improvement in the technical sense. The same holds true for the effect of changes in, for instance, the railway rate base. While one major problem in most developed countries is how to divide the transport market among the various modes of transport, the problem in an under-developed, but economically expanding region may rather be one of selective investments in the transport industry.

5. Studies on transport in Africa usually meet with one conspicuous obstacle, namely, the lack of relevant statistics; and East Africa is no exception. The only mode of transport reasonably, although by no means comprehensively, covered in this respect is the railways; but even here the traditional statistical approach to railway operations has to be modified to take account of special features of African travel and transport. For instance, there exists the conspicuous fact that passenger transport in Africa, although less so perhaps in the eastern than in the western sub-region, is a mixed operation, and the goods which an African traveller is likely to take with him (or rather her) are, in quantity and volume, freight rather than just luggage. A retail dealer may take her entire stock along with her, regardless of whether she travels by road, rail or river transport. Basic statistics are not available for modes of transport other than rail. This applies not only to the considerable quantities moved by primitive means of transport such as porterage, pack animals, canoes and so forth (nor is the migration movement, which is so important in many parts of East Africa, satisfactorily mapped in regard to transport), but also for river and coastwise transport and more important still, road transport, which are all to a large extent unknown quantities. Such as do exist are barely more than rough estimates. Moreover, such meagre transport statistics as exist naturally cover only "licit" traffic; but a substantial illicit traffic also exists, both across the borders and within the national territory, in the latter case in the form of non-licensed traffic. Another subject on

which useful information is often lacking or incomplete is traffic accidents, and in particular their causes.

6. The preparation of a national transport plan naturally calls for a knowledge of what kind of goods will be moving (including estimates of new traffic), in what quantities, and over what routes. Hence, an important requirement will be to prepare traffic flow maps showing both acutal movements of traffic as well as anticipated traffic growth.

BASIC FACTORS DETERMINING TRANSPORT DEVELOPMENT

A. Natural conditions

7. The "natural conditions" being well known, will be largely disregarded in this brief progress report, though some of its aspects will be more fully discussed in the forthcoming study. It may, however, be pointed out in this connexion that natural conditions are unfavourable to the rational development of transport in Africa in general but more so in East Africa. Africa has correctly been described as a "plateau continent" - which raises major problems for practically all transport techniques, especially in railway and road construction and inland navigation. The narrow coastal strip is almost everywhere backed by scarp zones, and the vast interior plateau, which on the average rises to over 3,000 feet, also shows rugged massifs, volcanic as well as non-volcanic, extensive parched depressions of quasi-barren rocks and sands, like the region between Lake Rudolph and the East-African coast, deserts like the Kalahari or wide areas in the Somalis or Sudan. The difficulties arising out of the plateau character of the country are amply illustrated, for instance, by the profile of the Djibouti-Addis Ababa railway.

8. Poorly provided as it is with navigable rivers, West Africa still has the Niger, the Senegal, the Gambia and the Volta, as also prospects of improving navigation on the Bangui, the Benue and the Congo. In East Africa, the situation is far less favourable. The plateau drops to the coastal plain by an escarpment known as the East African "fall line". The major streams of the region, which drain into the Indian Ocean, cross this escarpment, with the notable exception of the Nile, which, apart from the serious impediment of sudd has long stretches of cataracts that make river

transport difficult or impossible. To the west and south, the water drops some 1,200-1,400 feet to Lake Tanganyika and a thousand feet more to Lake Nyasa. Hence, inland water traffic is largely restricted to the great lakes, and above all to Lake Victoria; but the absence of water links has been a serious obstruction to the establishment of a real sub-regional network of water routes.

9. In one respect, however, East Africa is better off than West Africa: its coastline is definitely more hospitable to maritime shipping, and good ports are [illegible] numerous, e.g. Lourenço Marques, Beira, Dar-es-Salaam, Mtwara, Tanga and Mombasa. Inasmuch as these do not serve as ports of call, difficulties arise as regards communications with the hinterlands. The establishment of such communications, which is already under way in many regions, is the subject of one of the main proposals for concerted action in the transport field.

10. Topographical factors are of the utmost importance for the development of an adequate and integrated transport industry in East Africa, while climatological factors exert a similar, but largely negative, influence. High temperatures make for high water consumption and although the replacement of steam by Diesel traction has done much to alleviate the situation, shortage of water still greatly hampers transport in many parts of the sub-region. Moreover, in combination with high humidity, high temperatures also create problems of oxidization. Heavy precipitation makes for high construction and maintenance costs and may render the use of many roads impossible during the rainy season. Seasonal variations in rainfall also cause extreme variations in river water levels.

11. Topography and climate assume unusual importance in East Africa, among other things because of the fact that, apart from Northern Rhodesia, agriculture is still the backbone of the sub-region's economy. Demand for transport thus becomes highly seasonal and makes the ever-intricate problem of traffic peaks unusually hard to handle. The need for an integrated transport system is well illustrated by conditions in former British East Africa, where crop seasons are different in Kenya, Uganda and Tanganyika, as well as in different parts of the last named country. Hence the difficulty in achieving full utilization of rolling stock, particularly so long as the rail system shows gaps, for instance, between the Central line and the Mtwara line in the South and the Tanga line in the North.

12. The influence of such factors as climate and topography can be partly neutralized by technological progress, and this has happened to some extent in East Africa. Other requirements for the development of an efficient transport system are an adequate supply of power and an abundant supply of certain materials, e.g. those for road-building and road maintenance. The East African sub-region is deficient in both these respects. On the whole suitable local fuels are mostly scarce and, although coal has been found in the Rhodesias and in Mozambique, it has not been adequate for either railway or mining operations; the coal fields in southern Tanganyika have not yet been exploited because of the lack of transport facilities, the same being true of Bechuanaland and Northern Rhodesia. In regard to road-building materials, wide areas in East Africa are less - e.g. the "black cotton" regions in Kenya - well endowd than most of West Africa, where laterite is abundant. This may in cases lead to the selection of tarmac as an alternative to gravel, even when traffic volume still does not warrant such a choice. If gravel pits are too wide apart hence necessitating long hauls, road maintenance becomes excessively expensive.

13. The demographic pattern of a region naturally has a strong impact on the transport pattern, as well as on other aspects of economic development. Some parts of the sub-region are in this respect rather unfortunate. This is true not only of sparsely populated countries like the Sudan, Somaliland or Ethiopia, but also of the more densely populated regions like former British East Africa. Uganda, with its compact structure, is in a sense an exception but in Tanganyika, for instance, the situation is different. A stretch of about 100 miles of arid country with few traffic possibilities on the Northern Railway separates the fertile Moshi and Afrusha regions from the equally fertile coastal region. The first 160 miles of the Central Railway handle a fairly satisfactory volume of freight; but from there on as far as the lake region, 600 miles from the coast, practically no freight is received.

B. Political divisions

14. Transport routes and transport development in East Africa still largely reflect political divisions, although not to the same extent as in West Africa, where, for instance, practically every main railway was located within a national territory. In both cases, the Berlin Conference of 1885

set the pattern by which transport systems were created with the sole aim of making intervention and the occupation of a territory effective. Hence, natural geographical frontiers but seldom coincide with political ones in East Africa, and the latter do not consequently delimit natural ethnographic or economic regions. One of the results of this situation is the existence of landlocked countries like Ruanda-Urundi, Uganda, the Federation of Rhodesia and Nyasaland, and Bechuanaland which have no access to the Indian Ocean across their national territory. Transport systems must be established and operated on a sub-regional basis if the economic development of the countries concerned is to progress satisfactorily - the exception being the system of rail, road and inland water traffic under the East African Railways and Harbours Administration, which already serves Kenya, Uganda, Tanganyika, and indirectly Ruanda-Urundi and eastern Congo. But even in the case of the Kenya-Uganda railway, the original purpose was not an economic and i.e., to develop the country, but rather to create a tool for destroying the slave trade. Similar reasons led to the launching of steam vessels on Lake Nyasa in Tanganyika, and the first railways built by the Germans in the main served strategic purposes. After the First World War, railway policy in Kenya was to a certain extent connected with the drive for non-African settlement, when the railway was used as a tool to open up the highlands for non-African agricultural production.

15. In some countries, such as the two Rhodesias, Nyasaland, and the area served by the East African Railways and Harbours Administration, the question of expatriates has raised serious problems, not merely connected with questions of land and tenure and agricultural production but also affecting the finances and operation of the railways as well. Particularly in the Rhodesias, many jobs were restricted to non-Africans, and a salary and pension level was introduced which was not always warranted on purely economic grounds. The result was, among other things, an undue rise in the cost of operations. The progressing Africanization of the transport industries will bring a change in this respect; but even when the expatriates are only gradually replaced, this procedure raises serious problems in regard to the training of replacement staff.

C. Economic setting

16. While the economic structure of the countries belonging to the East-African sub-region are perhaps less similar than those of the West-African countries as regards productive activities, the general setting is nevertheless that of a primitive subsistence economy centred on the village, production being mainly designed for home consumption and located close to consuming centres. Both East and West Africa exist largely on subsistence agriculture and the sale of cash crops. Nevertheless, non-African agriculture is important in some countries like Kenya, Tanganyika and Southern Rhodesia, especially for certain crops such as sisal, tea and coffee (in Kenya). Movement of goods, except over very short distances, is mainly related to export crops and mining products, for which the transport systems of the countries were primarily designed, although the movement of consumer goods in import trade is steadily increasing. However, transport in East Africa is still strongly characterized by the movement of heavy, low grade commodities in bulk, for which the railways and, where possible, inland water transport are particularly well-suited.

17. Transport demand in East Africa is basically for two distinct types of service: one for the export trade, the other for the import trade and the domestic markets. Strictly speaking, the two last mentioned components are not identical but overlap to some extent as regards consumer goods.

18. The general theory of demand services must, however, in East - as in West Africa - to some extent be modified. Firstly, the traditional distinction between passenger and freight transport as applied, for instance, in Europe or in the United States needs some qualifications as the two are often combined in one operation. Secondly, transport and trade are likewise often combined ventures, and the demand is not necessarily for homogeneous ton-miles. Thirdly, there exists also a demand for certain types of primitive transport, which may be due, not to the lack of modern facilities, but rather to the fact that, under the circumstances, the primitive mode of transport chosen, though technically inefficient, is not economically so.

19. Scarcity of capital and the inadequacy of transport facilities affect the market situation in East Africa in many ways. The middlemen (or women) usually possess only scant capital and are consequently able to handle only small quantities of merchandise. Hence, the breaking of bulk is of great importance, and a transport technique adapted to serve this kind of market must meet a demand for the movement of heterogeneous freight in small quantities. Communications being usually poor (and "telecommunications" scarce and rather a luxury), the retail trader must seek out his prospective customers, and in many cases take his goods to them in the bush. From this arises the user's demand for a combination of passenger-miles and ton-miles.

20. While of considerable importance to rail traffic, the demand pattern outlined above results in a modification of the general transport pattern, i.e., the concentration of bulk traffic on modes of transport particularly adapted to it. "Mixed traffic" is predominantly using the roads and is the basis of the growing road transport industry. A further incentive to the use of road transport is the fact, that it allows movements of passengers and goods to be combined with other commercial activities. Traders are inclined to offer a kind of "ancillary service" by buying or selling goods at the same time as they are transporting other commodities; in addition, some firms find it convenient to engage in transport on own account. The latter system appeals mostly to firms with a wide distribution system; with a fleet of vehicles they can stock the retail shops (often in the bush) and provide sufficient transport capacity at peak periods. The principal difficulty which transport on own account is likely to encounter is that of finding return loads, which may induce the company in question to engage in trading outside its main line of business; some firms are known to have bought certain commodities merely in order to reduce their overall transport costs by securing return loads.

The transport industries in East Africa

21. No full treatment of this topic is possible here; but, before some general remarks are ventured, it may be pointed out that the advent of modern transport techniques in East Africa has by no means eliminated what could be called primitive transport while it may be true that, as one expert has put it, "it was by the elimination of long-distance porterage that modern systems of transport have made one of their most impressive contribution to progress in Africa," nevertheless human porterage may under certain conditions even be "economical" and, though commonly regarded as the most uneconomical and wasteful form of transport, it is still widely used. The main purely economic objection (i.e., leaving aside social aspects) is that the wide spread use of porterage removes great numbers, particularly of women, from agricultural production for varying periods. But if porterage occurs as "transport on own account," it is another matter. The first link in the distribution chain for a commodity is often its transport as head-load from the small producer to the nearest market, whence transport by truck may constitute the second link in the chain. Indeed, large quantities of commercial crops, such as cocoa, coffee or groundnuts, start their journey to the markets by human porterage. The main use of porterage occurs, however, in the retail trade. The petty retailers who sell their goods in minute quantities often walk distances of up to 30 km. with a head-load weighing up to 60 kg. Even if rail or road transport were available, which of course is often the case and the retailer could afford it, he might prefer to travel on foot, with the possible advantage that he would keep all his modest earnings for himself. Occasionally, an additional advantage may be that, if the traffic crosses national borders, head-loads are frequently not subject to Customs inspection. It may indeed be easy to confuse the technical and economic aspects of the question, and marketing arrangements based on such primitive kinds of transport may seem wasteful and inefficient. But this is not the whole truth in countries where

capital is scarce and labour plentiful. As one expert, referring to retail trade in West Africa puts it, "so far from the system being wasteful, it is highly economic in substituting superabundant for scarce resources; within the limits of available technical skill nothing is wasted in Africa." However, this is so mainly because of the conspicuous lack of feeder roads in all African territories, and one of the main tasks of transport policy will be to remove this obstacle to economic development.

22. The railways were the first modern mode of transport to be introduced into East Africa, coming indeed as the first alternative to human porterage or to pack animals. But here, as elsewhere on the continent, it apparently was accepted that "the usefulness of these (East African) territories, and their main economic function, was the supply of primary products to the industrial markets of the rest of the world." Hence, railways as of today exist mostly in the form of links between the interior and the coast rather than between the various territories. In other words, the lack of sub-regional railway links in the sub-region is conspicuous. There is, however, an important exception of sorts, represented by the system under the administration of the East African Railways and Harbours Administration. This system, which operates in Kenya, Uganda, Tanganyika, and indirectly serves Ruanda-Urundi and the eastern provinces of the former Belgian Congo as well, represents the most integrated railway system in either West or East Africa. It is not however yet complete. The most important aspect here is the linking of various parts of the system, e.g. the Central Tanganyika line with the Tanga line. This is of paramount importance because only thus can a rational utilization of the rolling stock be achieved by moving it to different parts of the system in order to answer the peak demand which originates in the different crop seasons of Kenya, Uganda and Tanganyika. This linking has taken place by the construction of the Mnyusi-Ruvu link. However, possible railway extensions of the system in question are by no means exhausted by this link. The staple

products of the three countries are agricultural and mining products, and an increased demand for heavy transport in bulk is thus to be expected. As was stated in the Bank's report for Tanganyika, "the bulk of the main cash crops rely on rail facilities to reach the ports and the flow of imports to the richer areas in the north and the north-west of the territory is heavily dependent on rail traffic. Inter-territorial traffic with Kenya and Uganda is also dependent largely on rail links supplemented by lake shipping. Part of the agricultural and mining areas that are developed in the future will probably be most economically served by an expansion of the rail network." The link between Kilosa and Mikumi being completed, the remaining problem is how far to build the railway over Mikumi to open up the Kilombero Valley for agricultural production, in the first place of sugar. Here the respective merits of rail and road transport have to be weighed against each other. Although all caution has to be observed, it looks at first glance as if the most rational way to open up the Kilimbero Valley would be by rail, even if, as is to be expected, the operation showed some loss to start with. The question needing particular study would be the extension of the line as far as Mbeya, which would bring it in contact with the transport region north of Lake Nyasa. The railway line from the port of Mtwara to Nachinwea (with a branch line to Masasi) was originally built, as was the port, to establish a transport network for the groundnut scheme. When this initially failed, the railway line and the port could not be used to capacity, and the their operation constituted a heavy burden on the budget of Tanganyika; and consequently, the question of whether to keep the line in operation was raised. Apart from the fact that some quantitative improvement as regards the groundnut traffic volume has taken place recently, future agricultural development may turn the Mtwara railway into a much better financial proposition than it is at present. In any case its closing does not yet seem warranted, at least not without a thorough investigation.

23. Railway extension in former British East Africa must not necessarily be limited to Tanganyika alone. In Kenya, three railway extensions are under consideration, namely, one in the Mount Kenya region, one branch-line from Nanyuki to Omeru and another from Segan to Embu. Further, a line from Kedowa to Kisili has been considered. Of more importance, however, is the extension of the Uganda line over the railhead at Soroti to Lira; this is the first instalment of the project to establish a rail route through Northern Uganda to Gulu and ultimately to the Nile, at Pakwach and Mutir Pier.

24. A development of rail transport in the Federation of Rhodesia and Nyasaland in terms of railway extension is primarily a matter of sub-regional transport, although until 1957, rail capacity in the Federation was insufficient to cope effectively with traffic demand, especially in regard to the needs of the mining industry.

25. Railway extensions still can be considered, for instance, in the Sudan, as a sub-regional project linking the Sudanese system with that of Ethiopia. Although the era of railway expansion is by no means over in East Africa, railway capacity can also be increased without physical expansion of track and installations, by means of organizational improvements.

26. However great these possibilities may still be, it is likely that transport development will to a large extent take place in the road sector. It is, as one expert has stated the case, "probable that for the African population the advent of motor transport has created a greater revolution than that of the railways" and this revolution is still in progress. This trend has relevance for main arteries as well as for secondary and feeder roads, and, as a matter of fact, to judge the part of each in development plans is certainly one of the most urgent but also most difficult problems confronting the planners, and the solutions have been very different in many cases. The question of standards to be adopted also arises, particularly at the sub-regional level.

27. Road transport is characterized by its mobility and flexibility, the use of small transport units, its adaptability to the individual user's needs, the measurement of speed in terms of total time consumed, the frequency of services and, when a certain stage of development has been reached, the scope for advertisement. In view of the scarcity of rail transport in wide areas of the sub-region and the great limitations on inland navigation, road transport has logically developed into the foremost medium of economic integration and domestic trade expansion among the various modes of transport. The widening and even the very creation of domestic markets has been largely the achievement of road transport, though its contribution is not yet fully measurable statistically. Road transport also performs an important function as "feeder" to the railways, one outstanding example being the road network feeding Northern Rhodesia's single railway, and as a link between different railway systems, e.g., road between Arusha and the Athi River, or between rail and river or lake routes, e.g., the road between Itigi and Lake Nyasa.

28. From a sub-regional standpoint roads are further discussed below. In regard to trunk roads serving more or less predominantly the domestic area, large portions of the sub-region, e.g., Uganda, Kenya and Southern Rhodesia, are well provided for; here the main problem lies not in the field of immediate further extensions and new construction but in up-grading existing roads and in improved utilization, the latter in many cases to be achieved by construction of more feeder roads. In other parts of the sub-region, road development has not yet reached a level commensurate with the needs of general economic development, as in the Sudan, Somaliland or Bechuanaland.

29. In regard to feeder roads, most governments in the sub-region have adopted a policy of building up the main road system to an all-weather standard before heavily engaging in feeder-road improvement. The Bank seems to be right in stating, in its report on Tanganyika — a country remarkable for its realistic assessment of transport

problems in general and road questions in particular - that "this was the right policy to start with; a feeder road could serve little purpose 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. With the growth and improvement of the main road network, the Government (of Tanganyika) considers that the time has arrived at which the rate of main road improvements should be gradually reduced and expenditure on the improvement and expansion of feeder roads proportionally increased." The case of main versus feeder roads competing for scarce investment money may perhaps need some more qualification than the above statement offers, feeder roads as a rule serving a much more diversified traffic than main roads, even if these are not just "motor roads." But it is correct in its broad outline. Given the economic structure of most of the countries in the sub-region, which makes further development of agricultural output one of the main problems of economic development, the expansion of feeder roads should naturally be considered in conjunction with this broader problem. Another aspect to be considered is construction or improvement of feeder roads versus establishment of storage facilities; in other words, it is a question of whether to invest in road improvement or in reducing transport requirements. In any case, in the area of feeder roads, various types of studies may prove useful, studies which eventually could be financed internationally, for instance as Technical Assistance or Special Fund projects. One such study would be to assess the effect of a feeder road system in a certain region. In regard to the work to be performed, to quote one of the foremost experts in the field, data on both the short-term and the long-term effects in terms of production, standards of living population, transport costs, health etc., will be evaluated for different types of economy; this will give the amount and type of return for different roads in varying conditions. With this information available the authorities

responsible for road development will be in a far better position to judge what is the correct standard of road, or type of system, for obtaining the highest return in terms of economic and social development."

Transport Policies

30. The importance of transport in actual development plans in the sub-region is considerable and is likely to remain so for an appreciable time to come. The financing of transport development and improvement has, as pointed out above, necessarily to be weighed against alternative uses of scarce resources; the post-war period has indeed taught that expenditure on infrastructure has to be carefully geared to existing or latent possibilities of increasing production. It is therefore, as has been stated, "very desirable that lines of communication should be seen in relation to the whole area, and not simply as a series of haphazard links between places which may exist only because they follow the traditional or shortest route. If, for instance, there is an area containing several villages or small towns, the best and most economical method of linking them to a main highway is most likely to drive the major road through, avoiding all the villages and towns, but connecting them to it with branch roads. In this way the main highway can be directly related to the needs of adjacent areas." If the area concerned is particularly wide, as is the case with a sub-region, the necessity of planning is especially obvious. But all economic planning, be it on a greater or smaller scale, requires some kind of preliminary assessment, in other words, pre-investment studies or surveys. There will always be competition for national as well as for international funds, and particular in order to obtain the latter, it is imperative to put forward carefully-reasoned cases supporting the requests. Examples of such studies made in East Africa by the Road Research Laboratory of Harmondsworth, England, illustrate well some of the methods useful in this field. Transport needs should not be assessed without first making an inventory of existing facilities, together with an assessment of the quality of facilities and services in the transport industry. "Such a physical survey needs to be supplemented

by maps showing traffic flows for modes of transport, particularly for East Africa in relation to ports. Especially for road and water transport there exists nothing approaching an accurate inventory."

31. In addition to special pre-investment surveys and studies related to particular questions in the transport field, there seems to be some need for a general study of the relative economics of the principal means of transport, rail, road, water (including both river and lake transport and coastwise shipping), with special reference to Africa. Such a study would have particular reference to a policy of transport coordination, as further discussed below. It is indeed felt that nothing comprehensive has thus far been achieved as regards this question, and the various studies made or under preparation have hardly taken in the whole problem. There is, however, a substantial collection of material on various aspects, for instance, on competition between various means of transport and on rate policies and so forth in both East and West Africa, which can be used for the new project.

32. One aspect of transport development which is well worth discussing concerns improvements in the institutional pattern, a question which logically arises in conjunction with the constitutional changes which are taking or are about to take place in many countries of the sub-region. The recommendable changes in the institutional sector aim to secure better [illegible] all simpler formulation of transport policy to achieve greater efficiency and economy. The pattern to adopt seems in a general sense to be that implemented in Tanganyika, where the transport policy on a national level is vested in a Ministry of Communications, Power and Works. For Uganda, the Bank mission suggested transport, communications and works, which seems an even better alternative (for the present, the responsibility in question is divided between three Ministries). In the Federation of Rhodesia and Nyasaland, there is a Ministry of Transport dealing, among other things, with railways, roads (including regulation), civil aviation,

shipping and harbours, although public works and communications are exempted. In Kenya, on the other hand, the Road Authority administers certain funds while others, notably government grants for capital expenditure for the construction or major improvement of roads, are included in the government development programmes. As main agencies the Road Authority uses the Public Works Department and various local authorities.

33. Since 1948 the railways and ports of the three territories of former British East Africa have been operated as one system by the East African Railways and Harbours Administration. This arrangement has on the whole proved beneficial to the three countries, although some criticism, claiming too little decentralization and too strong a concentration on Nairobi as well as over-protection of the railways in Kenya, has been voiced from time to time, The forthcoming independence of the three countries will undoubtedly raise questions of organizational adjustment, which will most probably result in the delegation of more power to the national branches of the Railways and Harbours Administration, even if it remains in its broad outlines. A further question which may well be raised is whether or not a separate Ports Authority should be established. The experience of Nigeria points in this direction, and there is rather a widespread feeling that the present arrangement in Ghana, where there is railways and ports authority, is too unwieldy.

Co-ordination of transport

34. The function of transport has been described as the bridging of the time and space gap which separates producer and consumer; this "gap" is then understood to mean not just a physical distance measured in miles or minutes, but an economic distance measured in terms of cost. Transport improvement is thus more than a mere technical change, such as replacing porterage of canoes by railway transport or motorized river craft. The aim is not primarily to make physical changes or to increase transport facilities, but to reduce transport costs (the quality of service being here regarded as a cost element).

35. One of the tools of transport policy by which improvement is achieved is "co-ordination". Although it is a term frequently used in transport economics and even more so in discussions of transport policies, it is still far from being a clear-out concept, and its application often causes both controversy and confusion. Here, as in the study on transport in West Africa, it will be assumed that transport co-ordination should be based on "economic cost," so that the aim of a co-ordination policy might be described as the provision of transport services of the best obtainable quality at the lowest possible cost.

36. When considering transport co-ordination in East Africa, it is however, important to realize that the very concept as applied to underdeveloped countries is logically broader than is otherwise the case and that, in consequence, experience gained in different settings may be of very restricted value. A salient characteristic is that an excessive supply of transport facilities seldom exists in any particular branch of the transport services or in general. Yet this of course does not mean that transport competition does not exist in underdeveloped areas. On the contrary, competition is, or has been, very keen in many parts of East Africa, although probably on the whole less so than in West Africa, even though in both areas it has been paralleled by an overall deficiency in transport facilities and services for which a potential demand exists.

37. It is therefore necessary to consider not only the best use of existing facilities - and in economically developed countries they are, as a result of a long evolution, often set in a rather rigid pattern - but also, and above all, to plan for an expanding transport system. The overhead and track costs lose none of their importance, but the investment policy to be adopted assumes a somewhat different aspect. In an economically developed country, existing traffic conditions are more or less well known and, hence, future trends can be assessed with a fair degree of accuracy. The principal issue here is the return on investment; the benefits will mostly occur in the form of reduced travel

time and lower operating costs for already existing traffic. Generation of new traffic may occur, but this will always be of comparatively minor importance. In under-developed countries, on the other hand, the main consideration producing investment in transport, especially perhaps in the case of roads, may be social and administrative rather than economic. In under-developed countries road-building generally has to precede other forms of economic development, such as industrialization. There may also be cases where the principal aim of creating better transport facilities has less to do with the common aim of establishing closer links between sources of raw material and markets than with aspects such as better health services, control of insect pests, and the like. In an economic sense, however, the justification for road-building or improvement may lie in the new traffic expected from the provision of new or better facilities.

38. Transport co-ordination in under-developed countries will be largely concerned with selective investments and the choice of standards for adoption.

39. Although the main stress will undoubtedly be on expansion of the existing transport system, which cannot yet be deemed entirely adequate in any East African country, any co-ordination policy must also consider whether maximum use is being made of existing facilities before they are added to them and, if not, what measures can be taken to achieve this aim. Under this heading also comes competition, which eventually may render the work of one or more modes of transport less economic than before or which may even make it uneconomic. The need for surveys bringing out necessary economic data before any policy of co-ordination can be framed has been pointed out above. It must also be remembered that, "new traffic grows only if enterprise is first given an opportunity to provide the service required. In all but the exceptional circumstances new business, the demand, does not ante-date the provision of the service, the supply."

40. The importance of pre-investment studies is clearly evident when alternatives in regard to investments oppose the claims of transport

to those of other sectors of the economy, or the claims of one transport technique to those of another. But even if the question of infrastructure has been solved or the setting in its main features exists as a "legacy from the past", the drawing of an even balance between road and rail is an extremely delicate and difficult operation. The basis of competition between the two techniques always remains rather fluid owing to changes in technology as well as to various measures of rationalization, affecting both rail and road transport, as it changes their cost of operation, often considerably. One important tool of co-ordination at the disposal of public authorities is restrictive licensing, another, often used by the railways with public authorization, is tariff policy measures. Before such measures are applied in order to achieve co-ordination of transport, thorough studies will be necessary to assess, for instance, the changing of a rate base or the compression of the range between maximum and minimum rates or the impact on industrial location, commodity prices and the export-import trade. The adoption of common principles of co-ordination on a sub-regional basis is naturally to be desired in theory and may be easier to achieve in countries where the actual situation is not a product of a long evolution, as is the case particularly in Europe. The need for basic studies of transport co-ordination seems to be rather obvious in East Africa and may well be a topic for discussion at a forthcoming transport conference in the sub-region.

41. While transport co-ordination in East Africa will, as pointed out above, deal largely with selective investments, the case of competition between various means of transport also arises. Where both rail and road transport exist there is also some competition in every East African country; furthermore, competition is not restricted merely to road and rail. Rail transport has in some areas been in competition with the lake services and, again, dhows have entered into competition with steamers on the lakes and motorized dhows compete with regular cargo liners in coastwise traffic. Hence, transport co-ordination has to consider the whole transport industry, not only just road and rail.

Sub-regional transport

42. While transport policies have, a priori, a national aspect, they also have, like transport co-ordination an increasingly sub-regional one. A first step was taken to solve these problems with the convening of the West African Transport Conference in Monrovia (23-27 October 1961). This Conference was in principle confined to the discussion of a sub-regional road network and to rules and regulations for traffic in such a network. Agreement was reached on the roads to be included in the network while the operational side of the question was deferred for further study. Resolutions were also passed, calling for the convening of a seminar on various technical matters. Stress was laid on the importance of creating permanent bodies at the sub-regional level to deal with transport, and it was decided to make the Transport Conference a permanent body. The need for discussing other transport questions and modes of transport, i.e. roads and road traffic and, in particular, river transport and commercial air transport, was likewise pointed out.

43. Particularly in the light of this experience, it seems advisable to convene a transport conference similar to that, mentioned in the introduction, in the East African sub-region. Since it was resolved at the Commission's third session to establish this sub-region, as indicated in document E/CN.14/94, political developments in the sub-region seem to present an opportunity of widening the participation of countries to include Ruanda-Urundi, Madagascar and Zanzibar.

44. It also seems advisable to widen the scope of the proposed conference to cover not only sub-regional roads and traffic on them, but also railways and transport co-ordination, in particular the relations between road and rail. Another item to be included would be inland water traffic and coastwise shipping, as well as commercial air transport and any subject connected with these modes of transport.

45. In regard to sub-regional road transport, problems to be discussed would comprise the very road network contemplated, ie. the roads of

sub-regional importance to be included. Further, the standards to be adopted as regards construction and maintenance, gaps to be closed and up-gradings to be made, should be taken up. Concerning traffic on such a road network, the discussions would focus on rules and regulations to be adopted, international drivers' licences, road signs and signals, safety regulations, permissible axle-loads, frontier formalities and so forth.

46. While sub-regional traffic, especially in regard to roads, would be a main topic for the first conference, it should be borne in mind that some international action may also be possible in the field of secondary and feeder roads, in particular with regard to pre-investment studies which could eventually be financed by international bodies. Hence, this question should also be on the agenda when road policies are considered in the sub-region.

47. Co-ordination of transport, in other words the endeavour to organize and eventually regulate the relations between the various means of transport in order to achieve an integrated transport system, is a broad subject of immediate practical interest to governments, which if to be treated fully must be treated separately. It has also a sub-regional aspect, as it would be of definite benefit if the national policies in this area could be co-ordinated; there is a greater possibility of achieving this in Africa in general and in East Africa in particular, than in Europe, as it is a question of an expanding transport system under relatively similar conditions where traditional settings and policies are to some extent still lacking.

48. One pre-requisite for success when the problem is to conceive a workable co-ordination policy is a thorough study of the costs of all modes of transport concerned. Such studies might be arranged through international assistance.

49. There is wide scope for sub-regional action in addition to the above-mentioned items, for example on the urgent problem of improving traffic safety, particularly in cities. Hence, a conference on traffic safety, which of course also includes the matter of enforcement may be deemed desirable.

50. Although not basically a sub-regional question, the question of training also enters the picture. This problem is rendered especially acute in East Africa, as well as elsewhere, by the exodus of expatriates, which is expected to be very heavy in the immediate future. But the problem also has a long-term aspect as the question is not only of speedy Africanization of the technical services but also of the provision of staff for, it is to be hoped, rapidly expanding services. Further, there can be but little doubt that the road transport industry offers especially good opportunities for small African operators, whose lack of capital usually precludes them from entering the big road haulage business. To enter successfully into the road haulage business, even on a modest scale, for greater knowledge than now readily available will be necessary, not merely in the technical but also in the commercial field. The need for training schools and institutes is thus obvious. As resources are limited, sub-regional action seems indicated, in the form of training institutes which could be established in suitable countries and which would be open to trainees from the whole sub-region. Thus to name one feasible example, a "transport school" can be envisaged, for instance in Dar-es-Salaam, which would be open to Africans from the sub-region, and eventually to students from other English-speaking countries as well. Such a school is quite conceivable as a Special Fund project.

51. While the questions mentioned above have basically matters of sub-regional interest, it has also been pointed out that international assistance may also be extended in regard to problems which are rather of a national kind, e.g., feeder roads. Questions which concern more than one sub-region may enter the picture. This of course is almost invariably the case with air transport. Questions of ports and harbours are also of special importance in a sub-region containing many land-locked countries. Hence, it may be deemed desirable to convene a port and shipping seminar for African countries at some suitable date. This has already taken place in 1959 in Middle Eastern countries, and a seminar, also open to Africa countries, has been

considered for May - June 1962. The drawback here is that the latter is to be held in Copenhagen, Denmark. For a seminar concerning African countries, a site in Africa seems advisable.

52. The impact of improved transport in a general sense shall not in this connexion be discussed in any detail. As an ECAFE study briefly puts it, "transport development contributes to economic development in three main ways: enlarging the market and thereby further stimulating economic specialization; helping exploitation of additional resources by making them accessible; and leading to the establishment or expansion of related industries." It certainly can be said that the transport industries, particularly in the last-mentioned respect, have been instrumental in creating new work opportunities. The road haulage industry has been conspicuous in this respect, giving impetus to ancillary industries for the building of bodies for cars, tyre refitting, garages, service stations, rest-houses and so forth. On the other hand, the railways have been and still are big employers, in the matter not only of construction but of railway workshops, which are the principal industrial undertakings in Nairobi and Dar-es-Salaam for example, and have occasionally, for instance during the war, also engaged in work other than railway materials production. Some of these activities would be an economic proposition only on a sub-regional basis. Thus the establishment of a bicycle factory, considered in Rhodesia, was dropped because of lacking national demand. The widespread use of bicycles in some other part of the sub-region, e.g., Uganda, would eventually be enough to constitute a sub-regional market.

53. Finally, it may however be emphasized that to exert its full effect, improved transport has to be combined with a corresponding development of industry and trade; they have necessarily to reach a certain level before expenditure on infrastructure is justified, and to judge when such a stage is reached constitutes one of the difficulties of development policies.

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