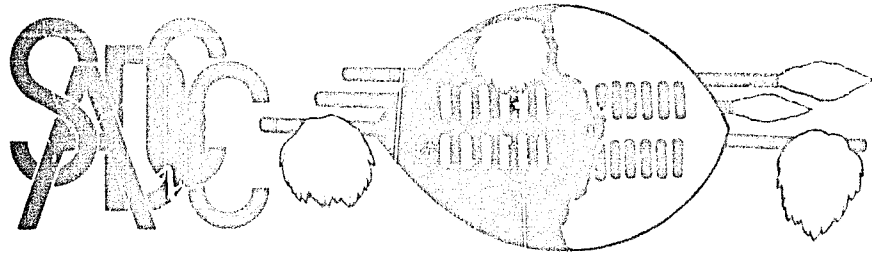
TRANSPORT AND COMMUNICATIONS

SOUTHERN AFRICAN
DEVELOPMENT COORDINATION
CONFERENCE



Mbabane, Kingdom of Swaziland
31st January – 1st February 1985

PREFACE

The Southern Africa Transport and Communications Commission (SATCC) was established shortly after the historic Summit Meeting in Lusaka 1 April 1980, where the Member States of SADCC committed themselves to pursue policies aimed at the economic liberation and integrated development of the national economies.

A reliable and efficient transport and communications system is a prerequisite for an intensified and concerted development of the region. Due to this the regional co-operation within transport and communications was attended to immediately after the Lusaka Summit and the development of the sector has been given the highest priority by the Member States. The regional co-operation within SADCC has also been well received by the international community and already at the SADCC Maputo Conference in November 1980 substantial pledges were made for financing of transport and communications projects. These pledges were confirmed at the following SADCC Conference in Blantyre, November 1981. New pledges were made at the SADCC Maseru Conference in January 1983 and at the SADCC Lusaka Conference in February 1984.

This report has been prepared for the Mbabane Conference. It outlines the present main problems within transport and communications and identifies remedial measures to overcome such problems. It gives an up-to-date picture of all projects included in the regional programme inclusive of financial status.

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CHAPTER 1 INTRODUCTION

SATCC is now for the fifth time presenting a comprehensive report to the international community. In addition to capital investment projects, the report emphasizes in particular two other groups of measures, namely operational co-ordination and training.

The report is structured in accordance with the methodological approach adopted by SATCC. This is basically a pragmatic approach. From the very beginning in 1980 the work has been based on a problem identification, where shortcomings and bottlenecks are located, followed by concrete recommendations on measures designed to overcome and solve the problems by removing the most serious bottlenecks first.

On the other hand the approach is constantly being reviewed and improved based on the increase of knowledge within the organization.

In accordance with this approach Chapter 1, Introduction, is followed by a chapter on transport and communication aims and policies. In Chapter 3 summary of the present main problems is presented.

Chapters 4, 5 and 6 outline the regional plan and the implementation programme. Chapter 4 covers surface transport, namely ports and water transport, railways and rail transport and roads and road transport, and provides a general overview of the present situation. The forecasts indicate the magnitude of future transport flows in the region. Chapter 5 covers civil aviation and Chapter 6 telecommunications.

There is a common structure for the three chapters. Initially the regional plan is described. Then follows a description of the regional implementation programme which has been divided into three categories of measures: operational co-ordination, training and capital investment projects.

In Chapter 4 on surface transport, the capital investment projects have been grouped into five port transport systems and a sixth group of intra-regional projects. A port transport system includes a regional port and the railways and roads converging on it, while the intra-regional projects are such projects which are not included in the port transport systems.

Chapter 7, Financing of Implementation, describes the costs and financial status of projects related to the regional programme. The progress as to implementation is summarized.

Annex 1 to the report gives a summary of costs, financing and implementation of all projects included in the various programme categories. A review of the Regional Programme of Projects is attached as Annex 2. This Annex includes project briefs (one page descriptions) for all projects with status as per August 1984.

CHAPTER 2. SUMMARY OF TRANSPORT AND COMMUNICATION AIMS AND POLICIES.

2.1. General

In "Southern Africa : Toward Economic Liberation, A Declaration by the Governments of Independent States of Southern Africa made at Lusaka on the 1st April 1980" it is stated that the Southern Africa Transport and Communications Commission would be created to coordinate the use of existing systems and the planning and financing of additional regional facilities.

In the Convention of the Southern Africa Transport and Communications Commission (SATCC) the objectives are set out as follows:

- to reduce economic dependency, particularly, but not only, on the Republic of South Africa;
- to forge links to create genuine and equitable regional integration;
- to mobilize resources to promote the implementation of national, interstate and regional policies;
- to make concerted actions to secure international co-operation within the framework of Member States strategy for economic liberation;
- to promote rational and integrated utilization of the various systems existing in the region;
- to promote concrete development programmes and projects and the modernization of existing systems;
- to seek participation of the independent states in the region.

The policies of action approved by the Committee of Ministers in January 1981 include specific recommendations concerning better use of existing systems. It is stated that : "Transport and Communications bodies of the Member States shall establish among themselves specific operational agreements at bilateral or multilateral levels, with a view to achieving the objectives defined in the Lusaka Declaration for the optimum use of existing systems and to reducing dependence, particularly but not only, on the Republic of South Africa".

In the SATCC Progress Report to the Summit in Harare in July 1981 this was repeated in accordance with the aim of coordinating the use of existing systems.

It was also stated that among the activities of the Commission emphasis should be given to operational matters to obtain optimum utilization of the existing transport and communication facilities.

Thus in addition to the capital investment projects operational co-ordination and training must be considered and given priority when outlining future activities.

Consequently the SATCC Committee of Ministers has agreed that in order to achieve better coordination working groups of experts should be established in all transport and communication sectors. These groups prepare proposals for the implementation of various sector policies.

2.2. Roads and Road Transport.

The regional policy on roads and road transport adopted by SATCC includes the development of a regional trunk road network. The policy recommends harmonization of road design standards, harmonization of road traffic regulations between the countries and collaboration on road transport issues.

The technical harmonization related to roads includes:

- harmonization of geometric road design standards such as road classes, design speed, horizontal and vertical alignment, visibility, cross sections, drainage etc;
- harmonization of structural design of pavement for new roads as well as for overlay on existing roads based on harmonized axel loading; and
- specifications.

Such standards shall take the present and future flow of traffic into consideration and take into account and aim at an economically rational balance between design standards and maintenance costs.

It is also considered necessary to prepare specific criteria for assessing when preventive maintenance is due, instead of making costly repair works after damage has occurred. The goal as regards road maintenance is to improve the capacity of the member countries for an adequate management and implementation of the maintenance of their road network.

To facilitate international operations by road and to promote efficiency and safety of such operations the general provisions of the law in Member States shall be harmonized based on the Vienna Conventions on Road Traffic and Road Signs and Signals of 1968.

The harmonization is expected to include all basic provisions of the law, regulations related to road traffic, road signs and signals, licensing of drivers and vehicles, documents, third party insurance, speed limits, technical requirements, dimensions, gross weight and axle loads of vehicles, safety requirements concerning dangerous substances and special transport requiring escort, road user charges, promotion of road safety and all related matters.

In addition common rules and procedures for intra-regional transport, road transport agreements, introduction of common documentation and procedures and facilitation of border formalities is to be promoted within the SADCC region. Non-discriminatory practices in the levying of frontier tolls and in relation to transport routes and treatment of operators shall be adopted.

These policies are mainly implemented through a Group of Experts on Road Infrastructure, and another Group of Experts on Road Traffic and Transport. These Groups have started to review the different items included in the sector policies on roads and roads traffic.

The Regional Programme of Projects includes several road projects constituting important links in the Regional Trunk Road Network approved by the SATCC.

2.3. Rail Transport

It is generally accepted that the railways are and shall be maintained as the backbone of the transport system.

To facilitate the development in the future, the basic bilateral agreements on operations already made shall be expanded to cover all aspects of the international operations. Additional agreements are to be concluded where needed.

Standardization of technical requirements and operating rules as far as feasible will also give advantages in connection with purchases, maintenance and operations. Standardization is especially important when possibilities for regional production of items needed by railways are considered. To facilitate this development, a Study on Railway Rolling Stock, Project No. 2.0.1, has already been carried out.

Main policy guidelines include also:

- Adoption of common safety rules and regulations governing railway signs, signals, rolling stock and transport of dangerous substances;

- harmonization of legal and administrative requirements in order to eliminate barriers to flexible operations and simplification of documentation and procedures related to packing, marking and loading of goods and wagons; and

- introduction of non-discriminatory rates, allocation of storage space and railway rolling stock for emergency operations on a non-discriminatory basis, and facilitation of the transfer of railway wagons in inter-state operations;

The railway administrations shall consult each other on proposed measures that might affect the railway transport of other Member States.

These policies are implemented through the Meetings of Railway Administrations included in the Operational Co-ordination Development Programme. In addition a Spare Parts Task Group is included in the Programme.

Another important aspect is training. A Study on Railway Training Programmes is about to start.

Several studies and capital investment projects regarding railways are included in the Regional Programme of Projects mainly aiming at rehabilitation of the Regional Railway Network.

2.4. Ports and Water Transport

The regional ports as main interfaces between maritime transport and other modes of transport are key links in the transport chains conveying the overseas trade of the region. Thus the same broad policies and objectives apply to ports and water transport as to the surface transport system in general.

For the development of a specific port policy the guidelines include:

- exchange of information on port services;

- port staff training

- harmonization of port regulations and procedures;

- simplification of documents related to port operations;

- conformance of port statistics;

- development of accounting practicies; and

- introduction of cost based tariffs under harmonized conditions;

The specific shipping policy guidelines deal with promotion of regional shipping development and transit traffic flows through:

- establishment of port information centres in the port organizations with essential telecommunication facilities;

- efforts to make the maximum use of the opportunities offered by the Code of Conduct for Liner Conferences as adopted by the United Nations Conference on Trade and Development where it is advantageous to do so;

- advancement of shippers organization;

- evaluation of the development of interports; and

- other related matters aimed at speeding up the turnround of cargo and rolling stock

To promote concrete operational co-operation, the following two Groups of Experts shall be convened by SATCC :

- a Group to deal with particular port matters; and

- a Group enlarged with representatives of the shippers of all the Member States as well as from the shipping companies in the region to deal with the subjects under shipping development and transit traffic flows.

As a first step Meetings of Port Authorities have been organized for the implementation of approved policies.

Training is recognized as an important activity for the improvement of the operations and services of the ports. A study on Port Staff Training Programme is being carried out.

Co-operation on shipping among the Member States is regarded as means to achieve maritime services adapted to the specific needs of the region. A Study on Regional Co-operation on Shipping is expected to be initiated soon.

Besides several port investment projects intended to provide infrastructure for modern maritime transport needs are included in the Regional Programme of Projects.

Today only on Lake Malawi/Niassa there is an established inland waterway shipping service administered by Malawi Railways. A study is included in the Regional Programme of Projects regarding the possibility to extend this service to a co-ordinated transportation system for the three countries bordering on the Lake. Besides a study of the Navigability of the Zambezi and Shire Rivers is included in the Regional Programme of Projects.

2.5. Civil Aviation

The policies on civil aviation shall aim at improving the feasibility of the service and operation of the national airlines and civil aviation departments through an extended coordination between the Member States.

On this basis the following principles have been accepted as guidelines for the development of civil aviation operations in the region:

- standardization of airport facilities and civil aviation rules and regulations;

- co-ordination of the flight schedules;

- development, maintenance and co-ordination of their navigational, communication and meteorological facilities for the provision of safe air navigation;

- preferential treatment to each other in connection of granting of air traffic rights and other facilities with a view of increasing the efficiency and profitability of the airlines;

- granting each other preferencial treatment in the use of maintenance and overhaul facilities and other services for aircraft, ground equipment and other facilities;

- application of the same rules and regulations relating to scheduled air transport services among themselves; and

- taking measures directed towards aircraft standardization including co-operation in the preparation of technical specifications for the type of aircraft to be operated.

The implementation of these policies is mainly carried out through two Groups of Experts on Civil Aviation already working. One group includes the Directors of Civil Aviation in the region, while the other group comprises senior executives from each of the national airlines. In addition several subgroups have been or are being organized.

Several capital investment projects concerning upgrading and improvements of the international airports in the Region are included in the Regional Programme of Projects.

2.6. Telecommunications

To promote joint actions and regional co-operation the following general policy guidelines have been adopted :

- restoration and improvement of basic telecommunication services between the countries and areas experiencing low grade of services;

- complementing the improvement of transport services with proper telecommunication services;

- introduction of automatic subscriber dialling (ISD) in international traffic for telephone and telex;

- provision of transit facilities within the region to the point that calls within the area need not to be routed via distant transit centres;

- improvement of the reliability and grade of services to acceptable international level on all traffic relations; and

- minimization of investment through efficient use of shared facilities by joint planning and by removal of operational obstacles like unduly high transit charges.

These policies are mainly implemented through the projects included in the Regional Programme of Projects. Several capital investment projects concerning the development of the regional telecommunications system are ongoing. Operational co-ordination has been achieved in co-operation with existing international organisations dealing with telecommunications and through the implementation of studies. Two operational co-ordination studies, both in the field of communications via satellite are included in the Regional Programme of Projects.

Training is essential in telecommunications and a Training Course in National Telecommunications Network Planning is included in the Regional Programme of Projects.

CHAPTER 3 : SUMMARY OF PRESENT MAIN PROBLEMS

This Chapter describes briefly the existing main problems sector by sector.

3.1 Roads and Road Transport

The total length of the regional trunk road network defined by SATCC is approximately 21 000 km. 15 500 km are two-lane tarred roads while the remaining 5 500 km are one lane tarred, gravel or earth roads of fair to poor standard. Some 50 per cent of the tarred roads have been trafficked beyond their structural design life and are deteriorating due to insufficient maintenance.

The shortage of resources for adequate maintenance is the most serious problem within road sector in the region today.

If serious deterioration is to be hindered, preventive maintenance and strengthening of pavements must be carried out regularly and in due time. If not, expensive repairs and rehabilitation schemes will be required after a period, with decreasing road standard and rapidly increasing user costs.

Overloading of heavy commercial vehicles aggravates the situation. Common problems in the region are the shortage of equipment to control overloading, shortage of skilled manpower for the control and weaknesses in the provisions of the law and in law enforcement. Steps to remedy this situation are however, being taken in several of the Member States, and also on a regional basis.

In traffic and transport inadequate training of drivers, especially of drivers of heavy motor vehicles creates problems. Concrete proposals to remedy this situation are already being considered by the Member States. Promotion of road safety also in other respects, improvement of environment, education and law enforcement, is in the work programme of the Experts on Road Infrastructure and Road Traffic and Transport working within Project No. 0.0.2, Operational Co-ordination Development Programme.

Differences in requirements, procedures and provisions of the laws in the countries causes inefficiency in the international services. Additional efforts to educate the participants in international operations are needed.

The lack of agreements, bilateral or others, is a restricting factor for international road haulage. Drafts for such agreements are however, already being considered by the Member States.

All these and other problems are expected to be tackled by the Group of Experts on Road Traffic and Transport and through the implementation of projects. Reference is also made to sub-section 4.2.3.

One more serious problem affecting both road and rail services, is the shortage of foreign currency. This is a limiting factor restricting the scope of services.

3.2 Railways and Rail Transport

Poor condition of the tracks or some parts of the tracks is still one of the major problems. Ongoing projects in this respect are being implemented on Malawi lines and in Mozambique on the lines leading from Nacala and Beira towards Malawi as well as by the Zambia Railways and the National Railways of Zimbabwe. A track rehabilitation programme has started in Botswana and is about to start on the Limpopo line in Mozambique. Concrete action is still missing concerning TAZARA and Goba and Machipanda lines. Additional funds are needed to continue the rehabilitation of the Benguela line.

In these conditions more attention should be paid to the maintenance of existing facilities. This is a fairly common problem.

Concrete steps are being taken to improve telecommunications between the Mozambique ports and the neighbouring countries. Additional project plans are being prepared. A regional review of the railway telecommunication systems will be carried out under Project No 2.0.4, Study on Railway Telecommunications.

Action is being taken concerning signalling but not maybe to the extent needed. On a number of lines there is no signalling.

Replacement of worn out equipment, especially in the workshops, is generally needed.

Shortages exist concerning rolling stock, turn round times are too long and improvements are needed in operating methods. The Rolling Stock Study, Project No. 2.0.1, has been completed. Action concerning rolling stock and operations is being planned based on this study. A Regional Study on Railway Wagon Manufacture will be made under Project No. 2.0.5 and a Spare Parts Task Group is being established under Project No. 0.0.2 (4).

Shortage of skilled manpower is being attended to. Additional facilities and capacity is needed however, to close the gap between the demand and availability. Study on Railway Training Programmes, Project No. 2.0.2, is about to start.

3.3 Ports and Water Transport

The main problems in the ports are on the operational side but there are also deficiences as to port infrastructure and equipment in some of the ports, e.g. :

- the shallow water in the entrance channels to all eastern ports except Nacala, limits the size of calling vessels;
- the lack of adequate coal terminals in Maputo and Beira;
- the lack of container cranes for the service of cellular container vessels; and
- the lack of adequate shore-side equipment for moving, stacking and retrieving containers.

The ongoing SATCC Port Projects aim at the elimination of this kind of bottlenecks, but it will demand large investments and require several years for implementation.

The cause of the low handling rates is mainly operational, i.e. depends on the cargo handling system and/or port operation systems. It is foremost a manpower problem due to the shortage of qualified instructors and adequate training facilities. However, the ongoing project 3.0.2, Port Staff Training Programmes Study together with specific management assistance and training programmes in most of the ports will help to improve the port performance to meet the demand of modern maritime transport.

The present insufficient telecommunications system constitutes another problem. For efficient planning of port operations, good ship to port communications as well as communications between port and shipper or consignee are essential.

Irregular organization and management of informatio within the ports render it difficult for shippers and consignees to obtain reliable information about shipments even if they succeed in forcing the telecommunications barrier.

The ports and maritime transport statistics are not adequately organized for planning and operations control.

3.4 Civil Aviation

In short and in general the main problems now existing in the civil aviation sector can be summarized as follows :

- There is a lack of co-ordinated, standardized legislation or regulations governing civil aviation of the Member States. The civil aviation authorities have to a great extent inherited basic regulations, systems and standards from previous administrations.

- Timetables are not sufficiently co-ordinated and routes are not integrated. Better co-ordination would offer more connections between main points in the region and thus create more revenues for the airlines at no extra costs.

- There is a shortage of trained experienced staff in the airlines and inadequate training facilities.

- Bad punctuality and adherence to schedules are common problems. Even sudden cancellation of flights is a problem.The result is an image of unreliability for the airline and increased, unexpected costs for the passengers.

- Belly compartments in the aircraft are poorly utilized for cargo and there is a lack of collection/distribution networks on the ground.

- There is a great variety of aircraft types in small numbers which prevents standardization and proper utilization of the aircraft fleet, personnel and maintenance facilities.

- Insufficient or unreliable navigational and approach aids and airport lighting equipment are common problems.

- Finally poor aeronautical telecommunications and diversity in existing equipment types are serious problems in the region.

On the above grounds Projects No. 4.0.1 to 4.0.9 have been formulated and various working groups have been established to solve the problems.

3.5 Telecommunications

The progress as to the implementation of the regional programme has been generally encouraging in the telecommunications sector with a number of key projects well under way.

With the completion of the most urgent regional Panaftel microwave links, satellite earth stations and international switching centres the present problems of inadequate capacity and low quality of service should be considerably reduced within a couple of years.

In order to avoid setbacks and delays it is imperative to pay more attention to the weakest parts of the programme.

The expansion and rehabilitation of the telecommunications system of Mozambique will remain the most critical undertaking because of the vast volume of work required, high implementation costs, shortage of skilled staff and logistical difficulties.

Angola has just started with the definition of a twenty-year Master Plan (1985 to 2005) and a substantial amount of effort will be required as soon as the local conditions will allow the practical implementation of the plans.

Emergency measures for restoration of minimum communications must also be completed.

For the rapidly expanding regional automatic telephone traffic considerable extra transmission and switching capacity will be needed. In this context the expansion of the Earth Satellite Station in Lusaka and the new Earth Satellite Station with the associated international Switching centre in Dar es Salaam are important.

Co-operation in operational matters must be increased considerably, when the automatic service is gradually expanded. Routing of calls, establishment of proper international maintenance centres, satellite programme harmonization, agreements on accounting rates, restoration routines, and radio frequency coordination are matters of foremost importance.

CHAPTER 4 PLAN AND IMPLEMENTATION PROGRAMME FOR SURFACE TRANSPORT

This Chapter consists of four sections. The first describes the regional surface transport plan while the following three sections describe the three different types of measures of the implementation programme, i.e. operational coordination, training and capital investment projects.

4.1. Regional Surface Transport Plan

A Goods Traffic Forecast, a Mineral Transport Study and a Coal Marketing and Transport Study have been prepared by the SATCC Technical Unit. The aim of this work has been to determine a common base for future detailed forecasting of trade patterns of SATCC Member States and for future international traffic in regional ports and on regional roads and railways.

The forecast includes the main traffic flows between the Member States and the Regional Ports and the main findings of the Coal Marketing and Transport Study. Policy decisions concerning the routing of traffic in accordance with SATCC policies could, however, change these figures considerably.

Of the total flow less than ten per cent is estimated to be transported by road. The routing of the trade flows thus has been a matter of considering which ports and railways will be used.

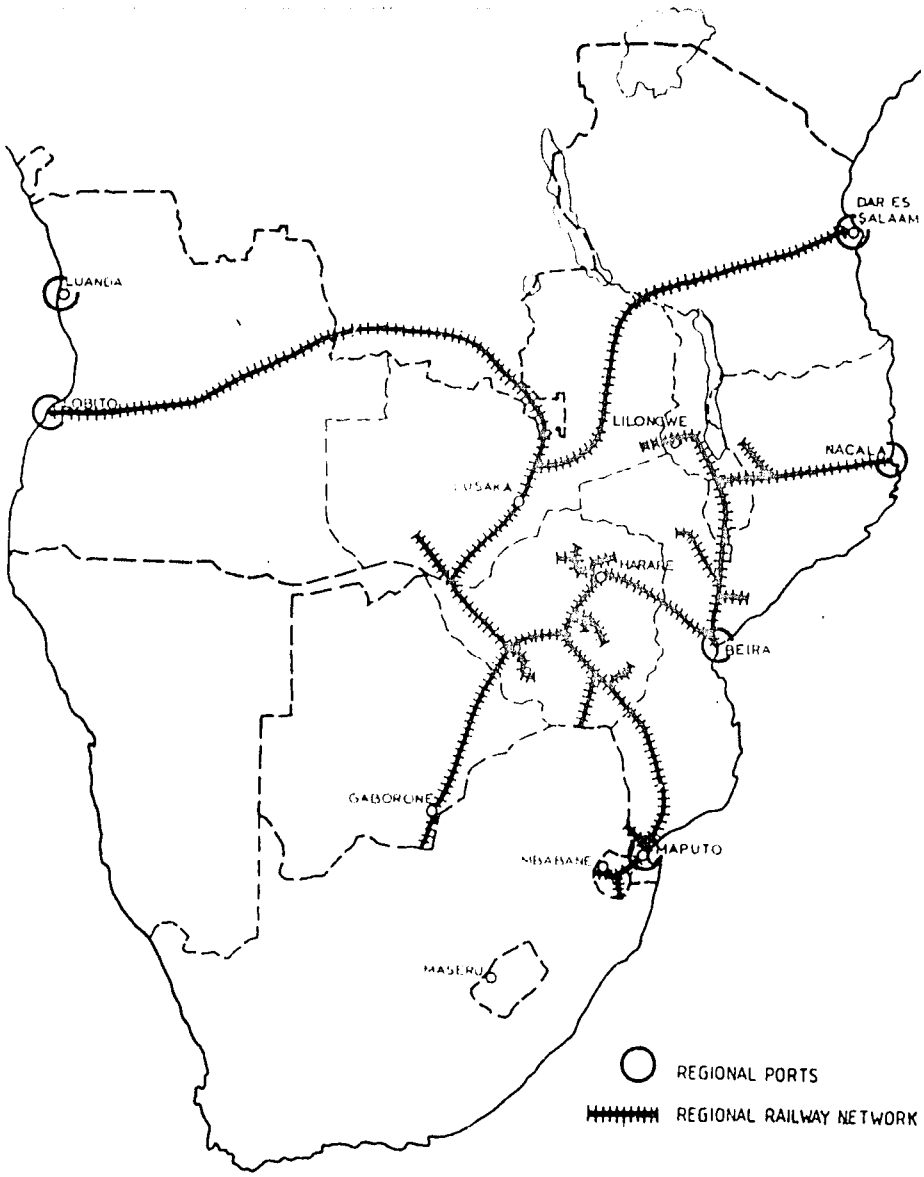
It has been assumed that there will be a gradual shift of the regional overseas traffic from the South African ports, presently being used, to those routes, railways and ports in the region, which offer the cheapest services. No major additions are needed to the regional transport system to handle the forecast commodity flow. It is assumed, however, that the ports of Beira and Maputo/Matola will be improved to be able to cater for vessels up to 125 000 dwt to allow for large scale exports of coal by 1999.

The regional surface transport plan consists of three sector plans which vary as to time perspective and degree of specification. The port and railway plans specify demand and planned capacity in 1985, 1990 and year 2000, while the road plan outlines a future trunk road network.

4.1.1 Regional Ports

The regional ports are Maputo, Beira, Nacala, Dar es Salaam, Lobito and Luanda. See Figure 4-1.

FIGURE 4-1 REGIONAL PORTS AND RAILWAY NETWORK



Estimated future cargo traffic through ports appears in Table 4-1, Traffic Demand and Port Capacity. The capacity figures are based upon the assumption that the port projects included in the regional programme will be implemented as planned.

There are two main features in the development of the composition of commodity groups which have a bearing on the future port capacities. One is the trend towards containerization which influences the plan for general cargo facilities. The other is the mineral export potential, particularly coal, which has a heavy impact on bulk handling installations.

The trend towards containerization concerns all ports in the region. The ports of Maputo, Nacala, Dar-es-Salaam and Luanda, have comprehensive regional projects for container terminals. The traffic projections as to the number of containers over Maputo derive from the final report of the Container Handling Study which forms a part of Project No. 3.5.1, Increase in the Capacity of the Port of Maputo. The quantities are adjusted downwards from earlier studies. Of the projected Nacala container traffic about 80 per cent will be for Malawi and consequently only 20 per cent national.

The RO/RO facility of the Port of Beira will be extended considerably to handle the projected traffic of which in 1990 about half is expected to be for the industrial areas in the Harare district, one third national traffic and the rest for Malawi. These proportions are assumed to prevail towards the year 2000.

Dar es Salaam has a comparatively large and growing container traffic but no specialized facilities. A project aiming at providing such facilities is, however, included in the regional programme. 52 per cent of the projected traffic is national and 42 per cent is for Zambia, which assumes that the Tazara line will be working properly. The rest is composed of Zaire, Burundi and Rwanda cargo.

The master planning for Lobito Port will consider the needs for specialized facilities there. Luanda is planning a container and RO/RO terminal.

The export of coal from the region will mainly be routed over Beira and Maputo. It is assumed that 0.5 million tonnes from Moatize will be shipped over Beira in 1985, 2.9 million tonnes in 1990 and a total of 8.2 million tonnes from Moatize and Mucanha Vuzi in the year 2000. The planned coal terminal capacity for 2000 is 12.7 million tonnes per year which also assumes that the entrance channel will be able to accomodate vessels of at least 80,000 dwt tonnes.

TABLE 4-1 TRAFFIC DEMAND AND PORT CAPACITY IN 1981, 1985, 1990 AND 2000

Million port tonnes

	1981		1985		1990		2000	
	Present demand	Present capacity	Estimated demand	Planned capacity	Estimated demand	Planned capacity	Estimated demand	Planned capacity
Maputo/Matola								
Containers (TEU)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170 000
General Cargo[1]	2.6	4.0	3.0	4.0	4.0	6.0	6.0	7.7
Dry Bulk	1.0	1.0	1.0	4.0	1.0	4.0	1.5	
Liquid Bulk	1.5	1.7	2.0	2.0	2.0	3.0	2.5	3.0
Beira								
Containers (TEU)	1 450	2 000	13 600	25 000	48 000	90 000	90 000	120 000
General Cargo, RO/RO	1.1	1.6	1.8	2.0	2.6	3.0	3.0	4.0
Dry Bulk	0.4	0.6	0.7	1.0	3.2	4.0	10.0	14.0
Liquid Bulk	0.4	1.0	0.9	1.0	1.6	4.5	3.7	4.5
Nacala								
Containers (TEU)	1 000	12 000	5 000	0	8 000	60 000	97 000	97 000
General Cargo[1]	0.6	0.6	0.8	1.0	1.1	1.0	1.6	1.6
Dry Bulk					0.6		1.0	
Liquid Bulk	0.1	0.5	0.1	0.5	0.2	0.5	0.4	0.7
Quelimane								
Containers (TEU)	19 750		23 000	33 000	60 000	80 000	120 000	
General Cargo[1]	1.1	1.4	2.1	3.3	2.6	8.7	3.6	
Dry Bulk	0.1		0.6		0.5		0.5	
Liquid Bulk	n.a.		0.8		0.9		1.3	
Inhambane								
Containers (TEU)			2 600		19 200		60 000	
General Cargo	0.6	1.0	0.3		0.4		0.8	
Dry Bulk		0.6			0.4		0.5	
Liquid Bulk	0.2	0.4	0.2		0.3		0.4	

[1] General cargo includes the tonnage over container and steel wharfs

[2] General cargo includes the tonnage in containers

The forecast for the coal traffic over Maputo is less comprehensive than that for Beira. According to the Goods Traffic Forecast, the amount of coal through Matola is given as 4.1 million tonnes in 1990 growing to 13 million tonnes in 2000. Should all this traffic materialize, the planned Matola terminal capacity will not suffice and new solutions will be required.

4.1.2 Regional Railway Network

The network is presented in Figure 4-1, Regional Ports and Railway Network. The line capacities in 1983 and traffic demand in 1995 are shown in Figure 4-2. The presentation of the capacities and traffic demand is based on the Railway Rolling Stock Study, Project No. 2.0.1, completed by Kampsax-Swederail Consultants. They have used the UIC Code-Leaflet 405R, "Method to be Used for the Determination of the Capacity of lines", for their calculations. Times needed to operate passenger trains based on their timetables in 1983, and worktrains have been taken into account. The figure thus gives the capacities available for commercial goods transport.

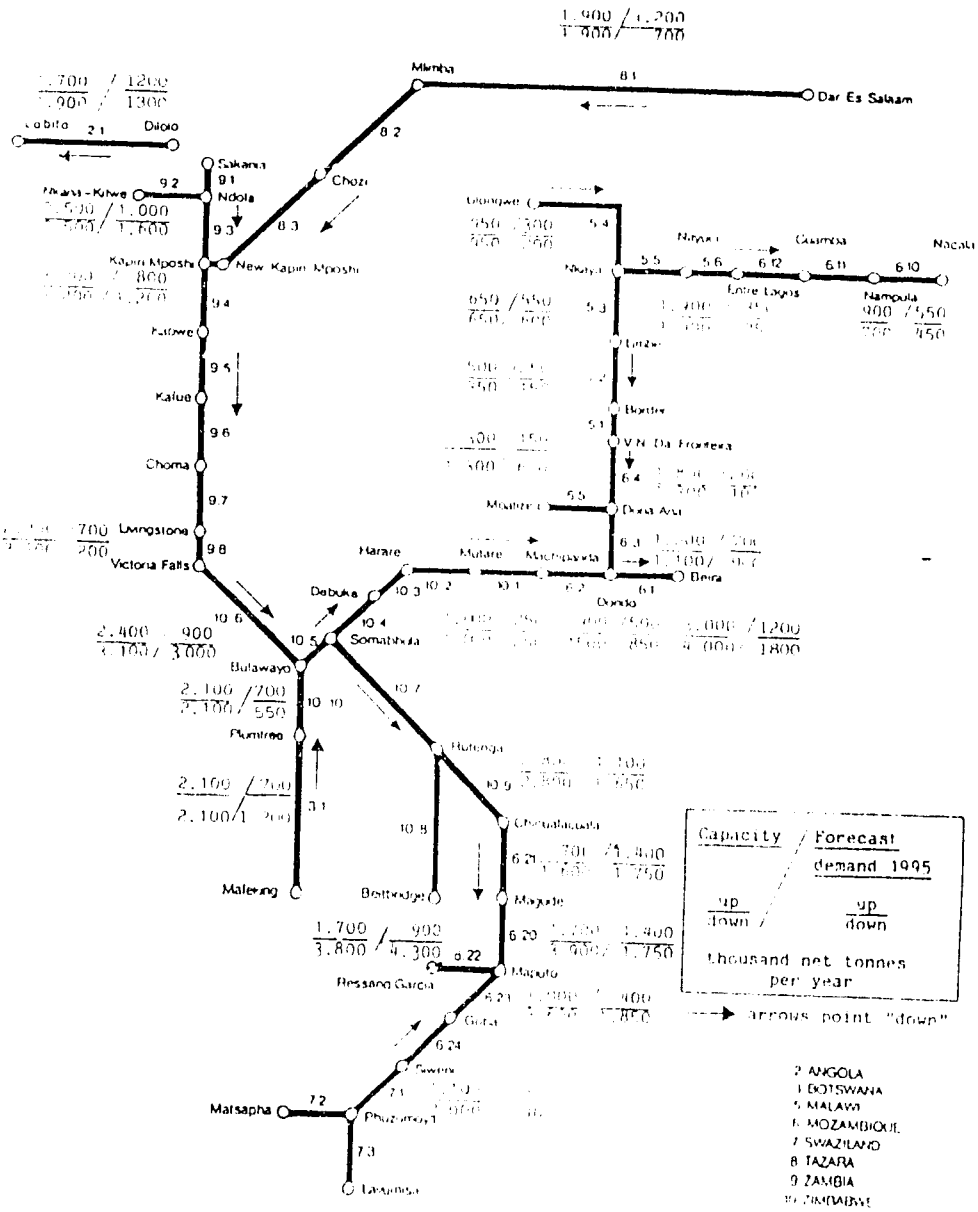
The figure shows that the present single line capacities will mostly be adequate to handle the anticipated traffic up to 1995, provided that the rehabilitation works will be completed as planned. The capacity calculations have been made presuming that the lines have been rehabilitated. In practice, due to the poor condition of tracks and other problems, the capacities on the lines, leading to regional ports are today much less than indicated by these calculations.

After the planned rehabilitation works have been completed, additional improvements will be needed only on the Limpopo and Ressano Garcia lines to cope with the anticipated traffic. On the Beira-Dondo stretch however, doubling of the track is needed since dense commuter traffic is planned to be introduced there. Special arrangements are needed for commuter traffic near big cities also elsewhere.

If large scale coal export through the regional ports develops additional improvements are needed as well. Single line capacities may be increased by extending the length of crossing loops and by introducing heavier trains, by improved signalling and other improvements affecting operations.

In principle the present network and single line capacities appear to be adequate for the foreseeable future, provided that the planned rehabilitation programmes will be implemented.

Figure 4-2 Line Capacities and Demand in 1995
(1000 tonnes)



4.1.3 Regional Trunk Road Network

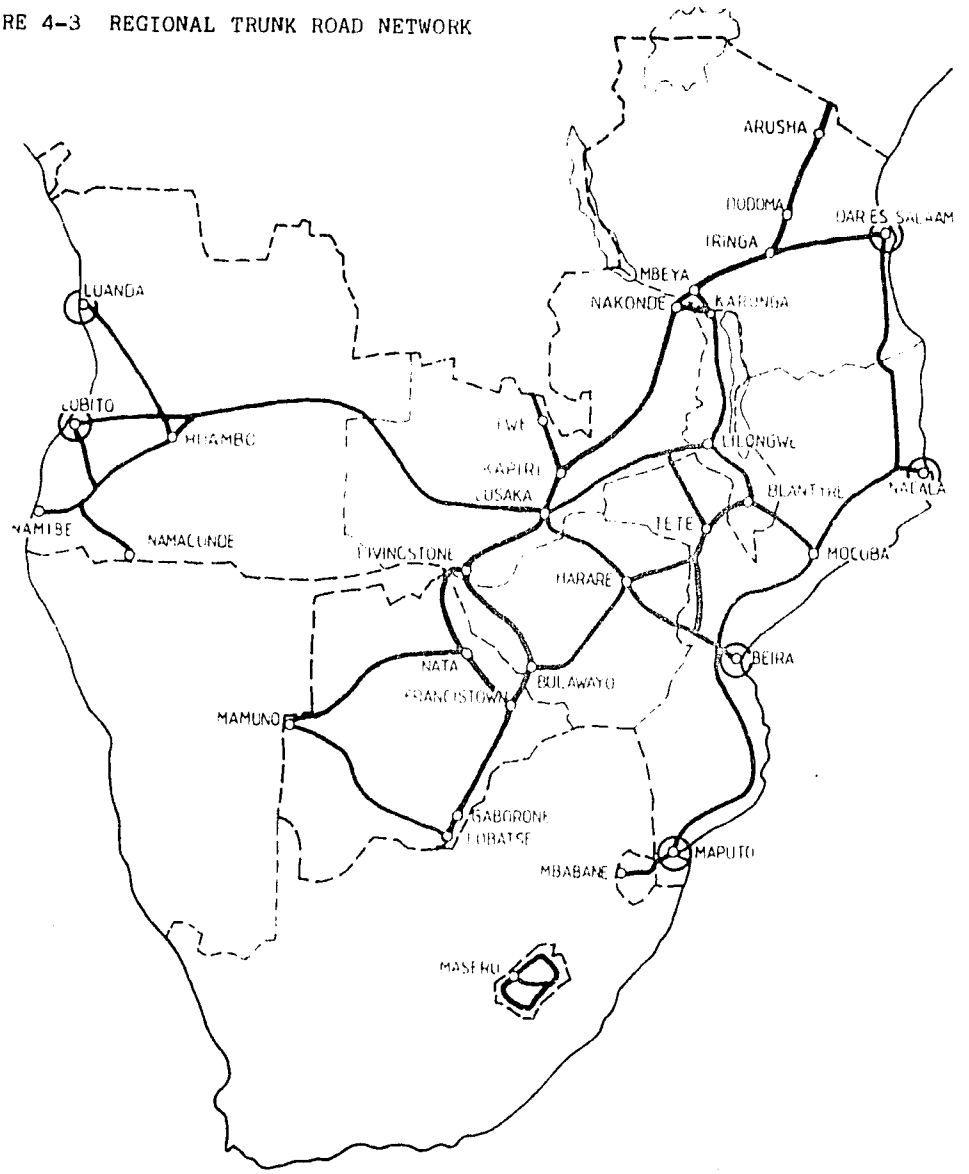
The configuration of the Regional Trunk Road Network as defined by SATCC is presented in figure 4-3. This network includes the existing regional roads and the links necessary to connect the capitals of the region and to provide access to ports and railheads of regional importance and to neighbouring countries.

Most of the links exist already, although in many instances of inferior standard and/or condition. Only two entirely new links are required, namely the link between Mozambique and Tanzania (Unity Bridge and access roads) and the link between Malawi and Tanzania (Karonga-Mbeya). Studies on these two links are expected to start shortly.

However, to achieve the goal of an integrated regional network of adequate standard, extensive rehabilitation, upgrading and reconstruction works are necessary on a number of existing sections of the network. Several projects concerning the network are already in hand, while others remain to be initiated. Moreover, to secure an adequate upkeep of the network, significant improvement in the road maintenance capacity in the region is called for.

The review and follow-up of the implementation of the Regional Trunk Road Network is one of the tasks of the SATCC Group of Experts on Road Infrastructure.

FIGURE 4-3 REGIONAL TRUNK ROAD NETWORK



4.2 Operational Co-ordination

Better operational co-ordination of surface transport is emphasized within SATCC and a number of concrete measures have been initiated within the three sectors of surface transport.

4.2.1 Ports and Water Transport

In accordance with the decision of the Committee of Ministers Meeting in Lusaka, March 1983, a group of Port Administration Experts has been constituted under Project No. 0.0.2, Operational Co-ordination Development Programme, Sub-project 7, Port Management Co-operation.

The Committee of Ministers has approved the terms of reference for the Group. Accordingly the Group is expected to provide technical guidelines inter alia on the following subject matters:

- exchange of information on port services;
- port staff training;
- harmonization of port regulation and procedures;
- simplification of documents related to port operations;
- port management statistics;

In the long term perspective the Group will also discuss and make recommendations on accounting practices for cost calculations and the use of cost based tariffs.

Further on, a second Group of Experts (Projects No. 0.0.2(8)) will be convened to deal with the broader concepts of shipping and navigation. This group is expected to discuss and make recommendations on the following subject matters:

- establishment of port information centres in the ports with essential telecommunication facilities;
- suitable use of opportunities offered by the Code of Conduct as adopted by UNCTAD;
- advancement of Shippers Organizations;
- harmonization of national shipping regulations and standards with international agreements;
- development of interports;
- other related matters aimed at speeding up the turnround of cargo and rolling stock.

The prospects of shipping co-operation within the region will be assessed by the study Regional Co-operation on Shipping, for which a work programme has been proposed. Italy has undertaken to finance the study and negotiations with suitable consultants are under way.

4.2.2 Railways and Rail Transport

Under Project No. 0.0.2, Operational Co-ordination Development Programme, the representatives of the railway administrations in the region have convened twice, the first time in Maputo in July 1983 and the second time in Lobito, Angola, in April 1984. These meetings are financed by DANIDA.

For this group of experts the Committee of Ministers of SATCC has approved terms of reference which include:

- evaluation of the findings of the Railway Rolling Stock Study, Project No. 2.0.1, and based on this, making of recommendations for further action;
- review of track conditions (rails, sleepers, fastenings and maintenance methods);
- operating methods;
- signalling;
- telecommunications;
- commercial aspects (classification of goods, tariffs, rules concerning loading, packaging etc; transport of dangerous goods; transport of perishable food stuffs, exceptional loads etc.);
- operations statistics;
- manpower; and
- other aspects coming up along their work.

The Study on Railway Rolling Stock, Project No. 2.0.1, has been completed. It includes recommendations for further action concerning the rolling stock, maintenance and operations. The Railway Administrations have agreed, based on the findings of the Study, that Studies on Railway Telecommunications and Regional Wagon Manufacture shall be carried out. Terms of Reference have been prepared for these studies which have been included in the Regional Programme of Projects as Projects No. 2.0.4 and 2.0.5. Both of these studies are expected to be carried out in 1985.

In addition the Railway Administrations have agreed that a Spare Parts Task Group composed of Railway Mechanical Engineers shall be established to consider recommendations for spare parts holdings and standardization of wagon components and wagons. The Task Group is expected to start its work early in 1985.

Other technical recommendations and proposals for the improvement of operating efficiency are being considered by the Administrations. These matters and a review of track and locomotive maintenance are scheduled to be discussed at the next Meeting of Railway Administrations.

Based on bilateral agreements on international operations and exchange of wagons, the border crossing traffic is going ahead in a satisfactory manner. Practical problems can be solved during these meetings. Proposals concerning improvements to the bilateral agreements are being considered.

Concrete action has been taken to improve railway telecommunications between the Mozambique ports and the neighbouring countries. A regional review of railway telecommunications will be made in connection with the Study on Railway Telecommunications mentioned above. Availability of spares, stock keeping, maintenance practices, formation of trains, shunting, auxiliary services at terminals etc. affect the efficiency of railway operations. Through co-operation improvement has been achieved but much has still to be done.

It is foreseen that the Meetings of Railway Administrations will have to continue at least for two years as scheduled by now, possibly longer. Regular meetings of the representatives of the railway administrations to discuss matters related to the bilateral operating agreements are needed in addition to the above meetings.

4.2.3 Roads and Road Transport

Under Project No. 0.0.2, Operational Co-ordinating Development Programme, two groups of experts have been established within the sector of roads and road traffic and transport:

- Group of Experts on Road Infrastructure
- Group of Experts on Road Traffic and Transport

(1) Road Infrastructure

The Group of Experts on Road Infrastructure had its initial meeting in August 1983. The aim of the Group is to promote regional co-ordination as to maintenance, rehabilitation and construction of roads and to harmonize design standards and specifications. The following items are included in the terms of reference for the group:

- Geometric road and bridge design standards;
- Structural design of pavements, drainage and bridges;
- Specifications for construction work;
- Specifications for road signs, signals and markings; and
- Recommendations for maintenance work.

Regarding the Regional Trunk Road Network, the work of the Group consists of following up the status and progress of the implementation of the Network, as well as reviewing and updating the concept of the network and eventual needs to include new links and projects.

The second meeting of the Group took place in Harare, Zimbabwe, in July 1984. The meeting established priorities for the Group's work and agreed on guidelines for practical arrangements for the implementation of the Terms of Reference. As priority items in the work, the discussions centred on design standards and road maintenance. The follow up actions are now being undertaken by the member countries and SATCC (Technical Unit) to put the decisions and instructions of the meeting into effect.

These include preparation and compilation of additional documentation on the priority issues and the drawing up of detailed plans for the work on harmonization of standards and specifications to be discussed and agreed upon at the next meeting of the Group.

An agreement for the financing of the work of the Group has been signed between SATCC and DANIDA.

(2) Road Traffic and Transport

To promote operational co-ordination of road traffic and transport and to facilitate international road haulage the Committee of Ministers of SATCC has approved the following tasks for the Group of Experts on Road Traffic and Transport, who shall:

- review and prepare updating of the present provisions of the law taking into account, when applicable, international conventions and agreements in this field;

- make proposals for the harmonization of registration and licensing of motor vehicles, technical requirements concerning motor vehicles, including dimensions, gross weight and axle loading;

- consider unified methods for the testing of motor vehicles for their roadworthiness, organization of driving schools and driver training and licensing of drivers;

- promote road safety work;

- consider the principle of reciprocity in road transport and make recommendations for the type of traffic to be authorized and for bilateral or multilateral agreements;

- investigate operating costs, user charges and possible barriers to international road haulage and make appropriate recommendations;

- to make recommendations for better enforcement of the law, control of overloading included;

- prepare proposals for common rules concerning dangerous or special transport operations;

- make recommendations for an unified third party insurance system.

The first meeting of the Group was held in Maputo in October 1983 and the second meeting in Mbabane, Swaziland, in June 1984.

At the first meeting the proposed work programme was reviewed for further action. At the second meeting drafts for harmonized legislation on driver training and licensing and for bilateral road transport agreements were approved for submission to the Co-ordinating Committee of SATCC.

Studies on road user charges and third party insurance have been made. Reports on these studies are scheduled to be discussed at the third meeting of the Group.

Next on the work programme are harmonization of axle loads, vehicle dimensions and related requirements (in co-operation with the Group of Experts on Road Infrastructure), control of overloading, studies and recommendations on road safety and harmonization of road signs and signals (in cooperation with the Infrastructure Group).

An agreement for the financing of these activities has been signed between SATCC and NORAD.

4.3 Training

Improved training within surface transport is emphasized in all sectors. A need for better high level training of officials, planners and managers of the central governments, transport directorates and transport undertakings has been identified.

Such training should include all sectors of surface transport, aim at a better overall understanding of transport issues and planning methods and emphasize the need for co-ordination between different transport modes.

4.3.1 Ports

The total number of personnel employed in the regional ports is about 33 000 of which eight per cent in administration, 76 per cent in operations and fifteen per cent in maintenance. This corresponds with the needed number at the present productivity. However, there is a lack of skill and experience on most levels in the organizations related to the few training facilities in the region and the generally low educational level with a large share of illiterates, which narrows the base for vocational training.

The shortage of skilled manpower is one of the most serious factors in the development of port operations. Due to this SATCC is carrying out an overall assessment of the manpower and training aspects of the regional ports through Project No. 3.0.2, Study on Port Staff Training Programmes. The study includes the following topics:

- inventory and assessment of port organization, staff qualification and training facilities;
- identification and quantification of needs for qualified personnel;
- identification of training needs and requirements for training facilities.

The study financed by Norway shall recommend on measures which can be implemented in the short term perspective as well as on measures which require more time to prepare and implement. An Interim Report mainly dealing with short term measures has been submitted by the Consultants.

Norway has also agreed to finance SATCC Project No. 3.7.2(10), Equipping and Starting of Bandari College which is a training institute for the staff of the Tanzania Harbours Authority.

In Mozambique UNCTAD (Trainmar) is preparing courses for lower and middle management staff on port operations.

4.3.2 Railways

A project to provide adequate training facilities for the Swaziland Railway and the Botswana Railway, funded by EEC has been completed. In part separate institutions will be established, in part common facilities will be utilized. A project for technical assistance and manpower and training development for TAZARA has been initiated. The training facilities in Mozambique are being rehabilitated and upgraded. The training capacity is being increased in Zimbabwe and Zambia. Technical assistance is being received for Benguela Railway. Malawi Railways training facilities are considered adequate for their own needs.

In addition in connection with new capital projects a training element is nowadays nearly always included in implementation plans. On the job training is gaining in importance.

On the above grounds the training of station masters, drivers, shunters, artisans etc. personnel employed by the railways in the field is getting under control. This does not mean however, that these institutions function with adequate efficiency.

Shortage of skilled instructors and facilities is still reported. Besides facilities for higher training are still missing. A study is being carried out by the Union of African Railways but no concrete steps for the establishment of such facilities have been taken up to now besides the allocation of a site for this purpose by the Zambian Government.

For an overall review Project No. 2.0.2, Study on Railway Training Programmes, a financing agreement between the Government of Botswana and Kreditanstalt fuer Wiederaufbau (KfW) on behalf of the Federal Republic of Germany and an administration agreement between SATCC and KfW have been signed.

4.3.3 Road traffic and Transport

In Europe the number of fatal accidents per 10 000 motor vehicles is generally in the range of 4-5 per annum. Studies have revealed that the corresponding figures in African countries are mostly in the range of 40-80 fatalities per 10 000 per annum.

Against this background action has been initiated to find out the level of accidents and their causes in the member states to be able to direct the training efforts concerning all road users in an appropriate manner.

Improvement of driver training is considered essential. Some member states have difficulties in accepting drivers from other countries since the requirements concerning learner drivers and their testing vary to a great extent.

Road safety and driver training aspects are being looked into under the auspices of the Group of Experts on Road Traffic and Transport.

On the other hand, there is a pressing need for improving the availability of qualified manpower at various levels serving road traffic and transport in fields such as

- vehicle servicing and repair (workshop personnel);
- management and other functions within road transport carriers;
- public services in charge of planning, management and control of road traffic and transport.

As a response to this need, Project 0.0.3 (1), Study on Road Traffic and Transport Training is being initiated. The aim of the study is to assess the needs and available facilities for training and to make recommendations for steps to be taken to improve the situation.

4.4 Capital Investment Projects

This section outlines the implementation programmes for each of the six surface transport systems in the region. These are the five port transport systems:

- Maputo
- Beira
- Nacala
- Dar es Salaam
- Lobito (inclusive of Port of Luanda)

including regional ports, railways and roads converging on them; and

- intra-regional surface transport projects which are not included in the port transport systems.

The capital investment projects of each system are included in Annex 1, Tables 2-7. Each table corresponds to a surface transport system. For each project the following information is presented:

- total project costs in current prices;
- allocated or committed funds;
- comments referring to project status and financing.

For more detailed information on individual projects, see project briefs attached as Annex 2.

4.4.1 Maputo Port Transport System

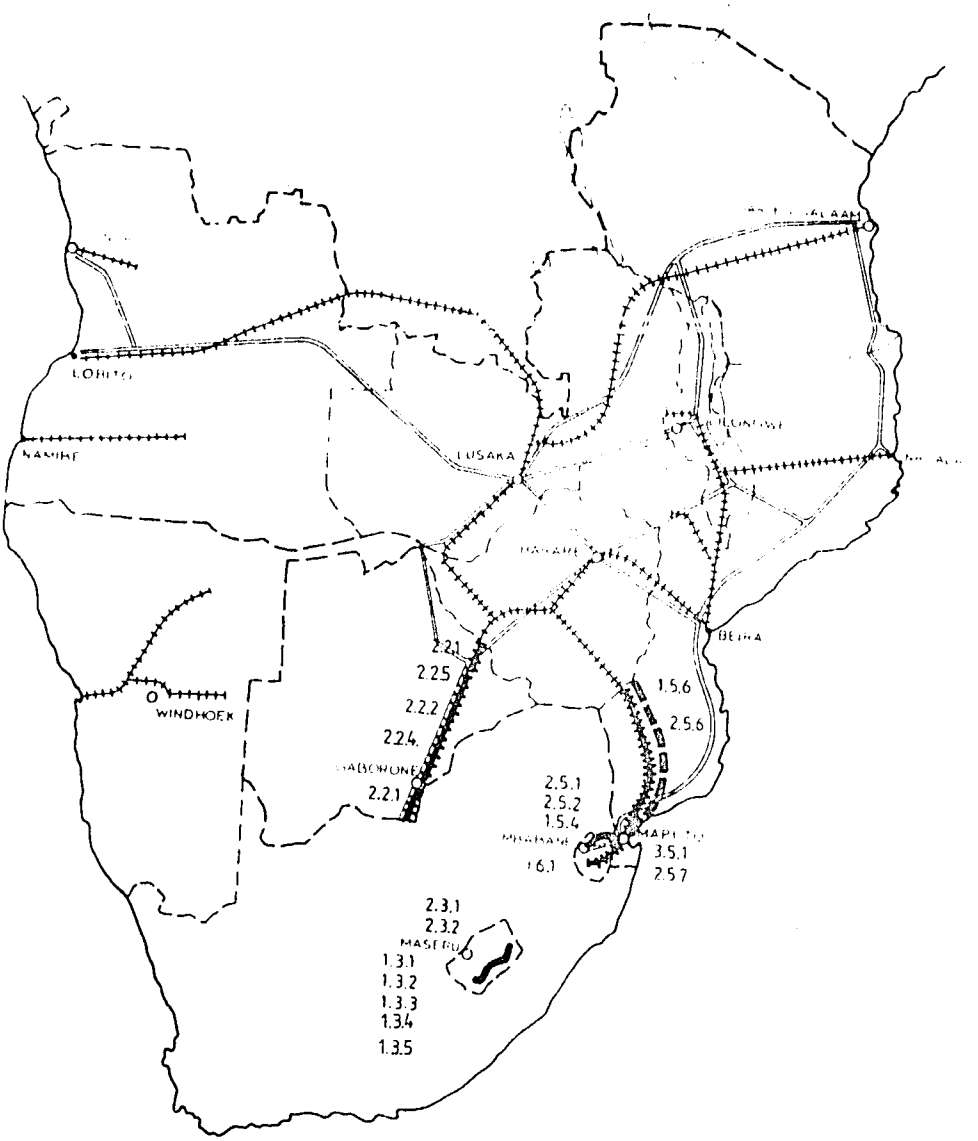
The Maputo Port Transport System includes Maputo and Matola ports, the railways and roads in the Maputo area, Swaziland and Lesotho, the railways in Botswana, the Limpopo railway line and a possible future road connection between southern Zimbabwe and the Maputo area. See Figure 4-4.

Three sub-projects are included in Project No. 3.5.1, Development of Maputo/Matola Port. The sub-project for the container terminal has made progress. Two container cranes have been acquired and a study on terminal lay-out and handling system has been completed. United Kingdom is financing management assistance over three years. The feasibility study for the improvement of the entrance channel is being discussed with Denmark. As the improvement of the channel is a condition for the planned coal export and container traffic over the port, and implementing of dredging projects requires several years, this study should be initiated as soon as possible.

Project No. 2.5.6, Feasibility Study and Preliminary Engineering for Rehabilitation and Electrification of Railways in Southern Mozambique and Swaziland, has been completed, financed by Sweden. The Study revealed that design and construction drawings and documents for most of the bridges on the railway lines in Southern Mozambique are not available. Heavy repairs are needed on several bridges and a maintenance programme should be initiated.

The Consultants concluded further that the rehabilitation of the Maputo-Chicualacuala (Limpopo line) is viable with a high internal rate of return. The same conclusion was reached in another study financed by ODA.

FIGURE 4-4 MAPUTO PORT TRANSPORT SYSTEM



On the above grounds two sub-projects have been prepared, namely Project No. 2.5.6(2), Study and Engineering for Bridges on Railways in Southern Mozambique, and Project No. 2.5.6(3), Rehabilitation of Maputo Chicualacuala (Limpopo) Railway (a two phase rehabilitation). Funds for the first phase of this project have already been secured from the United Kingdom and works are about to commence. See project descriptions in Annex 2.

Financing of the study and engineering phase of Project 2.5.1, Rehabilitation of the Machava-Swaziland Railway, has been pledged by the Italian Government. Project No. 2.5.7, Feasibility Study on the Reorganization of Maputo and Matola yards, is being carried out, financed by Italy.

The badly needed rehabilitaton of the Botswana line, Project No. 2.2.1, has started on the stretch Gaborone Southern Border (120 km) financed by the People's Republic of China. Additional funds are needed for the completion of the project. Canada has been approached in this respect. Rehabilitation of railway telecommunication facilities in Botswana (Project No. 2.2.2) and renewal of the present train working system (Project No. 2.2.4), will start in 1985 financed by SIDA. A project description for Project NO. 2.2.5, Maintenance Depot for Botswana Railways has been prepared. Financing for this project has not been secured.

The implementation and completion of the Botswana projects are becoming urgent since the date for the completion of the take over of the railway by the Government of Botswana has been fixed to the first of January 1987.

Project No. 2.3.1, Container Terminal with Customs Facilities in Maseru, Lesotho, is being studied by EEC. Technical drawings and costings for the implementation of Project No. 2.3.2, Expansion of Oil Storage Facilities in Maseru, are needed. SIDA has been approached for funds.

As a whole, railway projects related to the Maputo Port Transport System are moving ahead. Release of funds for their implementation should be speeded up, however. Additional funds are needed for Projects No. 2.5.6(2) and (3) and 2.2.1.

Decisions concerning the funding of Projects No. 2.5.1, 2.2.5, 2.3.1 and 2.3.2 should be speeded up.

One of the Lesotho road projects is progressing well, namely Project No. 1.3.1, Upgrading of the Road Mohale's Hoek Quthing - Qacha's Nek, although supplementary financing is needed.

The same applies to the two road projects linking Swaziland with Maputo (Projects No. 1.5.4 and 1.6.1) although financing has been only partly secured for Project No. 1.6.1.

A new project No. 1.3.5, Upgrading of the Road Mokhotlong - Oxbow, Lesotho, is proposed to be included in the Regional Programme of Projects.

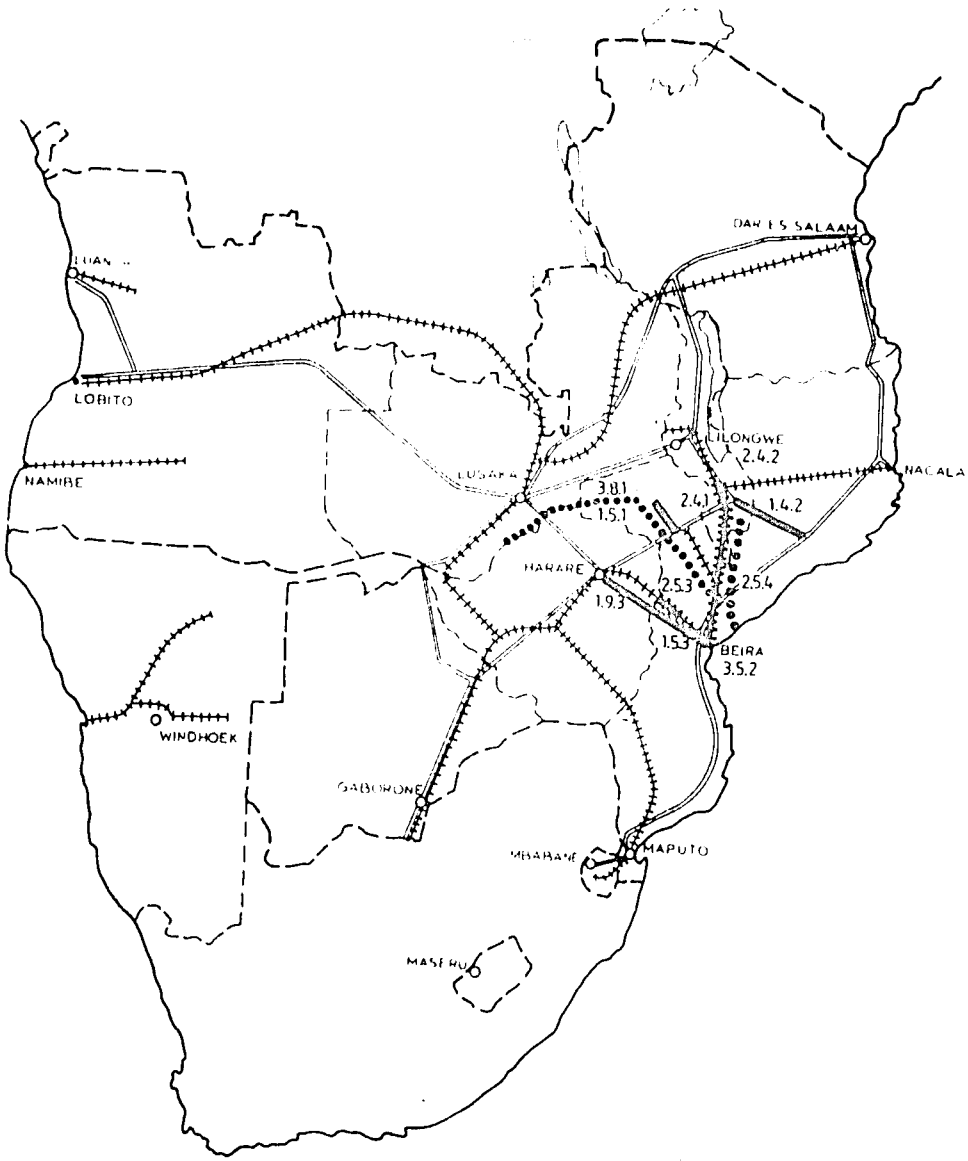
The costs for implementing all projects are estimated to US dollars 692 millions out of which 21 per cent has been secured and another 42 per cent is being discussed with potential financiers.

4.4.2 Beira Port Transport System

The Beira Port Transport System includes the Beira Port, the railway lines to Zimbabwe and Malawi and the main roads in the hinterland of the port as well as the Zambezi and Shire Rivers. See Figure 4-5.

Concerning Project No. 3.5.2, Increase in the Capacity of the Port of Beira, implementation of measures recommended in the phase I of the Beira Port Study is under way since more than two years. The measures concern rehabilitation of present port installations as wharfs and pavements, rehabilitation and upgrading of the coal loading facilities to the capacity of 1.2 million tonnes per year and purchase of new cargo handling equipment. The measures include also an emergency maintenance programme for infrastructure and equipment. The rehabilitation programme aims at increasing the port capacity to cater for the traffic during the next five to seven years. Of particular importance is that the coal handling facility is upgraded. If not, the export plans will not materialize which will cause severe repercussions on the economy.

FIGURE 4-5 BEIRA PORT TRANSPORT SYSTEM



The report on Phase 2, the "Access Channel Study", was submitted in September, 1982. The first phase of the deepening to CD-8 is planned to be initiated in 1985.

The Phase 3, "Master Plan Study", was submitted in April 1984 as a report consisting of a Main Report with 10 Annexes containing findings, investigations and recommendations for a long term development plan for the Port of Beira. The investments unto the year 2000 amount to USD 440 million. This report has been evaluated by the Mozambican authorities from a national point of view and by SATCC/TU from a regional point of view and a programme of priority projects has been agreed upon. The Government of Netherlands has expressed its interest in financing of the implementation of projects related to the Beira Master Plan.

Project 3.8.1, deals with the Navigability of Zambezi and Shire Rivers. UNDP has undertaken to finance the study. Draft Terms of Reference are exprected to be presented soonest by UN/DTCD.

Rehabilitation of the railway route to Malawi includes three projects, namely Project No. 2.5.4(1), Rehabilitation of the Beira-Malawi Railway/Beira-Dondo (28 km), Project 2.5.4(2), Rehabilitation of the Beira-Malawi Railway/Dondo-Malawi Border (331 km) and Project No. 2.4.1, Rehabilitation of the Salima-Southern Border Railway in Malawi.

A Belgian team has investigated local conditions and prepared terms of reference for a study and engineering for the implementation of Project No. 2.5.4(1), Rehabilitation of the stretch Beira-Dondo. SIDA/ADB have also been approached for financing of the study.

Rehabilitation of the section Dondo-Dona Ana towards the Malawi Border is being implemented and financing has been partly secured (see Annex 2). USD 79.0 million is needed to complete the project. Italy, CIDA, Canada and ADB have been approached in this respect.

Related to Project No. 2.4.2, Supply of Railway Rolling Stock for Malawi Railways, the Federal Republic of Germany financed a study in 1982. Another study financed by ODA on Malawi Railways was completed in 1983. Based on these studies the Federal Republic of Germany has pledged to finance 30 wagons in the first phase. The second phase includes 30 more wagons. Additional funds are needed for implementation of this phase. Needs for additional wagons will be evaluated later.

Rehabilitation of the Salima-Southern Border Railway is an ongoing project. A study on Malawi Railways has been completed financed by ODA. A two phase programme for the remaining works has been approved. It is expected that this programme will be financed by the Malawi Government and the United Kingdom.

A Rehabilitation Study under assignment by ODA has been completed in 1982 concerning Project No. 2.5.3, Rehabilitation of Beira-Machipanda section on the Zimbabwe line. Financing is being sought.

Concerning road projects a feasibility study for the Beira-Machipanda road (Project No. 1.5.3) is ongoing financed by Australia. ADB is expected to finance a study on the Mutare - Mozambique border Road (Project No.1.9.3). Financing is needed for the rehabilitation of a 86 km section near Tete on the Tete-Cassacatiza road (Project No. 1.5.1). Terms of Reference for a feasibility and engineering study for the Blantyre-Mocuba road have been prepared (Project No. 1.4.2). The study will be carried out as soon as the financial arrangements have been finalized. USAID has shown interest.

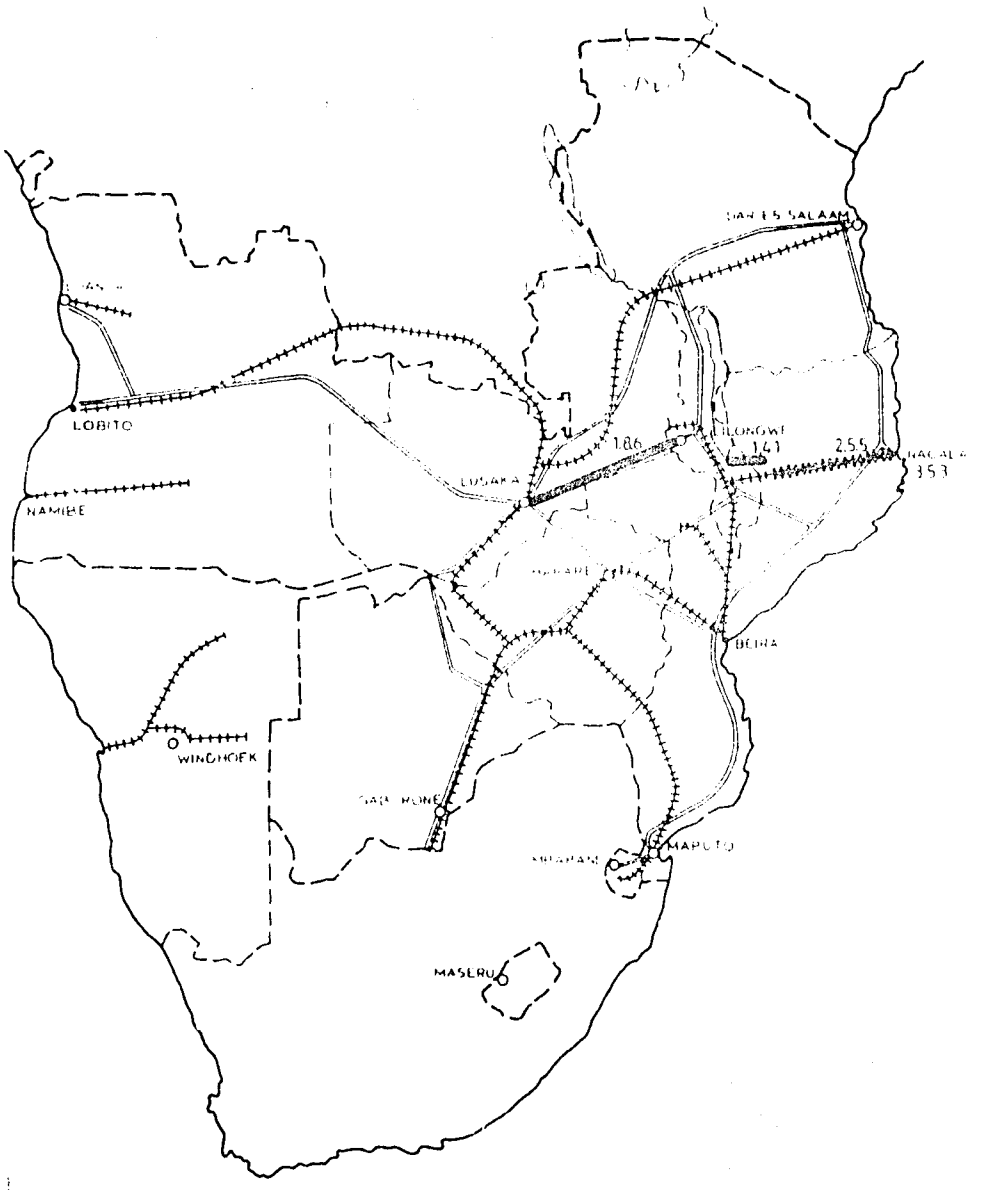
The costs for implementing all projects are estimated to US dollars 641 million out of which 11 per cent is secured and another 4 per cent is being discussed with potential financiers.

4.4.3 Nacala Port Transport System

The Nacala Port Transport System includes the Port of Nacala, the Malawi-Nacala railway line, the road system in the hinterland of the port and the road Lusaka-Chipata-Mchinji which connects Zambia with Nacala through the Malawi Railway (see Figure 4-6).

The first phase of Project No. 3.5.3, Design and Construction of Container Terminal, Nacala, is under way. Finland is financing the project and a team of 7 experts are at present working in the Port and Quarry for which the equipment has arrived. The most urgent measures to be carried out are the pavement of the handling and storage areas and specifications and ordering of equipment (shoreside machinery and a container crane). A substantial part of the project consists of technical assistance in terminal management and operation as well as training in maintenance of equipment and infrastructure. The total cost for the first phase of the project is assessed to USD 10.9 million during three years. The foreign currency part is 86%.

FIGURE 4-6 NACALA PORT TRANSPORT SYSTEM



Financing agreements with Canada, France and Portugal and the Bank of Mozambique have been signed for the implementation of Project No. 2.5.5, Rehabilitation of the Nacala-Malawi Border Railway, 615 km. The secured funds cover the first phase of the project, rehabilitation of the section Nacala-Nampula (200 km) and some parts of phase 2.

A consortium has been established for the rehabilitation works consisting of two French companies and one Portugese company. Mobilization started in July, 1983, and the rehabilitation works are going on.

Additonal funds are needed for the implementation of the second phase of Project No. 2.5.5.

Concerning Project No. 2.4.2, Supply of Railway Rolling Stock for Malawi Railways, see Chapter 4.4.2, Beira Port Transport System.

Concerning roads, terms of reference for feasibility and engineering studies of the Mangoche-Mozambique Border - Mitande road (Project No. 1.4.1) have been prepared. Regarding Project No. 1.8.6, Rehabilitation of the Road Lusaka-Chipata, Denmark is considering financing of an engineering study. ADB and USAID have expressed interest in financing the works.

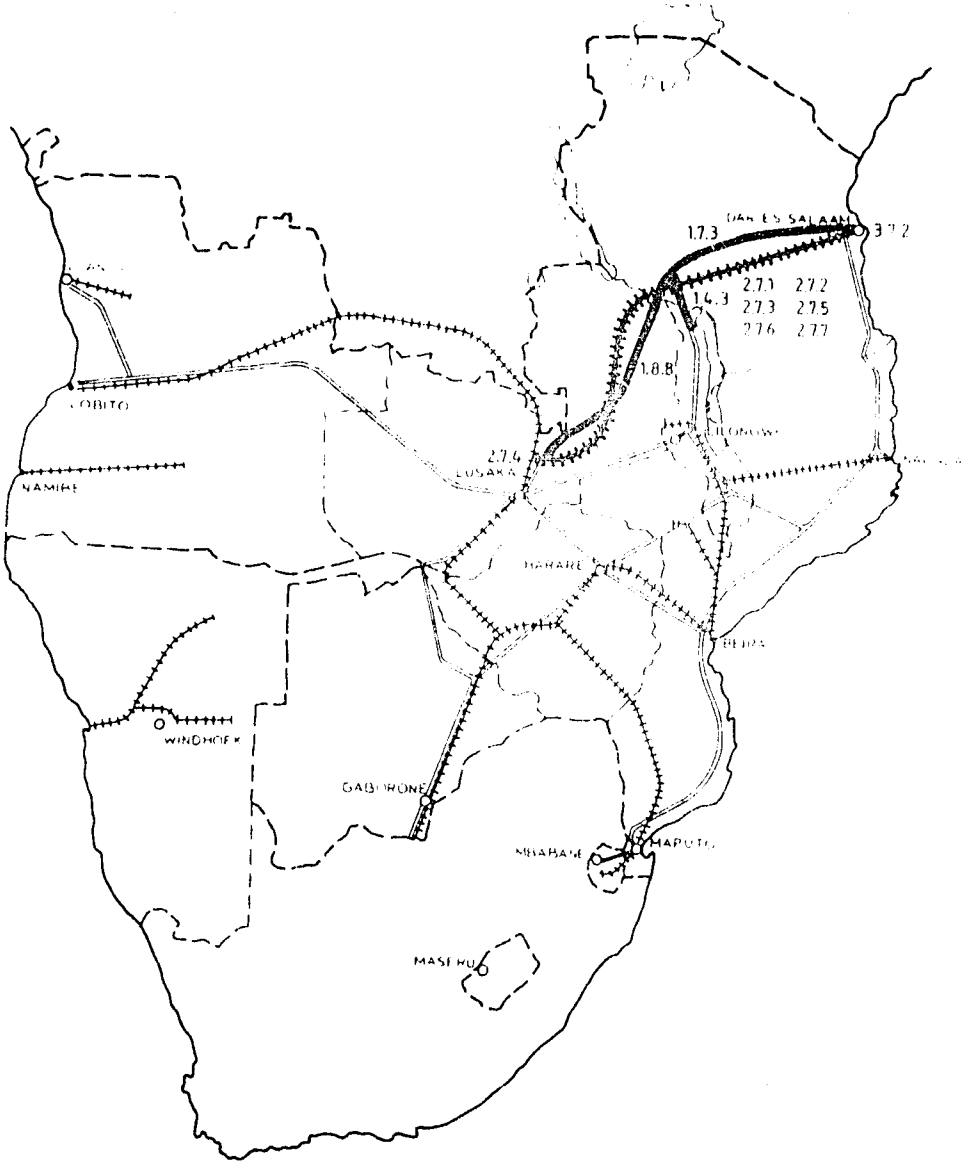
The costs for implementing all projects are estimated to US dollars 278 million out of which 37 per cent has been secured and another 7 per cent is being discussed with potential financiers.

4.4.4 Dar es Salaam Port Transport System

The Dar es Salaam Port Transport System includes Dar es Salaam Port, TAZARA, Tanzam Highway and the road link from Malawi to Tanzania Highway (see Figure 4-7).

Project No. 3.7.2, Development of the Port of Dar es Salaam, includes several sub-projects.

FIGURE 4-7 DAR ES SALAAM PORT TRANSPORT SYSTEM



The port has good prospects for container traffic. It does not, however, offer suitable facilities for the handling of containers. Therefore the Tanzania Harbours Authority (THA) proposes to convert three general cargo berths into a container terminal. The THA proposes to equip the berths with container handling equipment viz, tractor/trailer units, two gantry cranes and yard equipment. The container handling equipment is required immediately. Another very urgent project which should be seen in this context is the paving of roads and open storage areas. The bitumen surfacing has deteriorated to an extent that it is causing considerable damage to mobile equipment. The conditions are worsened by the use of heavy container machinery. Sweden has offered to finance the rehabilitation of Berths 1-8 (Sub-project 11, study and implementation).

Another important project is the construction of a Grain Terminal with a 30 000 tonnes storage capacity, which will be financed by the Netherlands.

The Kurasini Petroleum Products Terminal needs a major rehabilitation and the fire fighting system must be renewed. The rehabilitation includes civil works, electrical and pipeline works. Fire fighting pumps and other equipment will probably be procured through bilateral aid from the Scandinavian Countries.

The project also contains an extensive technical assistance and training programme which will include approximately 200 man-months distributed on areas such as

- Maintenance of cargo handling equipment;
- Staffing of Bandari College; and
- Technical assistance in the handling of containers and the improvement of management information system.

The above projets are supported by the World Bank but considerable co-financing from other sources will be needed. At a World Bank meeting with prospective co-financiers in Paris in May this year some clarification on the degree of commitments by the parties, scope of work and timing was reached.

In consequence with the projected traffic growth the THA Development Programme also considers the improvement of the entrance channel to allow large ships, particularly container and RO/RO vessels to pass the channel at all tides. This project is costed to about US dollars 45 million.

Seven projects relate to improvements of the TAZARA railway line and its operations. Dossiers for each of the revised projects have been prepared by the Technical Unit of SATCC for a Donors Conference.

A 10-year investment programme has been prepared. Of first priority to be implemented or initiated in the first phase 1985-88, are the following projects:

P 2.7.1, Track Rehabilitation
- rehabilitation of quarries
- introduction of mechanized maintenance;
- rail burns repairs;

P.2.7.2, Repowering and Supply of Locomotives
- repowering of locomotives

P 2.7.3, Supply of Wagons to TAZARA

P 2.7.5, Supply of Trolleys, Trailers and Mechanical Equipment to TAZARA;
- trolleys and trailers
- handling equipment for goods depots
- rescue crane and rerailing equipment
- wheel lathes
- mechanical equipment for workshops

P 2.7.6, Acquisition of Signalling and Communications Equipment to TAZARA
- installation of solar power panels;
- back-up HF radio system; and
- replacement of teleprinters; and

P 2.7.7, Technical Assistance and Training.

The second phase , covering years 1988/89-1990/91, includes the following projects:

P 2.7.1, Track Rehabilitation,
- stabilization of landslide sites;

P 2.7.2, Repowering and Supply of Locomotives;
- Supply of locomotives

P 2.7.4, Terminal Facilities at New Kapiri Mposhi Station;

P 2.7.6, Aquisition of Signalling and Telecommunications Equipment - installation of train stop devices.

The third phase , 1991/92-1994/95, includes the following projects:

P 2.7.1, Track Rehabilitation,
- welding scheme

P 2.7.6, Acquisition of Signalling and Telecommunications Equipment,
- feasibility study on the future telecommunications system; and
- track circuiting at intermediate stations.

The implementation of TAZARA projects has the highest priority for regional purposes. ADB, EEC, Austria, CIDA, DANIDA, Federal Republic of Germany, Italy, SIDA, and Switzerland have already been approached for funds.

Concerning the Tanzania highway, rehabilitation is urgently required on various sections both in Tanzania and Zambia. On the Tanzanian side (Project 1.7.3) studies have been completed, while in Zambia (Project 1.8.8) studies are expected to start shortly. The Malawi - Tanzania link is undergoing temporary repairs, and financing for engineering of the permanent link has been secured from EEC.

The costs for implementing all projects are estimated to US dollars 381 million out of which 24 per cent is secured. Further 36 per cent is being discussed with potential financiers.

4.4.5 Lobito Port Transport System

The Lobito Port Transport System includes the Ports of Lobito and Luanda, the Benguela Railway and the road connecting Zambia and Angola (see Figure 4-8).

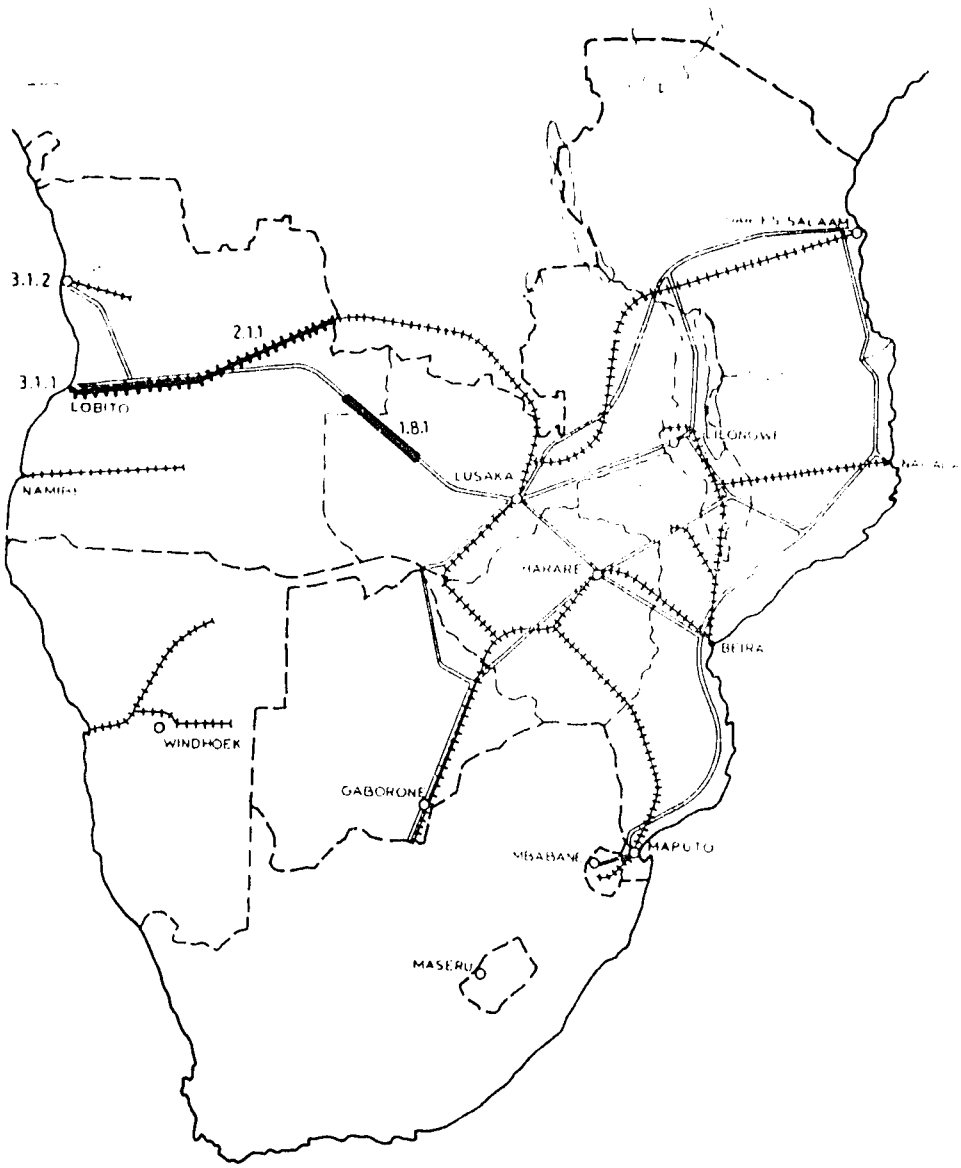
Project No. 3.1.1, Port of Lobito Masterplan, is in progress. A Preliminary Report was submitted in September, 1983. This study includes all the basic study activities necessary to define the development potential of the port. Also proposals for short term and long term improvements are evaluated. The Development Plan which comes next shall include the detailed plans for the selected port development scheme after approval by the Angolan Government. SATCC/TU has reviewed the Report and recommended that the detailed work on the Development Plan is continued soonest.

The Government of Angola attaches highest priority to the development of the Port of Luanda, Project No. 3.1.2. The most urgent sub-project is the planning of a container and RO/RO terminal. Therefore terms of reference have been drafted for submittance to prospective financiers. The project comprises not only civil works and equipment but also a substantial technical assistance component.

Other important sub-projects in the port of Luanda are:

- construction of a grain terminal;
- modernization and enlargement of the electrical system of the port; and
- construction of canteen facilities for the workers.

FIGURE 4-8 LOBTIO PORT TRANSPORT SYSTEM



The Rehabilitation of the Benguela Railway (Project No. 2.1.1) is an ongoing project. Acquisition of rolling stock, extension of the CTC-system, rehabilitation of the track, modernization of old wagons and coaches, acquisition of mechanical equipment for operations and services, technical assistance, completion of workshop programmes and acquistion of stocks are included in the plans.

It should be noted that the Benguela Railway is expected to carry 1.4 million tonnes in 1987, 2.1 million tonnes in 1990 and 2.8 million tonnes in the year 2000.

Financing is being sought for the remaining parts of the projects. A project description has been prepared and submitted to ADB for consideration.

The cost for implementing the projects are estimated to US dollars 210 million out of which 16 per cent has been secured.

4.4.6 Intra-Regional Surface Transport Projects

The five transport systems described above aim at securing good access to the regional ports serving all member countries.

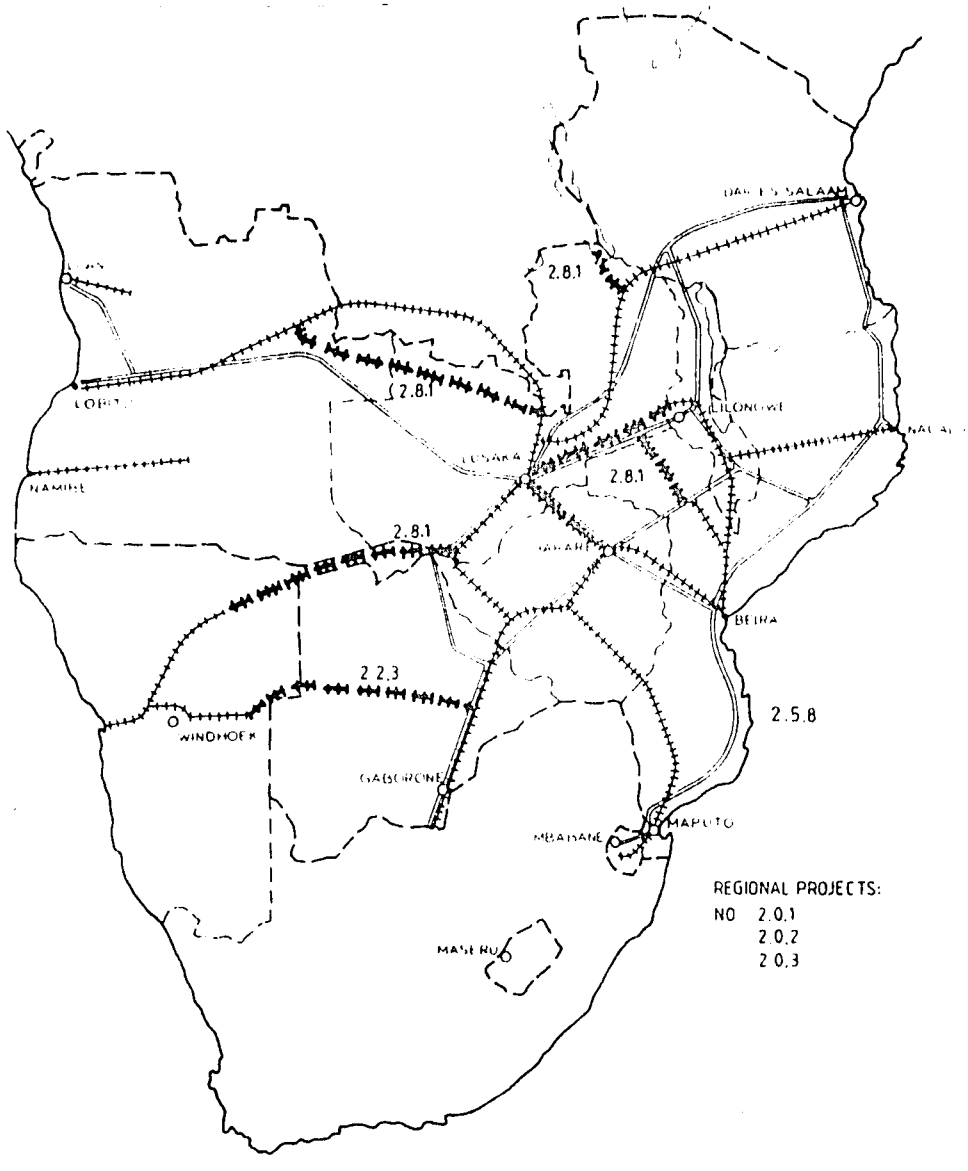
The intra-regional surface transport projects described below form, together with the port transport systems, transport networks which serve all transport needs of the region, both internal and external. The intra-regional projects include also the future railway and road links to Namibia (see Figures 4-9 and 4-10).

An intra-regional water transport system serving Malawi, Tanzania and Mozambique can be established on Lake Malawi. Project No. 3.7.1, Development of Navigation on Lake Malawi/Niassa, aims at achieving a system of shipping lines for goods and passengers linking the three countries. Terms of Reference for the project have been approved and Denmark has been approached for financing. DANIDA has shortlisted consultants for the study and some of them have been visiting the countries concerned.

A Feasibility Study for the Trans Kalahari Railway Project, No. 2.2.3, financed by the Government of Botswana, is about to be completed.

To complete the change over to roller bearings in Mozambique (wagons) a new Project, No. 2.5.8, has been included in the SATCC Programme of Projects.

FIGURE 4-9 INTRA REGIONAL RAILWAY TRANSPORT PROJECTS

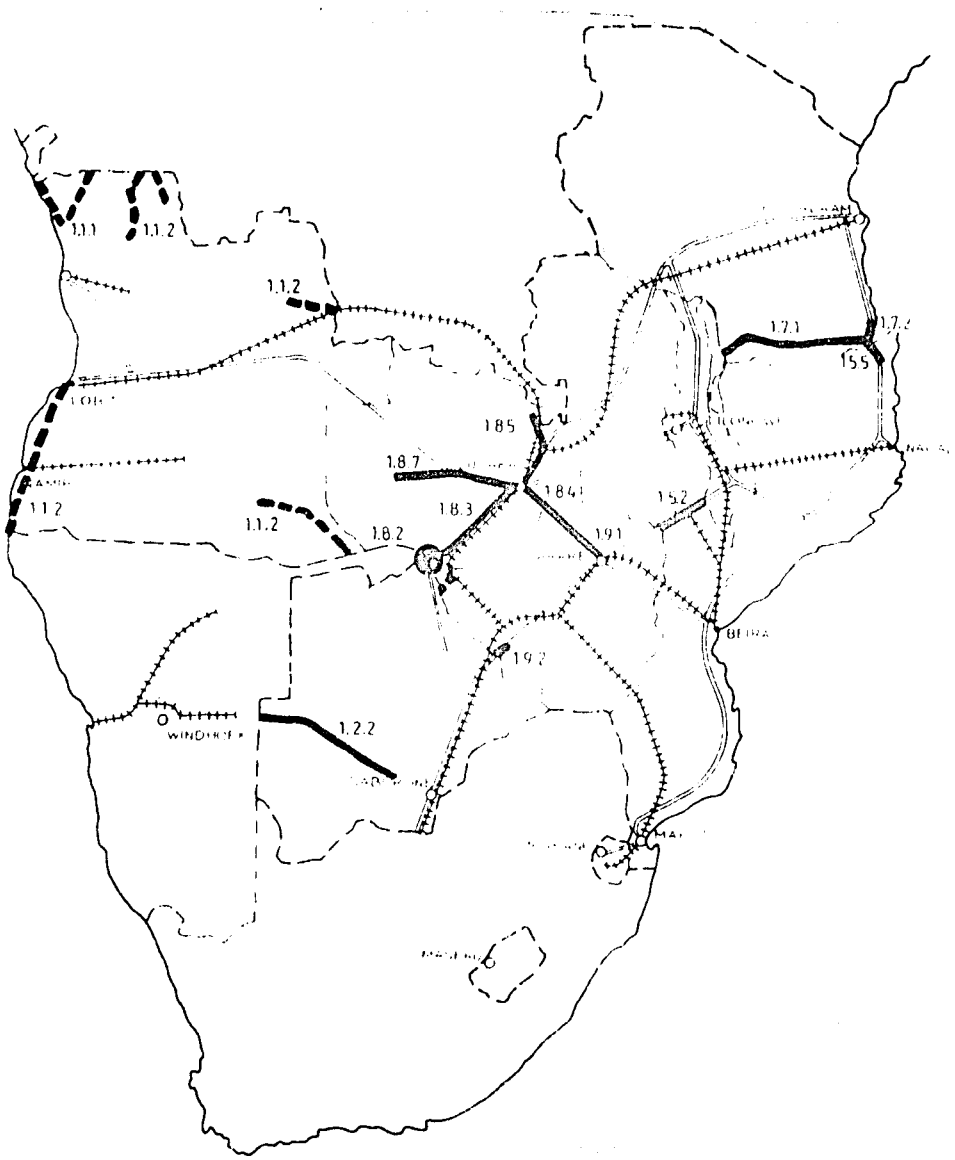


Terms of reference for Project No. 2.8.1, a rail link from TAZARA to the Mpulungu Port, Lake Tanganyika, are being prepared financed by ADB. General terms of reference for the rest of Project No. 2.8.1, Feasibility Study for New Rail Links connecting Zambia with Neighbouring Countries and with Ports, have been prepared. Financing is being sought.

The intra-regional road projects consist of studies as well as implementation projects (see Figure 4-10). Most roads are parts of the regional road network as described in Section 4.1. The most important road links from the regional point of view are Lusaka - Harare (Projects No. 1.8.4 and 1.9.1), the section Zimbabwe Border - Tete - Malawi Border of the Harare Blantyre road (Project No. 1.5.2), the Unity Bridge and access roads between Mozambique and Tanzania (Project No. 1.5.5) and the Lusaka Livingstone road (Project No. 1.8.3). Rehabilitation works are in progress on these roads except Project No. 1.5.5 but additional financing is needed.

The total costs for implementing all projects are estimated to US dollars 530 million out of which 9 per cent has been secured and another 9 per cent is being discussed with potential financiers.

FIGURE 4-10 INTRA REGIONAL ROAD TRANSPORT PROJECTS



CHAPTER 5 PLAN AND IMPLEMENTATION PROGRAMME FOR CIVIL AVIATION

This Chapter summarizes the situation with regard to the main airports in the Region. It further contains a summary of the continued co-ordinating activities within the field of civil aviation through further meetings of the Working Groups of Directors of Civil Aviation and Senior Executives of the Airlines. It emphasizes the urgent need for actions in order to improve the present training situation and to cover the implementation of capital investment projects.

5.1 Main Regional Airports

In the SADCC Region a total of 458 aerodromes are open for public use. The number of airports which have been designated to the International Civil Aviation Organization (ICAO) as international aerodromes is, however, more limited. There are in the Region in all 29 airports of this type as follows:

Angola	2	Swaziland	1
Botswana	5	Tanzania	2
Lesotho	1	Zambia	6
Malawi	4	Zimbabwe	6
Mozambique	2		

Of primary interest are the international airports serving the capitals in the Region, which are responsible for the main part of the intra-regional network and often also for the intercontinental operations. The present standards of these airports vary considerably from airports capable of accomodating wide bodied aircraft to smaller ones which can only handle B-737 or Fokker F-28 or F-27. In many cases not only the runways but also the passenger terminal buildings or the navigation aids are a limiting factor. There has, however, been or will be in the near future a considerable amount of development in new major airports.

In Angola the well equipped Luanda City Aerodrome is able to handle the biggest wide bodied aircarft B-747 and DC-10.

In Botswana a new airport is under construction which will enable operations with wide bodied airplanes. This airport is expected to be operative in October, 1984.

In Lesotho the existing 1 300 m runway of Maseru can only accept aircraft up to HS748/F-27 size. As this airport cannot be upgraded, construction has started on a new airport which is expected to be in operation in 1986. With a runway of 3 200 m and the planned taxiways and apron Boeing 707 or 727 can be handled. Possible future expansion of the runway is envisaged.

In Malawi's capital, Lilongwe, the new Kamuzu International Airport was inaugurated on the last day of August, 1983. This new airport is capable of handling Boeing 747 and DC 10 type aircraft.

In Mozambique the Maputo International Airport has today the capacity to serve wide bodied aircraft. The airport in Beira is also in use for intra-regional traffic. Boeing 707 and 737 size aircraft can be served.

In Swaziland the existing Matsapha Airport located about 30 km south-east of Mbabane is under reconstruction. After termination of the first phase of the rehabilitation in 1985, handling of B-737 size aircraft with full payload will be possible and the present time restrictions can be uplifted.

In Tanzania the Dar es Salaam International Airport has the capability of handling wide bodied aircraft on a 24 hour basis. A passenger terminal building has been completed in 1984.

In Zambia, at the Lusaka International Airport which was established in 1967, the passenger handling facilities, and communications equipment in particular, are beginning to show apparent inadequacy due to increase in air transport demand. The present runway, 3 962 m long and 46 m wide, can occasionally accept wide bodied aircraft. For regular operations widening and resurfacing of run and taxiways, expansion of the passenger terminal building and renewal and improvement of radio communication facilities will be needed.

In Zimbabwe the one runway on Harare International Airport, 4 720 m long and 44 m wide, allows for B-707/DC-10 size aircraft. Passenger handling apron and capacity reserves of terminal facilities are soon reaching their limits. Plans are indicated for development in the second half of the 1980's of a two runway system with adequate passenger handling facilities.

5.2 Operational Co-ordination

For operational co-ordination and implementation of air transport policies within the SADCC Region two working groups were formed in July 1982:

- one comprising the Directors of Civil Aviation of each Member State, (Project No. 0.0.2(5); and
- another of Senior Executives from each of the National Airlines (Project No. 0.0.2(6).

At the first meetings of the two groups the reports on Project No. 4.0.1, Regional Co-operation in Flight Testing of Navigational Aids, and No. 4.0.2, Feasibility Study on Cooperation in Civil Aviation, were discussed and accepted.

Project No. 4.0.1(2) Tanelec Flight Calibration Service, Arusha, is a continuation and follow up of the studies included in Project 4.0.1. The aim of the project is an upgrading of the already existing Flight Calibration Unit in Arusha. Norway/UNDP have been approached for financing of the project.

In continuation of Project No. 4.0.2, seven new regional projects (Projects No. 4.0.3 - 4.0.9) were identified and approved for the regional programme of projects by the Committee of Ministers in Lusaka, March 1983.

A proposal for schedules integration and route structure coordination was presented by the SATCC Technical Unit. It was agreed that in order to regularly and continously work with matters related to harmonization of regional route programme a working sub-group should be formed. This group - called "Air Services Schedules Co-ordination Group" - consists of two senior representatives from the schedules planning function of each of the national airlines. The group meets regularly two times a year to coordinate the respective traffic periods.

The first meeting of the Air Services Schedules Co-ordination Group was held in Lusaka in March and the second meeting in Harare in July 1984.

As a result of the discussions in the meetings improvements in the regional connection system have been achieved. It has also been agreed that the carriers should adopt identical change - over dates for the summer and winter traffic periods, viz 1st April and 1st November of each year.

Concerning Project 4.0.3, Study on Joint Utilization of Maintenance Facilities for Aircraft, SATCC was informed that the African Development Bank is financing a study in this respect covering the whole of Africa. It has been decided that concerning that part of the ADB Study that is related to the SADCC region, the Technical Unit shall be the co-ordinating body.

A third joint meeting of the SATCC Directors of Civil Aviation and Airline Executives was held in Harare in June 1984, followed by a separate meeting of the Airline Executives. This meeting discussed among other things the establishment of an additional working sub-group to deal with joint aircraft maintenance to consider among other matters Project No. 4.0.3 mentioned above. The meeting also discussed the Draft Final Report on Project No. 4.0.8, "Updating of 1980 Year's ICAO Study of Aeronautical Telecommunications", presented by ICAO.

The Report on Project No. 4.0.9, "Assessment of the Regional Airworthiness and Surveillance Services", was presented by the Technical Unit and it was decided to establish an Airworthiness Advisory Committee.

The two feasibility studies, Projects No. 4.0.1 and 4.0.2, have been sponsored by Australian funds.

The Australian Development Assistance Bureau has covered the expenses of the meetings of the Groups of Directors of Civil Aviation and Senior Executives of the Airlines.

Australia has announced that the support for the two groups of experts within civil aviation will be discontinued in the end of June 1985.

At the joint meeting of the two civil aviation groups in June 1984 in Harare, this situation was discussed. It was resolved to continue efforts to obtain aid for the funding of future meetings. However, in the event that this is not forthcoming it was resolved that the following procedures should apply:

a) The host country will offer conference facilities free of charge.

b) The Airlines of the Region will transport the delegates of the Conference free of charge.

c) The host Airline will negotiate for favourable hotel rates for the Conference participants.

d) The Conference participants will be reponsible for their hotel expenses.

This procedure does not cover the technical assistance needed for the preparations for the meetings of the groups. It is assumed that the Technical Unit will continue to support the groups.

The same procedure will have to be used for the financing of the several sub-groups established in civil aviation. It is supposed that the Technical Unit supports the work in the different sub-groups and assists in the co-ordination of the regional operational activities in civil aviation.

5.3 Training

There is a considerable shortage of trained and experienced staff both in the civil aviation administrations and in the airlines organizations. The training facilities in the region are also generally inadequate.

It is therefore very important and a matter of great urgency that Project No. 4.0.6, Updating of the 1974/75 Civil Aviation Manpower and Training Requirements Survey, can be started as soon as possible. In this project an analysis of the capacity of the training schools and other training facilities will be included as well as those for "follow-on" training which are now available in each of the SADCC States. In the study an assessment will also be made of the manpower and training requirements of each of the SADCC States and relate them to the training schools and other facilities available in the Region.

Financing for this project is urgently needed.

5.4 Capital Investment Projects

The capital investment projects include upgrading of airports and navigation aids and re-equipment of airport rescue and fire services.

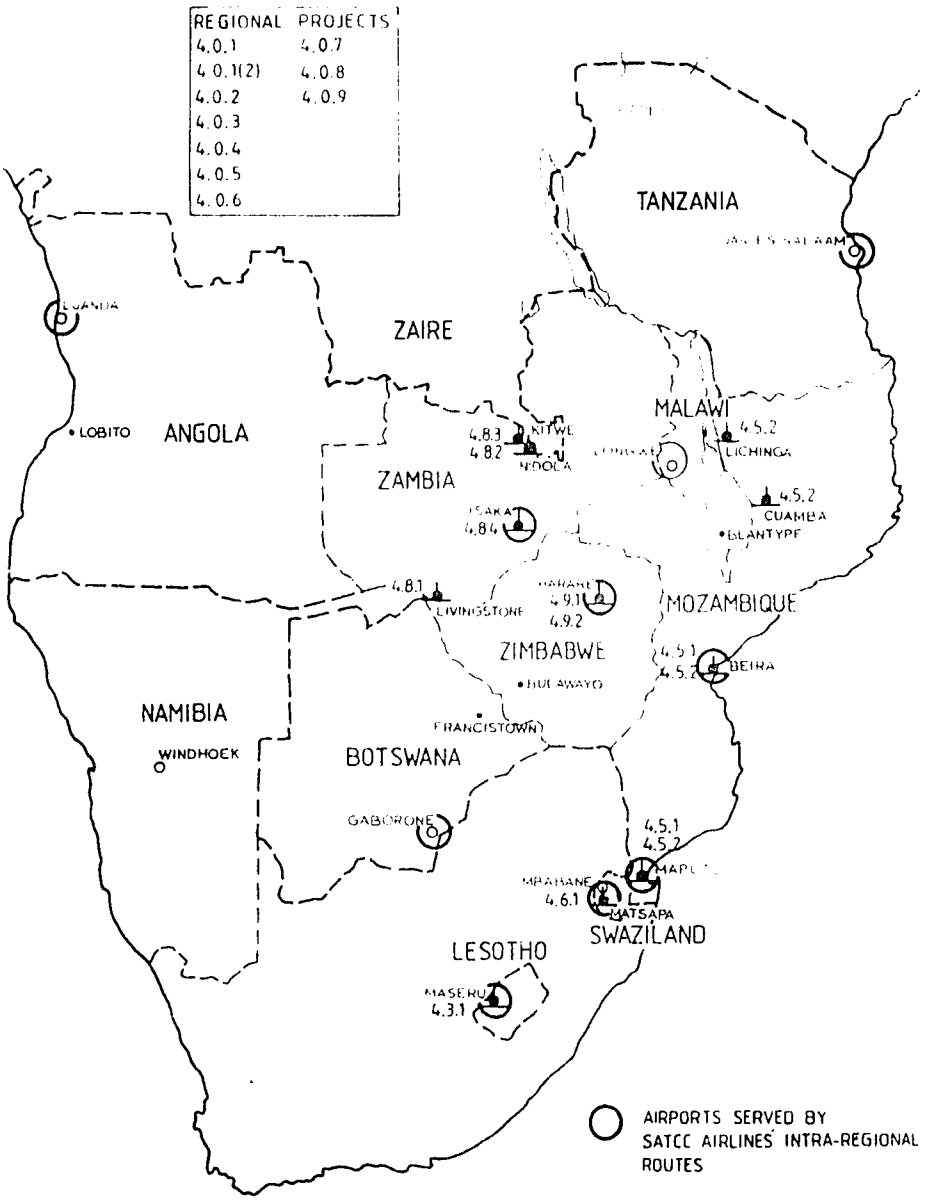
For location of the projects, see Figure 5-1, Civil Aviation Projects.

One of the regional projects, Project No. 4.0.8, Updating of 1980 Years' ICAO Study of Aeronautical Telecommunications, is about to be completed. This study which is financed by ICAO assesses the need for additional telecommunications equipment or new equipment to replace the existing old and inadequate equipment in all nine SADCC States.

In Lesotho construction of a new airport at Maseru (Project No. 4.3.1) was started early in 1983. A new terminal building, including a control tower and an administration block, will also be constructed. Furthermore re-equipment of fire fighting and rescue services is needed.

Financing of Project No. 4.3.2, Acquisition of a New Aircraft for Lesotho Airways, is being considered by SIDA. An extended project description has been prepared.

FIGURE 5-1 CIVIL AVIATION PROJECTS



In Mozambique two projects are under way. Project No. 4.5.1 includes procurement and installation of new lead-in and runway lighting systems and rehabilitation of the stand by power supply units at Maputo and Beira International Airports. The second project (Project No. 4.5.3) concerns installation of instrument landing systems at Maputo and Beira airports as well as rehabilitation and upgrading of navigation aids for en-route and terminal areas.

In Swaziland the aim of Project No. 4.6.1 is to upgrade the Matsapha Airport to enable handling of medium range aircraft. A new maintenance building has already been completed. Airside work is now in progress for construction of a new runway, 2 600 m long, and the first phase of the project has been completed in mid 1984. The whole project with terminal and operation buildings, navigation aids, communications and landing equipment etc. is expected to be completed in 1989. The control tower, a training and a small telecommunications component, are financed by EEC and an agreement with France for financing of navigation aids, communications and landing equipment has been signed.

In Zambia four projects are being considered and financing for studies is being sought. Project No. 4.8.1 concerns reinforcement of the runway and extension and renovation of terminal buildings at Livingstone Airport. A second Project, No. 4.8.2, is construction of a new passenger terminal building to replace the old, inadequate one and installation of an instrument landing system at Ndola Airport in order to improve regularity in operations. The third Project, No. 4.8.3, concerns improvement of Southdowns Airport (Kitwe), i.e. reconstruction and extension of the present runway, construction of terminal, air traffic control and fire services buildings and installation of an instrument landing system and runway lighting. The last and fourth Project, No. 4.8.4, concerns construction of a new hangar for heavy maintenance of wide-body aircraft at Lusaka International Airport. The present hangar is of a size that only minor maintenance checks can be carried out. The project is considered essential for the further planned development of the maintenance facilities towards complete self-reliance.

In Zimbabwe financing of a feasibility study (Project No. 4.9.2) is being sought for a new airport building with access road systems, taxiways and aprons for Harare Airport. Rehabilitation of the present facilities is becoming more and more urgent as they will soon be saturated and inadequate.

The total cost for the civil aviation projects is estimated at US dollars 99 million of which 63 per cent have been secured and another 7 per cent is being discussed with potential financiers.
Details regarding project status and financing are given in Annex 1, Table 8.

CHAPTER 6 PLAN AND IMPLEMENTATION PROGRAMME FOR TELECOMMUNICATIONS

The development of the regional telecommunications system will be outlined in the subsequent sections with an emphasis on the first half of the decade. The implementation of the ambitious improvement plans requires a great deal of operational co-ordination and sizable investments.

6.1 Regional Plan and Objectives

Inter-African planning of the telecommunication services has been dealt with by the Pan-African Telecommunications Union (PATU) and the International Telecommunications Union (ITU). A long term plan conceived a number of years ago aims at providing Africa with a high capacity telecommunication network, PANAFTEL. The main emphasis in the PANAFTEL plan is the provision of a terrestrial network. The SADCC countries have firmly committed themselves to the implementation of the plan. Based on this and the development programmes of the Telecommunications Administrations, the objectives for the decade can be laid down as follows:

- establishment of the terrestrial PANAFTEL links;
- installation of a satellite earth station in all countries by 1985;
- extension of international subscriber dialling to all countries and main cities;
- self-reliance of the region with regard to interregional teletraffic;
- improvement of the reliability of service to good international level;
- possibility of transmission of TV programmes;
- provision of sufficient numbers of local staff for planning, operations, and maintenance.

6.2 Operational Co-ordination

Due to the very nature of the worldwide telecommunications system, extensive international co-operation is a prerequisite for efficient service. Co-ordination of operational matters aims at efficient running of present services and preparations for new services. The main items for co-ordination are as follows:

- co-ordination and exchange of plans and studies;
- exchange of statistics and data on existing plant and facilities;
- exchange of traffic forecasts;
- maintenance, routing and temporary restoration;
- tariffs and international accounting rates;
- radio frequency co-ordination;
- regional training facilities.

The practical arrangements include bilateral contacts, working groups, ad hoc meetings, regional and global conferences, seminars and studies.

Most of the regional co-ordination takes place through the annual SATA Conference and the Annual Regional Telecommunications Conference for the Eastern and Southern Subregions of Africa. SATCC will continue to support these well established conferences channelling the necessary assistance through these fora and especially the SATA Conference.

Multilateral meetings will be required between Zambia and Angola for the definition of the Panaftel link Luene Zambezi, and between Malawi, Mozambique and Zimbabwe for the decision on the link Tete-Blantyre and optimal route to Zimbabwe.

For the near future the specific tasks of the SADCC countries include adoption of new routing plans, improvement of traffic data collection and forecasting, satellite programme harmonization and preparations for international subscriber dialling.

Co-ordination with International Telecommunications Union, Pan-African Telecommunications Union, Economic Commission for Africa and INTELSAT will be maintained.

6.3 Training

Severe staff shortages are experienced by some telecommunications administrations, particularly in Mozambique. The shortages have an adverse effect on the regional development, requiring concerted training efforts.

The telecommunications administrations have requested SATCC to launch a training course on national network planning. Financing of this project No. 0.0.3(4) has been pledged by Italy, Canada and Sweden.

Another specific requirement is for training of the satellite earth station staff. For this fellowships would be most welcome.

6.4 Capital Investment Projects

The projects of the regional programme of SATCC fall mainly into the following categories:

- rehabilitation/upgrading of existing facilities,
- regional microwave radio relay system,
- satellite earth stations,
- international telephone switching centres and telex exchanges.

The total costs of the projects amount to US Dollars 320 million of which 48 per cent have been secured, and another 7 per cent are being discussed with financiers. For further details see Annex 1, Table 9.

6.4.1 Rehabilitation/Upgrading

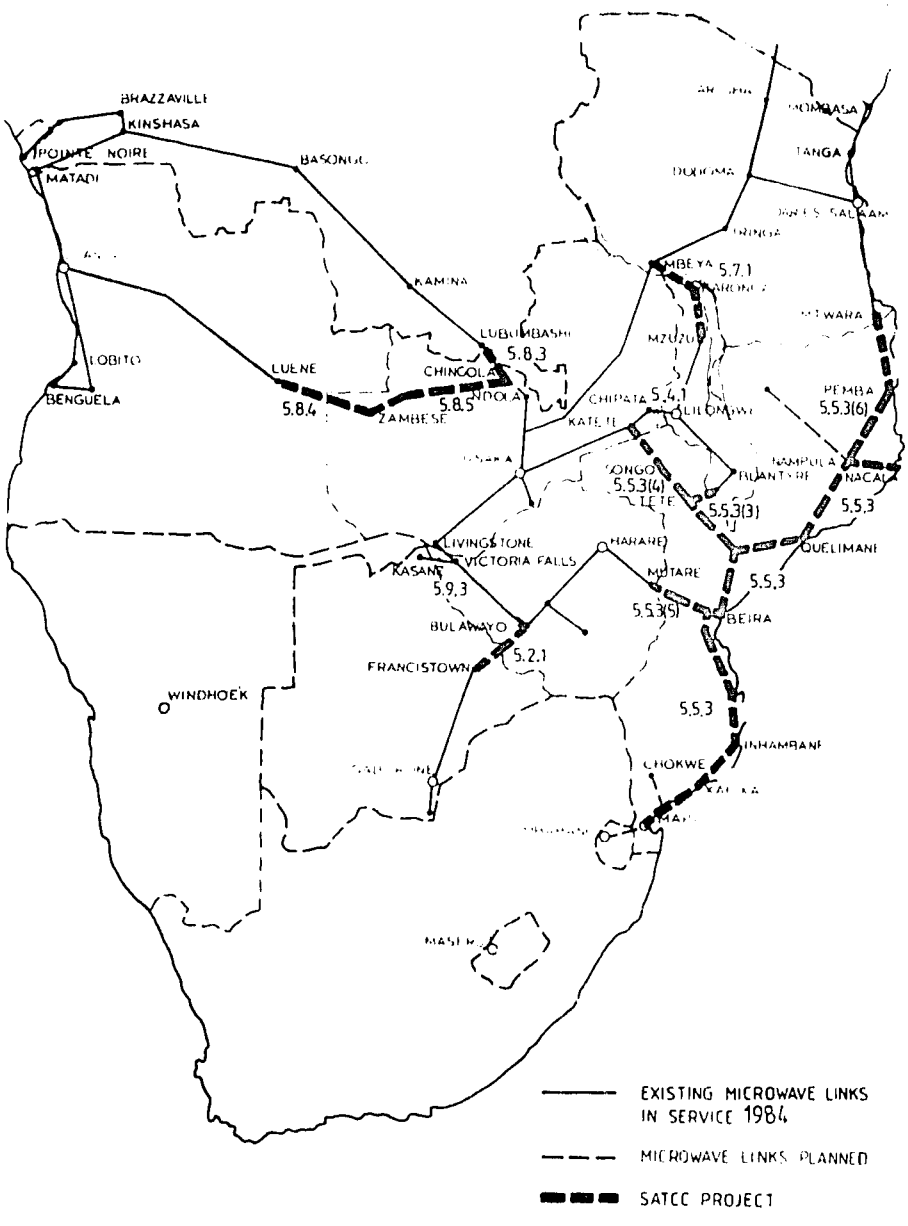
The only outstanding rehabilitation project, Project No. 5.5.4, upgrading of the open wire carrier system Beira - Mutare has been deferred for the time being. Now, with the setting up of the small capacity UHF Radio Link, Mutare - Chimoio - V. Xiluvo by the end of 84, this project can be cancelled.

It is to be noted, however, that successful implementation of the regional programme is not possible without upgrading and rehabilitation of certain existing systems. This applies to the establishment of international subscriber dialling and especially to Project No. 5.5.2, Mozambique National Telecommunications Development Project with connections toneighbouring countries, which is not technically viable without extensive rehabilitation of the present troposcatter links, switching equipment and to some extent even local line plant.

6.4.2 Regional Microwave Radio Relay Systems

The regional Microwave Links Projects have been presented on Figure 6-1.

FIGURE 6-1 MICROWAVE TELECOMMUNICATION LINK PROJECTS



The implementation has been completed for the links: Lilongwe-Chipata, Project No.5.4.1, allowing the establishiment of IDSD between Malawi and Zambia; and Bulawayo-Livingstone, Project No. 5.9.3. The implementation has also been completed for the Francistown - Bulawayo link, Project No. 5.2.1, which connect Botswana to Zimbabwe, and through the already implemented Project No. 5.9.3, to the PANAFTEL network.

The link in the North Western Province of Zambia, Project No. 5.8.5, is being implemented. Expected RFS by mid 1985.

The projects in tendering or evaluation phase, for which financing has been secured, are: phase I of Project No. 5.5.3, Mozambique; Project No.5.6.3, Swaziland; Project No. 5.7.1 Mzuzu-Mbeya, Malawi-Tanzania.

Provided that the above mentioned projects proceed as planned, the most urgent terrestrial requirements will be covered.

Financing will be required for the following projects: phase II and III of Project No. 5.5.3, Mozambique; Project No. 5.8.4, Zambezi-Luene, Angola-Zambia.

Project No. 5.8.3 regarding the cross-border section Zambia-Zaire is still outstanding, depending on the development in Zaire.

6.4.3 Satellite Earth Stations

The satellite earth station programme extends only up to 1987 since the telecommunications administrations do not have definite plans for the late 1980's.

The programme has been progressing very well during the last two years with the stations in Swaziland and Lesotho already completed and in service. The station in Zimbabwe, (Project No. 5.9.2), is expected to be commissioned by the end of 1984 and the National/Regional Satellite Communication System of Mozambique (Project No. 5.5.1) early 86. Both are already fully financed and under implementation. The new standard A antenna in Tanzania, which has been planned to meet the traffic requirements, is now proposed as a new SATCC Project (No. 5.7.3). The implementation schedule has to be co-ordinated with the extension of the International Switching Centre (Project No 5.7.2).

The projects, for which financing is required,are:

- extensions of existing Antennas (Zambia) ;
- second antennas to the existing stations (Angola, Tanzania, Zambia)

- second station (Angola).

The programme is presented in Figure 6-2.

In order to achieve improved interconnectivity amongst the different types of stations, the later extensions should be carefully co-ordinated and harmonized and shared use of the existing stations examined. Because of the complexity of the problem SATCC has proposed a study (Project No. 5.0.2) for which financing has been obtained.

6.4.4 International Telephone Switching Centres and Telex Exchanges

New international telephone switching centres or extensions will be provided in Zambia (Project No. 5.8.1), Zimbabwe (Project No. 5.9.1), Swaziland (Project No. 5.6.2), Mozambique (Project No. 5.5.3 (1) and 5.5.3 (7)), Tanzania (Project No. 5.7.2), Botswana (Project No. 5.2.2), Lesotho and Angola (Project No. 5.1.2). Financing has been secured for all but Tanzania.

The provision of these switching facilities open up quite comprehensive international subscriber dialling at least between the capital cities by 1986/87.

The telex system is mostly operating in automatic mode already. Assistance is sought for the implementation of Beira Telex Exchange (Project No. 5.5.3 (2), which is linked with the improvement of telecommunications services to the Mozambican ports. In Angola improved facilities will be provided within Project No. 5.1.2 financed by the African Development Bank.

FIGURE 6-2 SATELLITE EARTH STATIONS IMPLEMENTATION PROGRAMME

CHAPTER 7 FINANCING AND IMPLEMENTATION

This chapter includes a review of financing and implementation of the Regional Programme of Projects.

7.1. Implementation costs and financing

The financial status for the projects included in the regional programme has been updated to September 1984. As a rule the implementation costs for capital investment projects are recorded only when feasibility studies or similar studies are available as background documentation for approaching a financier for funding the implementation works.

Regarding projects, where no project revisions have taken place the cost figures in 1984 prices correspond to the previous cost figures in 1983 prices all indicated in US Dollars. This means that generally the inflation in the past year regarding project costs is supposed to be counter-balanced by the increase in the exchange rate of US dollars.

The total costs for the 114 projects are at present estimated to US dollars 3172 million. Financing is fully secured for 33 projects and partly secured for 25 projects. This financing amounts to US dollars 718 million or 23 per cent of total costs for all projects of the regional programme. Discussions with financiers are in progress regarding 47 projects. The financing being discussed amounts to US dollars 725 million or 23 per cent of total costs.

Compared with the situation just before the SADCC Lusaka Conference the number of projects being fully financed has increased from 29 to 33 and the amount secured is almost the same because projects completed which are excluded from the financial status, has counter-balanced the additional financing secured.

The number of projects now being discussed with financiers has increased from 28 projects to 47 and the amount being discussed from US dollars 340 million to 725 million.

Summaries of estimated implementation costs and the financial status of the transport systems are given in Table 1 and in Annex 1.

Table 1 : Programme Costs and Financial Status
US dollars millions

Programme	Estimated costs current prices		Financing			
	Total	Foreign currency	Secured		Under discussion	
			amount	%	amount	%
Operational coordination and training	20.4	20.4	10.1	50	6.9	34
Maputo port transport system	692	558	144	21	294	42
Beira port transport system	641	553	72	11	27	4
Nacala port transport system	278	218	103	37	19	7
Dar es Salaam transport system	381	308	91	24	137	36
Lobito port transport system	210	205	33	16	163	78
Intra-regional surface transport system	531	388	50	9	49	9
Civil aviation	99	83	62	63	7	7
Telecommunication	320	279	153	48	22	7
Total	3172	2612	718	23	725	23

Operational coordination and training projects are financed to 50%.

The Maputo port transport system is financed to 21 percent of the total costs. The financing of the track renewal for Botswana railway is being discussed with Canada. The financing of the Maputo port transport system under discussion amounts at present to 42% of the total costs (see Annex 1 - Table 2).

The Beira port transport system is financed to 11 per cent of total costs. Additional funds have been made available by Netherlands for Beira Port (see Annex 1 - Table 3).

The Nacala port transport system is financed to 37 per cent of total cost. This financing covers Nacala Port and the first phase of the rehabilitation of Nacala - Malawi Border railway (see Annex 1 - Table 4).

The Dar es Salaam port transport system is financed to 24 per cent. Financing has during the last year been secured for the major parts of the Dar es Salaam port. Financing is being discussed for another 36 percent of the total costs. A Donors Conference on TAZARA projects is planned to be held in Dar es Salaam.

The Lobito port transport system projects are financed to 16 per cent of the total costs. The development of Luanda port is in progress financed by local funds.

The costs of the rehabilitation of the Benguela railway are estimated to about US dollars 181 million. Only minor parts of the project (US dollars 18 million) have been implemented. The African Development Bank has been approached for financing (see Annex 1 - Table 6).

The intra-regional surface transport system projects are financed to about 9 per cent of total costs. The majority of these are road rehabilitation projects. There is one large project (1.7.1), the Mtwara - Songea - Mbamba Bay road in Tanzania, for which the cost is estimated to US dollars 335 million. The other projects are relatively small. Four projects are fully financed two projects are partly financed and financing for eleven projects is under discussion (see Annex 1 Table 7).

The implementation costs for Civil Aviation and Telecommunication projects are comparatively well covered by funds, 63 per cent and 48 per cent respectively (see Annex 1 Tables 8 and 9).

7.2. Implementation

Substantial progress in the implementation of the regional programme has taken place since the SADCC Lusaka Conference February 1984. Below follows an analysis of various categories of projects where there has been progress recently.

7.2.1 Operational Co-ordination and Training Programmes

The following Groups of Experts within the Operational Coordination Development Programme, Project No. 0.0.2, have been initiated:

(1) Road Infrastructure
(2) Road Traffic and Transport
(3) Meetings of Railway Administrations
(4) Spare Parts Task Group, Railways (proposed)
(5) Directors of Civil Aviation and

(6) Senior Representatives of Airlines
(7) Meetings of Port Administrations

One sub-project within the Training Development Programme, Project No. 0.0.3(3), Preparation of a Telecommunication Training Project for Mozambique, has been completed. Project No. 3.0.2, Port Staff Training Programme, is an ongoing study and Project No. 2.0.2, Study on Railway Training Programmes, is about to commence.

7.2.2. Completed Capital Investment Projects

Since the Lusaka Conference the following projects have been completed:

1.2.1 Nata - Kazungula Road, Botswana
4.9.1 Airport Rescue and Fire Service, Zimbabwe
5.2.1 Microwave Link Francistown-Bulawayo, Botswana
5.4.1 Microwave Link Lilongwe - Chipata, Malawi
5.9.3 Microwave Link Bulawayo - Livingstone, Zimbabwe /Zambia.

This brings the total number of completed capital investment projects up to ten as five projects have been completed previously:

2.5.2 Rehabilitation of the Border Station by Establishment of an Exchange Yard, Mozambique/Swaziland.
3.1.2 Re-equipment.
Sub-project of the Port of Luanda, Angola, Purchase of Fork Lift Trucks.
5.6.1 Earth Station, Standard B, in Swaziland.
5.9.4 Upgrading of Open Wire Carrier System Bulawayo - Francistown
5.9.5 Restoration of Open Wire Line and Carrier Equipment Harare - Lusaka

The total costs of the completed capital investment projects amount to US dollars 68,7 million.

7.2.3 Capital Investment Projects under Implementation

The following projects are under implementation and substantial disbursements have already been made. The actual disbursements are not known in most cases.

1.3.1 Mohale's Hoek - Quthing - Qachas Nek Road Lesotho
1.4.3 Road Link Karonga - Mbeya Malawi/Tanzania
1.5.2 Rehabilitation of the Zimbabwe - Tete - Malawi Road Mozambique
1.6.1 Rehabilitation and Upgrading of the Road Section Lomahasha - Siteki - Big Bend, Swaziland

1.8.3 Upgrading of Lusaka - Kafue - Livingstone - Kazungula Road, Zambia
1.8.4 Rehabilitation of the Kafue-Chirdundu Road, Zambia
1.9.1 Rehabilitation of the Harare - Chirundu Road, Zimbabwe
2.1.1 Rehabilitation of the Benguela Railway, Angola
2.2.1 Rehabilitation of the Main Railway Line, Botswana
2.4.1 Rehabilitation of the Salima-Southern Border Railway, Malawi
2.5.4 Rehabilitation of the Beira - Malawi Railway
2.5.5 Rehabilitation of the Nacala - Malawi Border Railway
2.7.2 Repowering and Supply of Locomotives to TAZARA
3.1.2 Development of the Port of Luanda
3.5.1
(3) Maputo Port Container Terminal
3.5.2 Increase in the Capacity of the Port of Beira
3.5.3 Container Terminal in Port of Nacala
3.5.4 Development of the Port of Dar es Salaam
4.3.1 New Airport at Maseru
4.5.1 Airport Lighting, Mozambique
4.5.2 Navigation and Landing Aids, Mozambique
4.6.1 Development of Matsapha Airport, Swaziland
5.1.2 Expansion of the International Telecommunications System, Angola
5.2.2 ITSC, Gaborone, Botswana
5.5.1 Satellite Communication System, Mozambique
5.8.1 Extension of International Transit Switching Centre, Zambia
5.8.5 Microwave Link in the NW-Province, Zambia
5.9.1 ITSC at Gweru, Zimbabwe
5.9.2 Earth Station Standard A, Zimbabwe

7.2.4 Completed Studies for Capital Investment Programmes

Several studies related to projects have been completed, and the projects are now ready for implementation:

1.3.2 Upgrading and Reconstruction of the Road Taung - Mokhotlong - Sani Top, Lesotho
1.3.4 Construction of a New Road Ramabanta - Semonkang - Sekate, Lesotho
1.3.5 Upgrading of the Road Mokhotlong - Oxbow, Lesotho
1.7.3 Rehabilitation of the Tanzam Highway in Tanzania
1.9.2 Upgrading of the road Plumtree - Botswana border, Zimbabwe
2.4.2 Supply of Railway Rolling Stock, Malawi
2.5.6 Study on Rehabilitation and Electrification of Railways in Southern Mozambique and Swaziland
2.7.1 Track Rehabilitation Tazara, Landslides Stabilization

3.5.2 (1) Increase in the Capacity of the Port of Beira, Rehabilitation Study
3.5.2 (2) Increase in Capacity of the Port of Beira, Entrance Channel Study
3.5.2 (3) Increase in Capacity of the Port of Beira, Master Plan Study
4.0.1 Study on Flight Testing of Navigation Aids
5.7.1 Route Survey and Appraisal Study of Microwave Link Malawi - Tanzania

7.2.5 Completed General Studies

Some General Studies have also been completed recently:

2.0.1 Railway Rolling Stock Study
2.0.3 Study on Exploitation, Marketing and Transportation of Minerals
4.0.2 Study on Co-operation in Civil Aviation
4.0.9 Assessment of the Regional Airworthiness Certification and Surveillance Services

7.2.6 Ongoing Studies

1.5.3 Rehabilitation of the Road Beira - Chimoio, Zimbabwe Border, Mozambique (Feasibility Study)
2.2.3 Trans-Kalahari Railway Study
2.3.1 Container Terminal with Customs Facilities, Lesotho
2.5.7 Feasibility Study on the Re-organization of Maputo - Matola Yards
3.1.1 Master Plan for the Port of Lobito
4.0.8 Updating of 1980 Years ICAO Study of Aeronautical Telecommunications

7.3. Status of financing.

Regarding the status of financing of the Regional Programme of Projects several projects are fully financed and for many other projects financing has been partly secured. For the remaining projects no financing has been secured.

Projects fully financed:

Included among the projects indicated as fully financed are projects concerning studies of capital investments possibly leading to proposals regarding capital investment projects.

0.0.1 Technical Assistance to SATCC Technical Unit
0.0.2(1) Group of Experts on Road Infrastructure

0.0.2(2)	Group of Experts on Road Traffic and Transport
0.0.2(3)	Meetings of Railway Administrations
0.0.2(5/6)	Groups of Experts on Civil Aviation (until June 1985)
0.0.5	SATCC Technical Services Fund
1.4.3	Road Link Karonga - Mbeya Malawi/Tanzania
1.5.2	Rehabilitation of the Zimbabwe - Tete - Malawi Road Mozambique
1.5.3	Study on the Rehabilitation of the Road Beira - Chimoio, Zimbabwe border
1.5.4	Rehabilitation of the Road Connection to Swaziland, Mozambique
1.5.5	Study on Unity Bridge and Access Roads, Mozambique/Tanzania
1.8.4	Rehabilitation of the Road Kafue - Chirundu, Zambia
2.0.2	Study on Railway Training Programmes
2.2.2	Rehabilitation of Railway Telecommunications Facilities, Botswana
2.2.3	Trans-Kalahari Railway (TKR) Study, Botswana)
2.2.4	Renewal of Train Working System, Botswana
2.5.7	Feasibility Study on the Reorganization of Maputo and Matola Yard, Mozambique
3.0.1	Regional Co-operation on Shipping
3.0.2	Port Staff Training Programme
3.1.1	Masterplan for the Port of Lobito, Angola
3.5.3	Design and Construction of Container Terminal for the Port of Nacala, Mozambique
3.7.1	Development of Navigation on Lake Malawi/Niassa
4.0.8	Updating of the 1980 Year's ICAO Study of Aeronautical Telecommunications
4.5.1	Rehabilitation of Airport Lights, Mozambique
4.5.2	Navigation Approach and Landing Aids, Mozambique
5.1.2	Expansion of the International Telecommunications Services, Angola
5.2.2	International Telephone Switching Centre, Gaborone, Botswana
5.5.1	National/Regional Satellite Communication System, Mozambique
5.6.2	Combined National and International Telephone Switching centre at Ntondozi, Swaziland
5.6.3	Expansion of National Microwave Trunk Network, Swaziland
5.6.4	Provision of Group and Channel Translating Equipment for 20 Super-groups at Ntondozi for the Combined National and International Telephone Switching Centre, ITSC Swaziland

5.7.1 Microwave Link Mbeya - Tukuyu - Karonga - Mzuzu, Tanzania
5.8.1 Extension of the International Transit Switching Centre (ITSC) in Lusaka, Zambia
5.8.5 Microwave Link in the North - Western Province, Zambia
5.9.1 International Telephone Switching Centre at Gweru Zimbabwe
5.9.2 Earth Station, Standard A, in Mazowe, Zimbabwe

Projects partly financed

Included among the projects indicated as partly financed are projects, where financing has only been secured for studies regarding capital investment projects possibly leading to implementation of the investments.

0.0.4 Regional Transit Transport Project for the Southern Africa Region (UNDP/UNCTAD Project RAF 77/017

1.3.1 Upgrading of the Road Mohale's Hoek - Quithing - Qachas Nek, Lesotho
1.3.4 Construction of a New Road Ramabanta, Semonkong-Sekake
1.6.1 Rehabilitation and Upgrading of the Road Sections Mozambique Border at Lomahasha -Siteki -Big Bend, Swaziland
1.8.3 Rehabilitation of the Lusaka -Kafue - Livingstone - Kazungula Road, Zambia
1.9.1 Rehabilitation of Three Sections of the Harare - Chirundu Road, Zimbabwe

2.1.1 Rehabilitation of the Benguela Railway, Angola
2.2.1 Rehabilitation of the Main Railway Line, Botswana
2.3.1 Container Terminal with Customs Facilities, Lesotho
2.4.1 Rehabilitation of the Salima - Southern Border Railway, Malawi
2.4.2 Supply of Railway Rolling Stock, Malawi
2.5.4 Rehabilitation of Beira - Malawi Railway, Mozambique
2.5.5 Rehabilitation of Nacala - Malawi Railway, Mozambique
2.5.6(3) Rehabilitation of Maputo-Chicualacuala (Limpopo) Railway, Mozambique
2.7.2 Repowering and Supply of Locomotives for TAZARA, Tanzania/Zambia
2.8.1 Feasibility Study for New Rail Link Connecting Zambia with Neighbouring Countries and Ports, Zambia

3.1.2	Development of the Port of Luanda, Angola
3.5.1	Increase in Capacity of the Port of Maputo, Mozambique
3.5.2	Increase in Capacity of the Port of Beira, Mozambique
3.7.2	Development of the Port of Dar es Salaam, Tanzania
4.3.1	New Airport at Maseru, Lesotho
4.6.1	Development of Matsapa Airport, Swaziland
5.5.3	National Telecommunications Development Project with Connections to Neighbouring Countries, Mozambique
5.8.4	Microwave Link Zambezi (Zambia) Luene Angola, Zambia

Projects without financing

Among the projects without financing are included projects, where donors have been approached and projects, where financing is being discussed or negotiated without any final commitment or agreement achieved.

0.0.2(4)	Spare Parts Task Group, Railways
0.0.2 (7)(8)	Group of Experts on Ports, Shipping etc.
0.0.3(1)	Road Traffic and Transport Training
0.0.3(4)	Training Course in National Telecommunications Network Planning
1.1.1	Study of the Road Soyo - N'Zetu, Angola
1.1.2	Studies of six Roads in Angola
1.2.2	Study on Jwaneng - Mamuno (Namibia Border) Road Link, Botswana
1.3.2	Upgrading and Re-construction of the Road Taung-Mokhotlong - Sani Top, Lesotho
1.3.3	Upgrading of the Road Thaba - Tseka - Taung - Mpiti, Lesotho
1.3.5	Upgrading of the Road Mokhotlong - Oxbow, Lesotho
1.4.1	Study on the Upgrading of the Road Mangoche - Chiponde / Mandimba - Mitande, Malawi/Mozambique
1.4.2	Study on the Upgrading of the Road Blantyre - Mulanje/Milanje - Mocuba, Malawi / Mozambique
1.5.1	Rehabilitation of the Tete - Cassacatiza Road, Section Matundo - Chiuta, Mozambique
1.5.6	Study on a New Road Linking Southern Zimbabwe with the Maputo Area, Mozambique

1.7.1	Rehabilitation and Upgrading of the Mtwara - Songea - Mbamba Bay Road, Tanzania
1.7.3	Rehabilitation/Strengthening of the Tanzam Highway, Tanzania
1.8.2	Study on Kazungula Bridge and the Pandamatenga - Victoria Falls Road, Zambia/Zimbabwe
1.8.5	Rehabilitation of the Ndola - Lusaka Road, Zambia
1.8.6	Rehabilitation of the Lusaka - Chipata Road, Zambia
1.8.7	Improvement of the Lusaka - Mongu Road, Zambia
1.8.8	Rehabilitation of the Tanzam Highway, Zambia
1.9.2	Upgrading of the Plumtree - Botswana Border Road, Zimbabwe
1.9.3	Study on the Harare - Mutare - Mozambique Border Road, Zimbabwe
2.0.4	Regional Study on Railway Telecommunications
2.0.5	Regional Wagon Manufacture Study
2.2.5	Maintenance Depot for Botswana Railways, Botswana
2.3.2	Expansion of Oil Storage Facilities in Lesotho
2.5.1	Rehabilitation of Machava - Swaziland Railway, Mozambique/Swaziland
2.5.3	Rehabilitation Almanda - Machipanda on the Beira - Zimbabwe Railway, Mozambique
2.5.8	Change Over to Roller Bearings, Mozambique
2.7.1	Track Rehabilitation, TAZARA, Tanzania/Zambia
2.7.3	Supply of Wagons to TAZARA Tanzania/Zambia
2.7.5	Supply of Trolleys, Trailers and Mechanical Equipment to TAZARA; Tanzania/Zambia
2.7.6	Acquisition of Signalling and Communications Equipment to TAZARA, Tanzania/Zambia
2.7.7	Technical Assistance and Training, TAZARA, Tanzania/Zambia
3.5.4	Navigational Aids, Mozambique
3.8.1	Navigability of the Zambezi and Shire Rivers, Zambia
4.0.1(2)	The Tanelec Flight Calibration Service, Arusha
4.0.3	Study on Joint Utilization of Maintenance Facilities for Aircraft
4.0.4	Study on Commonality in Civil Aviation Legislation
4.0.5	Study on General Aviation Activities
4.0.6	Updating of the 1974/75 Civil Aviation Manpower and Training Requirements Survey
4.0.7	Updating the Aeronautical Information Services
4.3.2	Acquisition of New Aircraft for Lesotho Airways, Lesotho
4.8.1	Study on Improvement of Livingstone Airport, Zambia
4.8.2	Study on Improvement of Ndola Airport, Zambia

4.8.3	Study on Improvement of Southdowns Airport (Kitwe), Zambia
4.8.4	New Hangar at Lusaka International Airport, Zambia
4.8.5	Extension of Zambia Air Service Institute (ZASTI) Zambia
4.9.2	Study on New Harare Airport Terminal, Zimbabwe
5.0.1	African Domestic Satellite System
5.0.2	Study on the Harmonization of the Development of Satellite Communication
5.1.1	Satellite Earth Station A, Angola
5.7.2	Extension of the International Transit Switching Centre Capacity in Tanzania (Dar es Salaam, ITSC) Tanzania
5.7.3	Standard A, Earth Satellite Station at Dar es Salaam, Tanzania
5.8.2	Expansion of the Earth Station at Mwembeshi (Lusaka), Zambia
5.8.3	Microwave Terminal at Chingola to Complete the Link Zambia - Zaire

ANNEX 1

PROJECT COSTS, FINANCING AND IMPLEMENTATION STATUS

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LIST OF CONTENTS

TABLE 1 OPERATIONAL CO-ORDINATION AND TRAINING PROJECTS

Project No.	Project title	Estimated Cost USD mill.		Secured Financ. USD million	Comments on: Financing Status Action
		Total	Foreign		
	Multimodal				
0.0.1	Technical Assistance to SATCC (for period 1984/85)	1.6	1.6	1.6	Financed by Denmark, Finland, Norway, Sweden and Italy.
0.0.2	Operational Co-ordination Development Programme				
0.0.2 (1)	Group of Experts on Road Infrastructure	0.25	0.25	0.25	Financing secured from DANIDA.
0.0.2 (2)	Group of Experts on Road Traffic and Transport	0.24	0.24	0.24	Financing secured from NORAD.
0.0.2 (3)	Meetings of Railways Administrations	0.20	0.20	0.20	Financing secured from DANIDA.
0.0.2 (4)	Spare Parts Task Group, Railways	0.78	0.78	-	DANIDA has been approached.
0.0.2 (5/6)	Groups of Experts on Civil Aviation	0.25	0.25	0.25	Financing secured from Australia until June 1985.
0.0.2 (7)	Group of Experts on Port Administration	0.2	0.2	-	Terms of Reference has been prepared. NORAD has been approached.
0.0.2 (8)	Group of Experts on Water Transport and Shipping Development	0.2	0.2	-	Italy will be approached.
0.0.2 (9)	Ad Hoc Meetings and Groups of Experts within Telecommunications	0.2	0.2	-	CIDA has expressed interest in financing.
0.0.3	Training Development Programme				
0.0.3 (1)	Road Traffic and Transport Training	0.5	0.5	-	Terms of Reference prepared. NORAD and CIDA will be approached for financing.
0.0.3 (4)	Training Course in National Telecommunications Network Planning	0.15	0.15	-	Financing pledged by Italy. Syllabi of the course prepared. Canada and Sweden has been approached for financing too.
0.0.4	Transit Transport Project (UNCTAD/UNDP)	2.0	2.0	0.6	UNDP/UNCTAD grant and technical assistance secured. Additional finance being sought.
0.0.5	SATCC Technical Services Fund	5.0	5.0	5.0	Funds secured by Canada and Norway.
	Railways				
2.0.2	Study on Railway Training Programmes	1.1	1.1	1.1	Financed by F.R. Germany (KfW). The study is expected to be completed in 1985.
2.0.4	Regional Study on Railway Telecommunications	0.1	0.1	-	CIDA has been approached for financing.
2.0.5	Regional Wagon Manufacture Study	0.35	0.35	-	CIDA has been approached for financing.
	Ports and Water Transport				
3.0.1	Regional Co-operation on Shipping	0.2	0.2	0.2	A Programme for Consulting Services proposed. Italy has undertaken to finance the study. Negotiations with consultants are proceeding. This project has been submitted to UNDP by SADCC Secretariat (UNDP Pledge).

Cont.

TABLE 1 OPERATIONAL CO-ORDINATION AND TRAINING PROJECTS

Cont.

Project No.	Project title	Estimated Cost USD mill.		Secured Financ. USD million	Comments on: Financing Status Action
		Total	Foreign		
3. .2	Port Staff Training Programme	0.6	0.6	0.6	Financed by Norway. Ongoing project. First phase completed.
	Airports and Civil Aviation				
4.0.1 (2)	The Tanelec Flight Calibration Service Arusha	3.4	3.4	-	Financing is being sought. Background document prepared by Tanzania. NORAD/UNDP has been approached.
4.0.3	Joint Utilization of Maintenance Facilities for Aircraft	0.37	0.37	-	Partly covered by an ADB study.
4.0.4	Commonality of Civil Aviation Legislation	0.41	0.41		ADB has been approached for financing.
4.0.5	Study on General Aviation Activities	0.39	0.39	-	Financing is being sought.
4.0.6	Updating of the 1974/75 Civil Aviation Manpower and Training Requirements Survey	0.23	0.23	-	Financing is being sought.
4.0.7	Updating the Aeronautical Information Service	0.5	0.5	-	Sweden has been approached for financing.
4.0.8	Updating of 1980 Years ICAO Study of Aeronautical Telecommunications	0.06	0.06	0.06	About to be completed. Financed by ICAO.
	Telecommunications				
5.0.	African Domestic Satellite System	1.0	1.0	-	Italy has pledged to finance the study. Canada has shown interest too.
5.0..	Study on the Harmonization of the Development of Satellite Communications	0.4	0.4	-	Italy has pledged to finance the study. Consultant's proposals under examination. Background document prepared by SATCC.
	Total	20.38	20.38	1.1	

TABLE 2 MAPUTO PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project title	Estimated Cost USD mill. Total	Foreign	Secured Financ. USD million	Comments on: Financing: Status Action
	Ports and Water Transport				
3.5.1 (1)	Maputo Port. MOZAMBIQUE Feasibility Study on Improvement of the Entrance Channel	0.9	0.9	-	Financing is being discussed with Denmark. Project appraisal under way.
(2)	Coal Terminal at Matola phase 1	1.8	1.8	-	
	phase 2	49.0	42.0	-	Project documents prepared.
(3)	Container Terminal Equipment and Management Assistance	22.3	21.2	10.4	8.9 million USD Italian credit for cranes and other equipment. UK is financing a Management Assistance Scheme over three years.
	Railways				
2.2.1	Rehabilitation of the Main Railway Line. BOTSWANA				
(1)	Gaborone - Southern Border	19	15	15	Section 1 and a part of section 2 are being financed by the People's Republic of China. Financing is being sought for section 3 and part of section 2. SIDA has been approached.
(2)	Francistown - Norther Border	15	12	3	
(3)	Gaberone - Francistown	80	64	-	
2.2..	Rehabilitation of Railway Telecommunications Facilities. BOTSWANA	0.5	0.5	0.5	Financed by Sweden. Project work will commence first half of 1985.
2.2.4	Renewal of Train Working System. BOTSWANA	5.0	4.5	5.0	Sweden has agreed to finance the project. Work will commence in 1985.
2.2.5	Maintenance Depot for Botswana Railway. BOTSWANA	5.0	4.5	-	Project description and cost estimates prepared by TRANSMARK. Financing is being sought.
2.2.1	Container Terminal with Customs Facilities. LESOTHO	1.6	1.0	-	EEC is financing a study which will be completed by the end of 1984 and has shown interest in financing the implementation.
2.2.2	Expansion of Oil Storage Facilities. LESOTHO	5.8	5.8	-	Sweden has been approached for financing. Technical drawings and costings should be finalized for a detailed project plan.
2.5.1	Rehabilitation of the Mocambique Swaziland Railway Technical and Economic Study and Engineering Design	0.9	0.9	-	Italy has expressed willingness to provide funds for the study and an agreement is being negotiated. A rehabilitation programme is expected to be initiated based on the findings of the study.
2.5.6	Railways in Southern Mozambique and Swaziland				
(1)	Study on Engineering for Bridges on Railways in Southern Mozambique. MOZAMBIQUE	0.2	0.2	-	Financing is being sought.
(2)	Rehabilitation of the Maputo-Chicualacuala Railway MOZAMBIQUE				
	phase 1 Emergency Programme for 80 km and Technical Assistance	37.5	36.5	20.0	Financing secured from UK and Mozambique. Work is about to commence.

Cont.

TABLE 2 MAPUTO PORT TRANSPORT SYSTEM PROJECTS

Cont.

Project No.	Project title	Estimated Cost USD mill.		Secured Financ. USD million	Comments on: Financing Status Action
		Total	Foreign		
	phase 2 Rehabilitation of Remaining 444 km	86.0	64.0	-	A project description has been prepared. ADB has been approached for financing.
2.5.7	Feasibility Study on the Reorganization of Maputo and Matola Yards	1.3	1.3	1.3	Financed by Italy. Ongoing study.
	Roads				
1.3.1	Upgrading of the Road Mohales Hoek-Quithing-Qachar Nek. LESOTHO	92.0	73.6	57.0	Ongoing work financed by USAID (USD 34 mill) and EEC (USD 15 mill) and Lesotho Government (USD 8 mill). EEC and USAID have been approached for financing the shortfall (USD 35 million).
1.3.2	Upgrading and Reconstruction of the Road Tsung - Mokhotlong - Sani Top. LESOTHO	55	44	-	Feasibility study and engineering design completed. (Financed by EEC). Financing is being sought for implementation. ADB has been approached.
1.3.3	Upgrading of the Road Thaba Tseka-Tsung-Mpiti	54	43.2	-	Feasibility study completed, financed by Canada. Financing is being sought for design and implementation.
1.3.4	Construction of a New Road Ramabanta - Semonkong - Sekate. LESOTHO	95.0	76.0	0.3	Engineering design of Section Ramabanta to Semonkong completed financed by F.R. Germany. Financing is being sought for construction of Ramabanta-Semonkong (F.R. Germany approached), and for design and construction of Semonkong-Sekate.
1.3.5	Upgrading of the Road Mokhotlong-Oxbow. LESOTHO	36.0	28.8	-	Design completed. Financing is being sought.
1.5.3	Rehabilitation of the Road Connection to Swaziland. MOZAMBIQUE	19.5	15.6	19.5	Sweden has secured funds for this project. Engineering design to be made in 1984-85. Construction work will start 1986.
1.5.6	Study of a New Road Linking Southern Zimbabwe with the Maputo Area. MOZAMBIQUE	0.4	0.4	-	Financing is being sought.
1.6.1	Rehabilitation and Upgrading of the Road Section Lomahasha-Siteki-Big-Bend. SWAZILAND	26	22.1	11.7	Work started on section Lomahasha-Siteki, financed by ADB (5.7 million), Sweden (USD 3.2 million) and Swaziland (USD 2.8 million). Financing is being sought for the section Siteki-Big Bend.
	Total	692.0	558.1	143.7	

TABLE 3 BEIRA PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project title	Estimated Cost USD mill. Total	Foreign	Secured Finance. USD million	Comments on: Financing Status Action
	Ports and Water Transport				
3.5.2	Increase in Capacity of the Port of Beira	444.3	399.2	31.7	Funds pledged by the Netherland of which USD 25.7 mill are allocated to sub-projects 1-3.
(1)	Rehabilitation and Short Term Improvements	(21.1)	(21.1)	(21.1)	Including costs of study 0.7, buoys 0.5, backhoes 4.3, tugs and buoys 2.5.
(2)	Entrance Channel Study	(3.4)	(3.4)	(3.4)	Study completed September 1982.
(3)	Masterplan Study	(1.2)	(1.2)	(1.2)	Study completed April 1984.
	Masterplan Projects				
(4)	Service Port Facility	(3.6)	(3.1)	-	Operational 1986; financier sought.
(5)	Oil Terminal	(9.2)	(7.7)	-	Operational 1986; " "
(6)	Bulk Terminal	(31.3)	(29.8)	-	Operational 1987; " "
(7)	Multi-purpose berths 4-5	(33.5)	(31.1)	-	Operational 1987; " "
(8)	Dredging to CD-8	(9.5)	(8.6)	-	Ready end of 1986; " "
(9)	Reclamation, Coal Terminal	(40.3)	(36.3)	-	Ready end of 1986; " "
(10)	Railways, Non Coal Traffic	(17.8)	(14.3)	-	From 1985 to 1989; " "
(11)	Roads	(3.7)	(2.5)	-	In 1987 and 1988; " "
(12)	Cont./m-p, Berth 2-3	(54.6)	(49.1)	-	From 1987 to 1989; " "
(13)	Channel Dredging CD-10	(21.6)	(19.5)	-	Planned for 1989; " "
	CD-14	(63.4)	(57.1)	-	Planned for 1992-1993; 1984 prices.
(14)	Coal Terminal Phase 1-2	(81.8)	(73.6)	-	Operational 1990; financier sought.
(15)	Development of Berths 6-10	(8.5)	(4.9)	-	Planned for 1988-1992; 1984 prices.
(16)	Coal Terminal Phase 3	(39.8)	(35.9)	-	Planned for 1998-1999; " "
3.8.1	Navigability on the Zambezi and Shire Rivers	0.3	0.3	-	UNDP has been approached for financing. Background document has been prepared.
	Railways				
3.6.1	Rehabilitation of the Salima-Southern Border Railway. MALAWI	20.0	13.0	3.0	UK has committed 3 mill for the first phase of the project. It is expected that the remaining part of the project will be financed by UK and Malawi.
3.6.2	Supply of Railway Rolling Stock. MALAWI	9.0	9.0	3.0	USD 3 million secured from F. R. Germany. ADB has been approached for remaining part.
3.6.3	Rehabilitation of the Beira-Zimbabwe Railway. Dondo-Zimbabwe Border. MOZAMBIQUE	25.0	17.5	-	A project description has been prepared. Financing is being sought.
3.6.4	Rehabilitation of the Beira-Malawi Railway. MOZAMBIQUE				
(1)	Section Beira-Dondo	22.0	17.6	0.3	Belgium has allocated funds for a study. ADB has also been approached. Financing of the implementation is being sought.

Cont.

TABLE 3 BEIRA PORT TRANSPORT SYSTEM PROJECTS Cont.

Project No.	Project title	Estimated Cost USD mill. Total	Estimated Cost USD mill. Foreign	Secured Finance. USD million	Comments on: Financing Status Action
(2)	Section Dondo-Malawi Border	112.0	90.0	33.0	The section Dondo-Dernanic (2 and financed by Mozambique (0.3 mill and D.R. Germany (3.2 mill). Part of rehabilitation costs Dondo-Moatize financed by Italy (18.5 mill). USD 79.0 million is being sought. ADB and CIDA have been approached for USD 10.0 million (Dona-Ana-Malawi Border). Work has commenced on the section Dondo-Dernanic.
	Roads				
1.4.2	Study on the Upgrading of the Road Blantyre-Mulanje/Milanje-Mocuba. MALAWI/MOZAMBIQUE	1.1	1.1	-	Financing for the feasibility and engineering study is being sought. USAID has shown interest. TOR have been prepared.
1.4.3	Rehabilitation of the Tete-Cassacatina Road, Section Matundo-Chiuta. MOZAMBIQUE	6.5	5.0	-	Financing is being sought for rehabilitation.
1.5.1	Study on the Rehabilitation of the Road Beira-Chimoio-Zimbabwe Border. MOZAMBIQUE	0.5	0.5	0.5	Ongoing feasibility study financed by Australia.
1.7.1	Study on the Upgrading of the Eastern End of the Road Harare-Mutare-Mozambique Border. ZIMBABWE	0.1	0.1	-	ADB is considering the financing of a feasibility study. TOR to be prepared.
	Total	640.8	553.3	71.5	

TABLE 4 NACALA PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project title	Estimated Cost USD mill.		Secured Financ. USD mill.	Comments on: Financing Status Action
		Total	Foreign		
	Ports and Water Transport				
3.5.3	Design and Construction of Container Terminal for the Port of Nacala. MOZAMBIQUE	10.9	10.9	10.9	Ongoing project financed by Finland.
	Railways				
2.5.5	Rehabilitation of the Nacala-Cuamba Railway 538 km. MOZAMBIQUE	235	188	91.9	Financed by Canada (13.0 mill), France (43.0 mill), Portugal (25.4 mill). Local part USD 10.5 mill. Mobilization commenced in July 1983. Financing for remaining parts is being sought.
	Roads				
1.4.1	Upgrading of the Road Mangoche-Chiponde/Mandimba-Mitarde. MALAWI/MOZAMBIQUE	0.2	0.2	-	Financing for a feasibility study is being sought.
1.5.6	Rehabilitation of the Road Lusaka-Chipata. ZAMBIA	32	19		Denmark is considering financing of engineering study. (USD 0.7 million). USAID is interested in financing the works. Also ADB has shown interest.
	Total	278.1	218.1	102.8	

TABLE 5 DAR ES SALAAM PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project title	Estimated Cost USD mill		Secured Financ. USD mill.	Comments on: Financing Status Action
		Total	Foreign		
	Port and Water Transport				
3.7.2	Development of the Port of Dar-es-Salaam. TANZANIA	144.5	117.8	65.8	
(1)	Kurasini Oil Terminal Rehabilitation	(2.3)	(1.6)	(1.6)	Financing secured by NORAD. Under implementation.
(2)	Improvement of Harbour Entrance Channel	(45.4)	(41.0)	-	Financing being sought.
(3)	Construction of Container Terminal Berths 10 and 11	(17.6)	(13.6)	(13.6)	IDA has secured financing.
	Berth 9 rehabilitation	(5.0)	(2.4)	(2.4)	IDA has secured financing.
(4)	Construction of Grain Facility	(16.7)	(13.4)	(13.4)	The Netherlands has secured financing.
(5)	Ubungu Container Depot	(3.7)	(2.6)	(2.6)	Financing secured by SIDA.
(6)	Lighterage Quay and Belgian Wharf	(6.7)	(3.4)	-	Financing being sought.
(7)	Construction of a Tug Berth	(5.2)	(3.6)	-	Financing being sought.
(11)	Rehabilitation of Berths 1-8	(16.7)	(11.0)	(11.0)	SIDA has secured financing. Under implementation.
(8)	Purchase of Shore-based Container and General Cargo Handling Equipment	(14.7)	(14.7)	(14.7)	Nordic Countries have secured financing.
(9)	Purchase of Floating Craft	(3.5)	(3.5)	-	CIDA has been approached.
(10)	Technical Assistance to THA and	(3.5)	(3.5)	(3.5)	Financing has been secured by IDA (Consultancy Services).
	Improvement of Bandari College	(2.5)	(2.5)	(2.5)	NORAD has secured financing.
(12)	Study on New Oil Terminal	(0.2)	(0.2)	-	Financing being sought.
(13)	Study on Transit Warehouse for Zaire. Burundi and Ruanda Cargo	(0.3)	(0.3)	-	CIDA has been approached.
(14)	Study on Container Handling in Tanzania and on TAZARA	(0.5)	(0.5)	(0.5)	NORAD has secured financing.
	Railways				
	TAZARA, TANZANIA/ZAMBIA	-	-	-	SATCC/TU has prepared dossiers with cost estimates and a time schedule for the implementation for all parts of the project. A Donors Conference is planned to be held in the last quarter of 1984.
2.7.1	Track Rehabilitation	70.0	49.0	-	EEC experts have made an assessment on permanent way maintenance. Australian Consultants have studied the landslides problem. EEC, ADB, SIDA and Austria have been approached for funds. Italy has expressed her interest in the project.
(1)	Rehabilitation of Quarries	(4.5)	-	-	
(2)	Introduction of Mechanized Maintenance	(22.2)	-	-	
(3)	Rail Burns Repairs	(0.7)	-	-	
(4)	Stabilization of Landslide Sites	(17.9)	-	-	
(5)	Welding Scheme	(24.7)	-	-	
2.7.2	Repowering and Supply of Locomotives	55.0	55.0	23.0	F.R. Germany has financed 14 locomotives. Financing is being sought for the remaining part of the project.
2.7.3	Supply of Wagons	24.0	24.0	-	Switzerland has expressed interest in the project.
2.7.4	Terminal Facilities at New Kapiri, Mposhi Station	0.4	0.3	0.4	The implementation will be carried out and financed by TAZARA.

Cont.

TABLE 5 DAR ES SALAAM PORT TRANSPORT SYSTEM PROJECTS

Cont.

Project No.	Project title	Estimated Cost USD mill		Secured Financ. USD mill.	Comments on: Financing Status Action
		Total	Foreign		
2.7.5	Supply of Trolleys, Trailers and Mechanical Equipment	7.0	7.0	-	SIDA has been approached for funds.
2.7.6	Acquisition of Signalling and Communications Equipment	11.0	9.0	-	DANIDA, CIDA and Switzerland have been approached.
2.7.7	Technical Assistance and Training	4.5	3.2	-	Italy has been approached for funds.
(1)	Technical Assistance to Head Office	(3.0)	(2.4)	-	
(2)	Manpower and Training Development	(1.5)	(0.8)	-	
	Roads				
1.4.3	Road Link Karonga - Mbeya. MALAWI/TANZANIA	1.8	1.8	1.8	EEC has agreed to finance a full engineering study and emergency repairs are financed by UK.
1.7.3	Rehabilitation/Strengthening of the TANZAM Highway. TANZANIA	62.0	40.0	-	Financing of the rehabilitation work is under negotiation with the World Bank.
1.8.8	Study on Rehabilitation of the TANZAM Highway. ZAMBIA	1.1	1.1		Denmark is considering financing of the study
	Total	381.3	308.2	91.0	

TABLE 6 LOBITO PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project title	Estimated Cost USD mill.		Secured Financ. USD mill	Comments on: Financing Status Action
		Total	Foreign		
	Port and Water Transport				
3.1.1	Master Plan for the Port of Lobito. ANGOLA	0.7	0.7	0.7	Financed by Denmark. The study will be completed in 1984.
3.1.2	Development of the Port of Luanda. ANGOLA	28.0	23.4	14.1	
(1)	Design of a RO/RO Terminal	(0.2)	(0.2)	-	
(2)	Construction of a Grain Terminal and Silos	(13.0)	(11.0)	(5.6)	Financing secured by local funds.
(3)	Modernisation and Enlargement of Electrical System	(5.5)	(5.5)	(3.0)	Financing secured by local funds.
(4)	Earth Work	(5.5)	(3.3)	(5.5)	Financing secured by local funds. Under implementation.
(5)	Construction of Canteen Facilities	(3.8)	(3.4)		
	Railway				
2.1.1	Rehabilitation of the Benguela Railway. ANGOLA	181.0	181.0	18.0	Part of the project has been implemented by funds made available by: BADEA/OPEC 10 mill; OPEC 3.0 mill, Netherlands 2.6 mill, Sweden 1.3 mill, Belgium 0.8 mill, UNDP 0.3 mill. Financing is being sought for remaining parts of the project. Project description has been prepared and submitted to ADB.
	Roads				
1.2.1	Angola-Zambia Road Link. ZAMBIA	0.2	0.2	0.2	The feasibility study financed by EDF is presently adjourned.
	Total	209.9	205.3	33.0	

TABLE 7 INTRA-REGIONAL SURFACE TRANSPORT SYSTEM PROJECTS

Project No.	Project title	Estimated Cost USD mill.		Secured Financ. USD million	Comments on: Financing Status Action
		Total	Foreign		
	Ports and Water Transport				
3.5.4	Navigational Aids. MOZAMBIQUE	10.2	9.8	-	Financing is being discussed with Sweden.
3.5.4 (1)	Buoy Handling and Maintenance Vessels.MOZAMBIQUE	4.0	4.0	-	Financing is being sought.
3.7.1	Development of Navigation on Lake Malawi/Niassa. MALAWI	0.4	0.4	0.4	Financing secured by DANIDA.
	Railway				
2.2.3	Trans-Kalahari Railway Study. BOTSWANA	0.8	0.7	0.8	Financed by local funds. The study is about to be completed.
2.5.8	Change over to Roller Bearings. MOZAMBIQUE	7.0	7.0	-	SIDA will be approached.
2.8.1	Feasibility Study for New Rail Links Connecting Zambia with Neighbouring Countries and with Ports. ZAMBIA	0.8	0.8	-	The study of the link from TAZARA to Mpulungu Port, Lake Tanganyika will be financed by ADB. Financing is being sought for the remaining part of the project.
	Roads				
1.1.1	Study of the Road N'Zeto-Soyo. ANGOLA	1.1	1.1	-	Terms of Reference for feasibility and engineering study have been drafted. ADB has been approached for financing.
1.1.2	Studies of Six Roads. ANGOLA	2.0	2.0	-	Stand by.
1.2.2	Study on Jwaneng-Mamuno Road Link. BOTSWANA	0.6	0.6	-	Financing is being sought for a feasibility study. Terms of Reference have been prepared.
1.5.2	Rehabilitation of the Zimbabwe Tete-Malawi Road. MOZAMBIQUE	20.0	20.0	20.0	Construction works financed by Kuwait Fund. Construction has commenced in 1983.
1.5.5	Study on Unity Bridge and Access Road. MOZAMBIQUE/TANZANIA	0.9	0.9	0.9	ADB has secured financing of a feasibility study of bridge and access roads.
1.7.1	Rehabilitation and Upgrading of the Mtwara-Songea-Mbamba Road. TANZANIA	335	250	-	Financing is being sought for review of design and for construction work. Detailed design and tender documents prepared in 1975.
1.8.2	Study on Kazungula Bridge and the Pandamatenga-Victoria Falls Road. ZAMBIA	0.7	0.7	-	Appraisal report prepared by Norway. Financing of study is being considered by ADB.
1.8.3	Rehabilitation of the Lusaka-Kafue-Livingstone-Kazungula Road. ZAMBIA	37.0	23.0	5.0	Work in progress on Livingstone-Zimba section, financed by Norway (USD 5.0 million). Financing for study of remaining sections is being considered by Denmark. (USD 0.7 million).
1.8.4	Rehabilitation of the Road Kafue-Chirundu. ZAMBIA	16.5	13.0	16.5	Ongoing project, financed by USAID.
1.8.5	Rehabilitation for the Ndola-Lusaka Road. ZAMBIA	25.0	15.0	-	Denmark is considering financing of engineering study (USD 0.6 million). ADB has been approached for financing rehabilitation work.

Cont.

TABLE 7 INTRA-REGIONAL SURFACE TRANSPORT SYSTEM PROJECTS

Cont.

Project No.	Project title	Estimated Cost USD mill.		Secured Financ. USD million	Comments on: Financing Status Action
		Total	Foreign		
1.8.7	Improvement of the Road Lusaka-Mongo	35.0	21.0	-	ADB has been approached for financing rehabilitation work.
1.9.1	Rehabilitation of Three Sections of the Harare-Chirundu Road. ZIMBABWE	31.0	17.0	5.4	Section A completed, financed by USAID (5.4 million). Financing is being sought for engineering studies and works for sections B and C.
1.9.2	Upgrading of the Road Plumtree-Botswana Border. ZIMBABWE	2.5	1.3	-	ADB has been approached for financing.
	Total	530.5	388.3	49.0	

TABLE 8 CIVIL AVIATION PROJECTS

Project No.	Project title	Estimated Cost USD mill		Secured Financ. USD million	Comments on: Financing Status Action
		Total	Foreign		
4.3.1	New Airport at Maseru. LESOTHO	42	32	27	Financed by OPEC, EEC, Abu Dbabi, BADEA, Saudi Arabia, ADB, Kuwait Fund and Finland. ADB has been approached for financing of remaining parts.
4.3.2	Acquisition of New Aircraft for Lesotho Airways. LESOTHO	7	7	-	Project description prepared. Sweden is considering to finance the project.
4.5.1	Rehabilitation of Airport Lights. MOZAMBIQUE	5	5	5	Financed by Sweden and Denmark. Ongoing project.
4.5.2	Navigation, Approach and Landing Aids. MOZAMBIQUE	3.5	3.5	3.5	Financed by France. Ongoing project.
4.6.1	Development of Matsapha Airport. SWAZILAND	38	32	26.8	Control tower, training and telecoms are financed by EEC (2.0 mill). France has agreed to finance training, technical assistance, navigation aids and landing equipment (1.8 mill). Runway financed by local funds. Financing is being sought for remaining parts.
4.8.	Improvement of Livingstone Airport. ZAMBIA	0.2	0.2	-	Financing for a feasibility study is being sought. Terms of Reference have been prepared.
4.8.2	Improvement of Ndola Airport. ZAMBIA	0.3	0.3	-	Financing for a feasibility study is being sought. Terms of Reference have been prepared.
4.8.3	Improvement of Southdowns Airport. ZAMBIA	0.2	0.2	-	Financing for a feasibility study is being sought.
4.8.4	New Hangar at Lusaka International Airport. ZAMBIA	0.3	0.3	-	Terms of Reference have been prepared. ADB has been approached for financing of feasibility study.
4.8.5	Extension of Zambia Air Services Institute (ZASTI). ZAMBIA	1.6	1.6	-	Field mission and updated project description to be prepared. Financing of implementation is being sought.
4.9.2	New Harare Airport Terminal. ZIMBABWE	0.5	0.5	-	Financing is being sought for a feasibility study.
	Total	98.6	82.6	62.3	

TABLE 9 TELECOMMUNICATION PROJECTS

Project No.	Project title	Estimated Cost USD mill		Secured Financ. USD million	Comments on: Financing Status Action
		Total	Foreign		
5.1.1	Satellite Earth Standard A. ANGOLA	14.3	11.4	-	Financing is being sought. Preliminary planning stage.
5.1.2	Expansion of the International Telecommunications System. ANGOLA	38.0	32.4	38.0	Ongoing project, financing secured by ADB.
5.2.1	Microwave Link, Francistown-Bulawayo	5.0	4.5	5.0	Financed by Sweden and Norway. Expected RFS September 1984.
5.2.2	ITSC Gaborone. BOTSWNA	5.1	4.1	5.1	Ongoing project. Financing secured by Sweden.
5.3.1	Satellite Circuits between Maseru and Zimbabwe. LESOTHO/ZIMBABWE	0.05	0.05	-	Proposed to be combined with the respective earth station projects.
5.5.1	National/Regional Satellite Communication System. MOZAMBIQUE	17.8	17.4	17.8	Financed by Kuwait Fund, France and suppliers credits. Expected RFS first quarter 1986.
5.5.3	National Telecommunication Development Project with Connections to Neighbouring Countries (Regional Part). MOZAMBIQUE	152	137	32	The figures indicated are relevant only to the regional part of the project. The financial commitment by the various financiers for the national and regional part of the projects are as follows: Italy (USD 55 mill), BADEA (USD 10 mill), ADB (26 mill) and Sweden (USD 2,2 mill for Project No. 5.5.3(7)). Phase I is in tendering phase.
(1)	ITSC in Beira	(3.7)	(3.3)	-	Included in the phase I of 5.5.3.
(2)	New Telex Exchange in Beira	(2.5)	(2.3)	-	F.R. Germany has been approached for financing of the telex exchange.
(3)	Microwave Link Tete - Blantyre	(8.1)	(7.2)	-	Included in phase II of 5.5.3. Optional extension to Zimbabwe is being studied. Norway is considering to finance this link including the extension to Zimbabwe.
(4)	Microwave Link Tete - Katete	(11.0)	(10.0)	-	Included in phase II of 5.5.3.
(5)	Microwave Link Beira - Mutare	(3.4)	(3.1)	-	The section up to Chimoio is included in phase I of 5.5.3. Provisional smaller capcity link will be installed soonest from Mxiluvo to Mutare.
(6)	Microwave Link Nampula - Mtware	(18.0)	(14.4)	-	Implementation in the later phases of 5.5.3.
(7)	ITSC at Maputo	(2.2)	(2.2)	-	Included in phase I of 5.5.3. Financing secured by Sweden.
5.6.2	ITSC at Ntondozi. SWAZILAND	4.7	4.2	4.2	The Government of Italy has committed herself to finance the project.
5.6.3	Expansion of the National Microwave Trunk Network. SWAZILAND	4.7	4.0	4.0	Ditto
5.6.4	Provision of Group and Channel Translating Equipment for 20 Supergroups at Ntondozi for the Combined National and International Telephone Switching Centre (ITSC). SWAZILAND	1.4	1.3	1.3	Ditto
5.7.1	Microwave Link Mbeya - Karonga - Mzuzu. TANZANIA/MALAWI	9.9	8.9	9.9	Financing secured by Norway and Sweden.

Cont.

TABLE 9 TELECOMMUNICATION PROJECTS

Cont.

Project No.	Project title	Estimated Cost USD mill		Secured Financ. USD million	Comments on: Financing Status Action
		Total	Foreign		
5.7.2	Extension of ITSC Capacity. TANZANIA	4.3	3.9	-	ADB has been approached for financing. A feasibility study is requested by ADB.
5.7.3	Standard A Earth Satellite Station at Dar-es-Salaam. TANZANIA	10.0	10.0	-	Financing is being sought
5.8.1	Extension of ITSC in Lusaka. ZAMBIA	2.8	2.5	2.8	Financed by Sweden (commercial loan). Ongoing project expected RFS early 1984.
5.8.2	Expansion of the Earth Station at Mwembeshi. ZAMBIA	10.0	8.0	-	Canada has shown interest in financing the project. ADB has been approached.
5.8.3	Microwave Terminal at Chingola to complete the Link Zambia/Zaire. ZAMBIA	0.2	0.2	-	The project is awaiting action on the Zairean side. Norway has been approached for financing.
5.8.4	Microwave Link Zambezi-Luene	7.2	6.5	0.2	Norway is willing to finance a route survey.
5.8.5	Microwave Link in the North Western Province. ZAMBIA	14.5	10.4	14.5	Ongoing project financed by Norway.
5.9.1	ITSC at Gweru. ZIMBABWE	4.0	3.4	4.0	Ongoing project financed by Sweden. RFS Dec. 1984.
5.9.2	Earth Station Standard A. ZIMBABWE	14.4	8.6	14.4	Financing secured from Japan suppliers credit basis. RFS June 1985.
	Total	320.35	278.75	153.2	

Annex 2

REVIEW OF THE REGIONAL PROGRAMME OF PROJECTS

LIST OF CONTENTS

INTRODUCTION

This annex is a complete review of the Regional Programme of Projects. The review is based on information supplied by the Member States and updated for August 1984.

A standard "project brief" has been prepared for all projects approved by SATCC and included in the Regional Programme.

The projects are numbered in a three digit system described below.

The first digit defines the sector:

0 - Multimodal

1 - Roads

2 - Railways

3 - Ports and Water Transport

4 - Civil Aviation

5 - Telecommunications

The second digit indicates the country :

0 - Regional

1 - Angola

2 - Botswana

3 - Lesotho

4 - Malawi

5 - Mozambique

6 - Swaziland

7 - Tanzania

8 - Zambia

9 - Zimbabwe

The third digit is a serial number for each sector and country.

The project briefs are standardized and presented in a uniform manner, starting with the project number and title. Below follows a map indicating the location of the project and key information such as :

- Estimated costs
- Financing
- Executing agency
- Start (of project)
- Duration (of implementation)

The main text of the project briefs is standardized under the following four headings :

- Scope
- Contents
- Status
- Action

The project briefs have been limited to one page. This is obviously not enough to give a comprehensive description of the projects. Additional information can, however, be provided by the SATCC Technical Unit in Maputo.

MULTIMODAL PROJECTS

0.0.2 OPERATIONAL CO-ORDINATION DEVELOPMENT PROGRAMME

Estimated Costs:
USD 2.3 million (1984 prices)
USD 2.3 million (current prices)
Financing:
Secured : USD 0.9 million
Requested: USD 1.4 million
Foreign currency part: 100%

Executing Agency:
Southern Africa Transport and Communications Commission

Start:
1983

Duration:
1½ - 2½ years

Scope — Promotion of regional operational co-ordination within all sectors. The programme encompasses nine separate activities aiming at harmonization, standardization or more general co-operation between various organizations in the Member States.

Contents — The project encompasses activities which at this stage are considered urgently needed to promote better operational co-ordination within the region. Such co-ordination has high priority. The Technical Unit of SATCC will be directly involved in the initiation of the activities. There is, however, a need for supplementary technical assistance and assistance concerning preparation of meetings and seminars in order to secure the implementation of all activities soonest possible. Due to this outside financing is needed for each activity.

Nine separate activities have been identified so far. The background for each is described in Sections 4.2, 5.2 and 6.2 of the Report. For each activity a regional Group of Experts will be convened by SATCC:

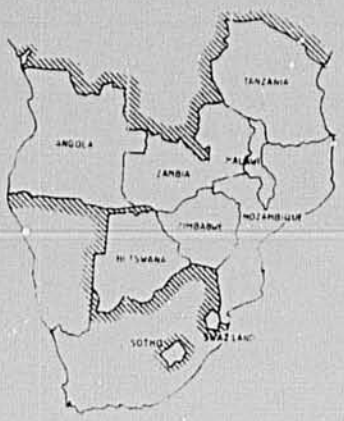
(1) Road Infrastructure
(2) Road Traffic and Transport

(3) Meetings of Railway Administrations
(4) Spare Parts Task Group
(5) Consultative Group of Directors of Civil Aviation
(6) Consultative Group of Senior Representatives from National Airlines
(7) Port Administrations
(8) Shipping development, transit traffic flows and port maritime transport statistics
(9) Ad Hoc Meetings and Groups of Experts within Telecommunications.

Status — During 1983 the work was initiated and meetings were convened for the first six Groups and in 1984 the work in the Group of Experts on Port Administrations has been initiated. Australia will finance the two civil aviation groups. Denmark has agreed to finance the Group of Experts on Road Infrastructure and the Meetings of Railway Administrations and has been approached for financing of the Spare Parts Task Group. Norway has agreed to finance the Group on Road Traffic and Transport and has been approached for financing of the Group on Port Administrations. Italy will be approached for financing of the Group on Shipping.

Action — Conclusion of the outstanding financial agreements.

0.0.3 TRAINING DEVELOPMENT PROGRAMME



Estimated Costs:
USD 0.8 million (1984)
USD 0.8 million (current prices)

Financing:
Requested: USD 0.8 million
Foreign currency part: 100%

Executing Agency:
Southern Africa Transport and Communications Commission

Start:
1984

Duration:
1 year

Scope

To promote the development of training within the transport and communications sector in the Member States. The project encompasses three separate regional training activities.

Contents

The project encompasses all training activities which at this stage are considered urgently needed and which not yet have been defined as separate projects. Training has high priority and the Technical Unit of SATCC will be closely involved in the initiation and development of the said activities. There is, however, a need for supplementary technical assistance and outside financing.

Three separate activities have been identified of which one has been completed. They are described in further detail in Sections 4.3 and 6.3 of the Report. The activities included in the project are listed below. Preliminary cost estimates are indicated in brackets:

(1) Road traffic and transport training (US dollars 500 000)

(3) Preparation of a telecommunications training project for Mozambique. (completed)

(4) Training course in national telecommunications network planning (US dollars 100 000)

The first activity includes an assessment of the needs for training within road traffic and transport. Based on an analysis of the needs, proposals on future training programmes and their regional organisation will be prepared. Due consideration will be given to increased regional use of present training institutions within this field. The last activity covers planning and implementation of training courses.

Originally transport management training was included as subproject (1). Now it has been combined with road traffic and transport training.

Status

Terms of Reference have been prepared for (1) and (4). Italy, Canada, Norway and Sweden have been approached for financing.

Action

Conclusion of financial agreements for both outstanding activities.

August 1984

0.0.4 TRANSIT TRANSPORT PROJECT FOR THE SOUTHERN AFRICA REGION (UNDP/UNCTAD PROJECT RAF 77/017)

Estimated Costs:

USD 2.0 million, covering the extension 1984 through 1986

Financing:

- Proposed UNDP allocation USD 0.6 million
- Requested: USD 1.4 million

Executing Agency:

UNCTAD/SATCC

Start:

1979 (main project 1980), extension 1984

Duration: Presently 1979/84, extension envisaged up to 1986

Scope : Improvement of the performance and utilization of existing transit transport facilities in the region in order to achieve lower cost and more efficient service for the landlocked countries concerned.

Contents : The first phase of the Project was focused on identifying and analysing the problems and bottlenecks in the regional transit transport system and on suggesting means for overcoming these. In 1983 the Project entered an operation orientated second phase.

The envisaged extension 1984 through 1986 of the Project is geared to assist SATCC on operational and organizational matters in the regional transport system.

Status : Funds have been secured until 1984 (USD 3.35 million) for the Project and its programme has been approved directed towards facilitation of traffic flows and operational co-ordination. The total costs of the extension until the end of 1986 are estimated to be USD 2.0 million of which USD 0.6 million is expected to come from UNDP funds earmarked for SATCC.

Action : The Project RAF 77/017 will mainly assist SATCC at the level of the Groups of Experts established within Project No. 0.0.2, Operational Co-ordination Development Programme, in particular those dealing with ports and shipping, railways and road traffic and transport.

August 1984

0.0.5 SATCC TECHNICAL SERVICES FUNDS

Estimated Costs:
According to work programme to be prepared

Financing:
Secured: USD 5 million

Executing Agency:
Southern Africa Transport and Communications Commission

Start:
1985

Duration:
3 years

Scope — To contribute within the SATCC Member States for the identification, analysis and resolution of current and potential bottlenecks in the regional transportation and communications systems.

Contents — The Funds are available for the following types of activities and studies:

- Activities related to the work of the Groups of Experts on operational co-ordination;
- Training, studies and courses;
- Project identification and preparation, studies in this connection;
- General tasks of regional importance beyond the capacity of the SATCC Technical Unit.

SATCC, acting through the Technical Unit, will be responsible for identification and direction of implementation of the tasks to be financed by the funds.

Status: — During the SADCC Lusaka Conference Canada and Norway pledged to finance the Technical Services Funds.

An agreement is being finalized with CIDA on Canadian Dollars 6 million (USD 4.6) for a three years period (1985-87). Two Canadian consultancy firms will be engaged,one for Telecommunications and one for Surface Transport and Civil Aviation.

Similarly, an agreement is being finalized with NORAD on NOK 3 million (USD 0.4 million) for the same purposes.

Action — SATCC/TU, in Co-operation with the SATCC Member States and Groups of Experts on Operational Co-ordination are to identify tasks to be implemented within this project.

September 1984

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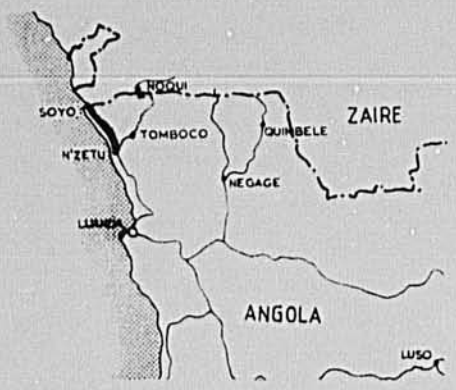
1.1.1 STUDY OF THE ROAD N'ZETO - SOYO



Estimated Costs:
USD 1.0 million (1984 prices)
USD 1.1 million (current prices)

Financing:
Requested: USD 1.1 million
Foreign currency part: 100%

Executing Agency:
Ministry of Construction,
Angola

Start:
1985

Duration:
1.5 years

Scope Feasibility and engineering studies concerning the road N'Zeto-Soyo (160 km) in northwestern Angola.

Contents The existing road between N'Zeto and Soyo is a poor earth road with difficulties of passage and maintenance.

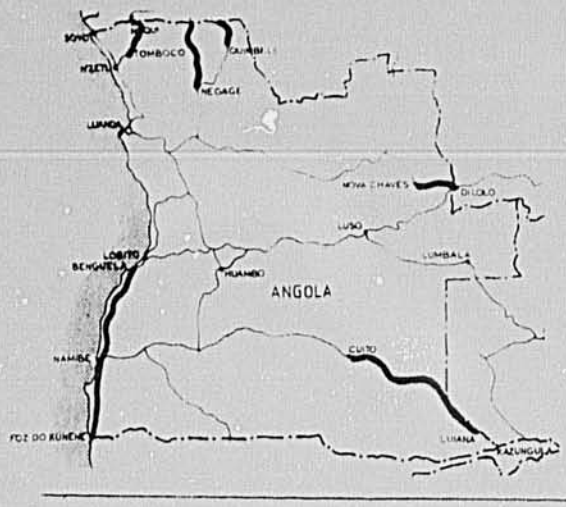
The construction of a new road of adequate standard is a high priority for the Government. This is justified by the economic importance of the area of influence of the road, including existing oil storage and loading facilities, ongoing off-shore oil exploration and the imminent start of exploitation of the phosphate deposits in the area, as well as projects for agricultural development.

Status The project is included in the programme of the United Nations Transport and Communications Decade for Africa 1978-1988. Terms of Reference for the studies have been drafted. The African Development Bank has been approached for financing of the studies.

Action Follow-up of financing.

August 1984

1.1.2 STUDIES OF SIX ROADS IN ANGOLA



Estimated Costs:
USD 2.0 million (1984 prices)

Financing:
Required : USD 2.0 million
Foreign currency part: 100%

Executing Agency:
Ministry of Construction, Angola

Start:
1985

Duration:
4-6 months for each study

Scope — Feasibility studies of the following six roads:

Ombaca - Lucira - Foz do Cunene (Namibian border), 400 km;

Tomboco - Noqui (Zaire border), 180 km;

Nova Chaves - Luau (Zaire border), 120 km;

Quimbele - Saca (Zaire border), 100 km;

Negage - Maquela - Banza Sosso (Zaire border), 290 km;

Cuito Cuanavale - Luiana (Zambian border), 650 km.

Contents — These projects aim at providing links with the neighbouring countries. Earlier studies exist in some sections.

Status — The projects have been included in the programme of the United Nations Transport and Communications Decade for Africa 1978 - 1988. Preliminary programmes for studies and implementation have been prepared.

Action — Financing for studies to be sought.

August 1984

1.2.2 STUDY ON JWANENG - MAMUNO (NAMIBIA BORDER) ROAD LINK

Estimated Costs:
USD 0.6 million (1984 prices)

Financing:
Requested: USD 0.6 million
Foreign currency part: 100%

Executing Agency:
Ministry of Works and Communications, Botswana

Start:
1985

Duration:
8 months

Scope: Feasibility Study for the construction of a new all weather heavy traffic road between Jwaneng and the Namibia border at Mamuno, with a spur to Ghanzi, about 620 km.

Contents: At present the section Jwaneng-Lobatse is complete to paved standard.

A temporary gravel road has been constructed between Jwaneng and Sekoma Pan (approx. 80 km)

The proposed road Jwaneng-borderpost at Mamuno will be the main road link between Botswana and Namibia and an essential part of Botswana's link to the Namibian Atlantic ports.

A spur road (130 km long) to connect the road with Ghanzi, the main administrative centre and highly productive cattle area in western Botswana, is included in the project.

The route is selected on the basis of surveys carried out both in the field and on Landsat imagery and on the basis of availability of sufficient quantities of suitable gravel for the pavement.

A materials survey has been carried out between Jwaneng and Ghanzi by the T.R.R.L (UK) and reasonable quantities of gravel (mainly calcrete) have been found along the proposed alignment.

A comprehensive experiment is being monitored on the road between Kanye and Jwaneng. The trial sections (22 in all) will give answers to the special problems related to road building in Kalahari desert conditions (soils, pavemant, design etc.). Also a surfacing experiment (about 2 km) with low cost materials has been completed in June 1984.

The construction cost is estimated to USD 80 million in 1983 prices. Project will be split up into several contracts.

Status: Financing of a major water study for construction water is expected from the Government of Botswana (1.5 million USD). Terms of reference for the feasibility study of the road have been prepared.

Action: Financing is being sought for the feasibility study.

1.3.1 UPGRADING OF THE ROAD MOHALE'S HOEK – QUTHING – QACHAS NEK

Estimated Costs:
USD 92 million (current prices)

Financing:
Secured : USD 57 million
Requested: USD 35 million
Foreign currency part: 80%

Executing Agency:
Ministry of Works, Lesotho

Start:
1983

Duration:
5 years for all sections

Scope: To upgrade the Southern Perimeter Road.

Contents: The aim of the project is to decrease Lesotho's dependence on the South African transport network. The Southern Perimeter Road will also be important for the development of the southern and south-eastern parts of Lesotho.

Road section:	Mohale's Hoek -Quthing	Quthing-Mount Moorosi, Mphaki-Qachas Nek	Mt Moorosi -Mphaki
Length of Section	51 km	155 km	Exist. 59 km Desig. 38 km
Nature of works	Upgrading	Reconstruction	Realignment
Design standard	Bitumen	Gravel	Gravel
" width	6.7 + 2 x 1.5	6 m	6 m
Cost, USD million	33	36	23
Financing secured or in progress	EEC, GOL 16	USAID, GOL 23	USAID, GOL 18
Status	Tenders invited for Mohales Hoek-Mekaling Bridge section (25,8 km) on EEC financing.	Design completed. Reconstruction commenced.	Construction works completed.

Action: EEC and USAID being approached by Government for financing the shortfall of approx. USD 35 million.

1.3.2 UPGRADING AND RECONSTRUCTION OF THE ROAD TAUNG - MOKHOTLONG - SANI TOP

Estimated Costs:
USD 47 million (1984 prices)
USD 55 million (current prices)

Financing:
Requested: USD 55 million
Foreign currency part : 80%

Executing Agency:
Ministry of Works, Lesotho

Start:
1985

Duration:
3 years

Scope To reconstruct the existing track to classified road standard, 128 km.

Contents The aim of the project is to connect the eastern part of the country with the district headquarters at Thaba Tseka and with the road to Maseru. A priority project for the Government.

Planned standard is bitumen surfacing with mainly 8 m wide formation (6m carriageway and 2 x 1 m shoulders), except 7.2 m on rocky sections.

The forecasted traffic volumes for 1985 are 160 vehicles per day between Taung and Mokhotlong and 75 between Mokhotlong and Sani Pass.

During the last year some spot investment works have been carried out on the road section Thabang-Sani Pass in order to upgrade the road to all weather standard. These works have been financed by the World Bank under the Third Highway Project. As a result the traffic on this road section has increased from about 10 to 50 vehicles per day.

Status Despite of the above mentioned spot improvements the road section needs more extensive upgrading. A feasibility study and engineering designs have been completed with financing by UK.

Action Financing of the upgrading and reconstruction works is being sought. Preliminary approach made by SATCC to ADB. Government to follow-up.

August 1984

1.3.3 UPGRADING OF THE ROAD THABA TSEKA - TAUNG - MPITI

Estimated Costs:

USD 40 million (1984 prices)
USD 54 million (current prices)

Financing:

Requested: USD 54 million
Foreign currency part: 80%

Executing Agency:

Ministry of Works, Lesotho

Start:
1985

Duration:

5 years for design and construction

Scope — To upgrade to all weather standard the road Thaba Tseka-Taung-Mpiti, 180 km.

Contents — The project is part of a scheme to reduce the dependence on the South African transport system. This section is part of a north-south road connection in the eastern Lesotho. Extensive agricultural projects are in progress in Thaba-Tseka area with support from the Irish Aid and CIDA. The road is important for this scheme.

The existing road is a simple track in bad condition. A low-level bridge is not passable during the rainy season. Stream crossings and drainage have to be reconstructed. Planned standard is Gravel 3, which means 6.0 m formation.

Status — The feasibility study, financed by CIDA, shows a low viability of the project. However, the Government of Lesotho gives high priority to the road.

Action — Funds are sought for the design and construction of the road.

August 1984

1.3.4 CONSTRUCTION OF A NEW ROAD RAMABANTA - SEMONKONG - SEKAKE

Estimated Costs:
USD 82.5 million (1984 prices)
USD 95.0 million (current prices)

Financing:
Secured: USD 0.3 million (design of first section)
Requested: USD 94.7 million
Foreign currency part: 80%

Executing Agency:
Ministry of Works, Lesotho

Start:
1985

Duration:
3 years

Scope — Upgrading to classified gravel road standard of the existing track Ramabanta-Semonkong, approx. 50 km, and construction of a new road Semonkong-Sekake, approx. 60 km.

Contents — The road connects the south-eastern part of the Lesotho Perimeter Road directly to Maseru, thus integrating this part of the country with the capital. The connection will reduce the dependence on the South African transport system.

The existing track Ramabanta-Semonkong is passable by four-wheel drive vehicles only in good weather. Between Semonkong and Sekake there is no road at all.

The feasibility study completed in 1979 shows a low viability for the construction to bitumen standard of the road section Semonkong-Sekake.

All the road passes through mountainous terrain with rough conditions.

Status — Design of section Ramabanta-Semonkong is completed financed by KfW.

Action — Financing for the design of the Semonkong-Sekake section and for the construction of both sections is being sought. Government has approached KfW for financing of the section Ramabanta-Semonkong, which is more urgent of the two sections.

August 1984

1.3.5 UPGRADING OF THE ROAD MOKHOTLONG - OXBOW

Estimated Costs:
USD 30 million (1984 prices)
USD 36 million (current prices)

Financing:
Required : USD 36 million
Foreign currency part: 80%

Executing Agency:
Ministry of Works, Lesotho

Start:
1985

Duration:
3 years

Scope	Upgrading to bitumen/gravel standard of the road section Moktholong-Oxbow, 114 km.
Contents	The section Mokhotlong-Oxbow is part of the main northern route linking Maseru through Butha-Buthe to the eastern and southeastern parts of Lesotho. At present, the section is a track through mountainous terrain, in places negotiable only by four-wheel drive vehicles in dry season.
Status	The engineering design has been completed under the World Bank Third Highway Project.
Action	Financing is required for upgrading work.

August 1984

1.4.1 STUDY ON THE UPGRADING OF THE ROAD MANGOCHE - CHIPONDE/MANDIMBA - MITANDE

Estimated Costs:
USD 0.2 million (1984 prices)

Financing:
Required : USD 0.2 million
Foreign currency part : 100%

Executing Agency:
Ministry of Works and Supplies, Malawi,
Ministry of Construction and Water
Mozambique

Start:
Study 1984

Duration:
6 months

Scope — Feasibility Study on the upgrading to bitumen standard with some realignments of 51 km of the main road M3 in Malawi and of 51 km of the EN8 in Mozambique.

Contents — Objective of this project is to open up a link from the central part of Malawi to Mozambique and the nearest ports, Pemba and Nacala.

The road link is also expected to serve as a through-pass between various provinces of Mozambique, i.e. Niassa east of Malawi and Tete west of Malawi. The road will be of importance in accelerating agricultural development in the area.

The existing road has been realigned and improved on one section near Mangoche and one section above the escarpment to Namwera. The section up to the escarpment has a very low standard with narrow hairpin bends, damaged surface and dangerous bridges. The section between Namwera and Chiponde is an earth road in a bad condition. The pass across the border is a track usable only by fourwheel drive vehicles.

The route in Mozambique is an earth road which is expensive to maintain. The topography traverses easy gently undulating terrain.

The average daily traffic in 1977 was 119 vehicles at a point below the escarpment in Malawi. This might by 1980 have reached about 150 vehicles. According to the records kept by the customs, the border was in 1979 and 1980 passed by 3-13 vehicles per month. The construction cost is estimated to USD 29.5 million in 1983 prices.

Status — Terms of reference for feasibility and engineering studies have been prepared.

Action — Financing of the feasibility study is being sought.

August 1984

1.4.2 STUDY ON THE UPGRADING OF THE ROAD BLANTYRE - MULANJE/MILANGE - MOCUBA

Estimated Costs:
USD 1.0 million (1984 prices)
USD 1.1 million (current prices)

Financing:
Requested: USD 1.1 million
Foreign currency part: 100%

Executing Agency:
Ministry of Works and Supplies, Malawi
Ministry of Construction and Water, Mozambique

Start:
1985 (study)

Duration:
18 months

Scope — Feasibility and engineering studies on the rehabilitation and upgrading of the existing road connection to bituminized standard. The total length of the road is 270-290 km depending on route in Malawi. The Mozambican section is 185 km.

Contents — The aim of the project is to provide an all-weather road connection between Malawi and Mozambique constructed to class 1 bitumen standard. The road link will serve the trade between the two countries and provide a link between Malawi and the ports of Mozambique, especially Beira. The road passes in both countries through rich agricultural areas which are under development for local consumption and export. The road is also of touristic interest.

The existing road in Malawi (103 km) is on most of the section bituminized to a single lane width which is not sufficient for the existing traffic. The load bearing capacity is insufficient, the drainage cannot cope with the heavy rainfalls and the alignment is poor. Thus, the maintenance costs are high. An alternative routing in Malawi is along an existing gravel road which is 87 km long.

In Mozambique the existing road is a 6 m road of mainly earth standard, the alignment generally following the terrain. Existing condition is poor.

The traffic density on the Malawi section varies from more than 600 to less than 50 vehicles per day.

In Mozambique the traffic flow 1983 has been estimated not to exceed 100 vehicles per day. A traffic count in 1979 shows an average daily traffic of 30 trucks per day.

The border was in 1979 passed by an average traffic of 3.6 vehicles per day. This figure is expected to increase rapidly due to the expected development of foreign trade and regional co-operation and to improved road conditions.

Status — Terms of reference have been prepared for feasibility and engineering studies. Engineering designs exist for about 100 km of the Mozambique section.

Action — Financing for the studies is being sought. USAID has expressed interest.

August 1984

1.4.3 ROAD LINK KARONGA - MBEYA

Estimated Costs:
USD 1.8 million (1984 prices)

Financing:
Secured: USD 1.8 million
Foreign currency part: 90%

Executing Agency:
Ministry of Works and Supplies, Malawi

Start:
1984

Duration:
8 months

Scope — Temporary improvement of the link between northern Malawi and Tanzania and engineering design of a new permanent road link.

Contents — A new route from Karonga in Malawi to Ibanda on the Itungi-Mbeya road in Tanzania is part of the Regional Trunk Road Network and will link the Malawi road network to the Tanzam Highway and TAZARA, thus providing Malawi with a permanent outlet to the port of Dar es Salaam. The new link will assist in easing the problems of import and export traffic for Malawi and also promote agriculture and tourism. Furthermore, the link will give better access to the Ngana coal field in northern Malawi.

Only about 50 km of road and two bridges are needed to link up with the existing bitumen road from Itungi to Mbeya in Tanzania.

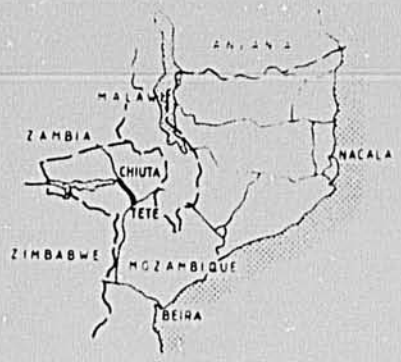
Status — EEC has agreed to finance the full engineering design (0.5 million USD) of the new permanent link, envisaged to be open to traffic in 1988. Meanwhile, emergency improvement works are in progress financed by UK (1.3 million USD) to allow, as a temporary solution, the opening of the road shortly.

Action — Completion of the emergency improvement works and the engineering design of the permanent link.

Securing of financing for the construction of the new road (EEC).

August 1984

1.5.1 REHABILITATION OF THE TETE-CASSACATIZA ROAD, SECTION MATUNDO-CHIUTA



Estimated Costs:

USD 6.0 million (1984 prices)
USD 6.5 million (current prices)

Financing:

Requested: USD 6.5 million
Foreign currency part: 75%

Executing Agency:

Ministry of Construction and Water, Mozambique

Start: 1985/86

Duration: 2 years

Scope • To rehabilitate 86 km of the road Tete-Cassacatiza, section Matundo-Chiuta.

Contents The main direct road between Mozambique and Zambia, Tete - Cassacatiza-Katete has during the last years been completed by the construction of the road section Bene-Cassacatiza and further to Katete on the Lusaka-Chipata road in Zambia.

One main objective of the route is to provide transport facilities between Zambia and the railway Moatize-Beira.

The road section Matunda-Chiuta is asphalt-paved. It has a cross-section of 6.0 m wide carriageway and 1.5 m wide shoulders. The road has been damaged by heavy vehicles and needs reinforcement.

The traffic can be estimated to be in the magnitude of 100-200 vehicles per day.

Status The construction of the road Chiuta-Cassacatiza is now finalized which stresses the urgency of the rehabilitation of the section Matundo-Chiuta.

Action Financing of the project is being sought.

August 1984

1.5.2 REHABILITATION OF THE ZIMBABWE - TETE - MALAWI ROAD

Estimated Costs:
USD 20 million (1984 prices)
USD 20 million (current prices)

Financing:
Secured : USD 20 million
Foreign currency part : 75%

Executing Agency:
Ministry of Construction and Water
Mozambique

Start:
Bridge : 1983
Road construction : 1984

Duration:
2.5 years (road)

Scope

Reinforcement and rehabilitation of the road Zimbabwe border at Cuchamano - Tete - Moatize - Zobué at the Malawi border, 273 km.

Reparation of the Tete bridge over River Zambezi.

Contents

The aim of the project is to provide a road link of suitable standard for traffic Zimbabwe - Malawi, Mozambique - Zambia and Mozambique - Malawi. It is also part of the main road link to the Province of Tete.

The road is asphalt - paved with a width of about 6 m and shoulders 2 m. Sections of the road are broken down and the road needs reinforcement.

Erosion at culverts and other drainage are in urgent need of repairs.

In connection with these works the road will be widened to 6.5 m carriage way, with two 1.0 m surfaced shoulders.

The bridge at Tete has been partly damaged due to flood and needs an extensive rehabilitation.

The traffic varies between 80 vehicles per day at the two borders and 600 vehicles per day in the vicinity of Tete. Of the international traffic a major part consists of heavy vehicles.

For the connecting road within Malawi between the border and Blantyre, reconstruction work is in progress.

Status

Financing of the project has been secured from the Kuwait Fund for Arab Economic Development. The project includes a nation wide road marking programme.

A contract has been let for the bridgeworks and work commenced in April 1983, due to be completed in November 1984. Tenders for road works were closed in May 1984 and are at present being evaluated.

Action

Adjudication of road works contract and start of works in late 1984.

1.5.3 STUDY OF THE REHABILITATION OF THE ROAD BEIRA-CHIMOIO-ZIMBABWE BORDER

Estimated Costs:
USD 0.5 million (1984 prices)
USD 0.5 million (current prices)

Financing:
Secured: USD 0.5 million
Foreign currency part : 75%

Executing Agency:
Ministry of Construction and Water
Mozambique

Start:
1984

Duration:
8 months

Scope — Study of the rehabilitation of the road (280 km).

Contents — The road is the major arterial from the interior to the port of Beira and provides a connection at its western end with Zimbabwe (see Project 1.9.3). The road is linked to the main north-south road, in Mozambique, and west of Chimoio meets the road from Zambia and western Malawi via Tete.

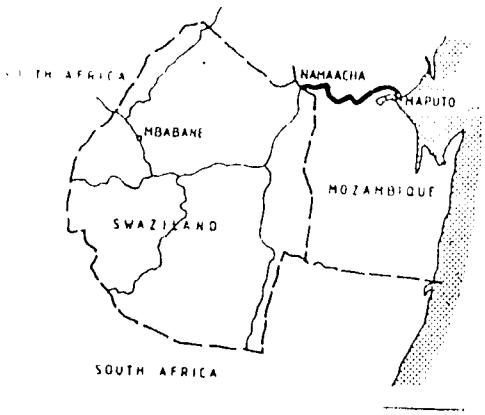
The existing road is asphalt-paved with a width varying between 6m and 7m. West of the Pungwe River it is in poor condition and needs rehabilitation. In the section Beira-Pungwe there are problems caused by poor drainage and flooding which may require full or partial reconstruction of the road. Extensive reconstruction will be required on various sections between Beira and Tica (km 76), in particular across the Pungwe flood plain. Rehabilitation will also be required over various sections in the remaining length of the road. Importantly, a much upgraded maintenance operation will be necessary over the whole road to preserve the existing and improved asset, and to allow it to take increasing traffic as more normal conditions develop.

At present there is little or no traffic over the lateral secondary and feeder roads. Although major increases in international heavy traffic are not expected, because of the policies of regulating freight traffic to rail, in the past there was considerable tourist traffic between the landlocked countries and Beira and over a period this could be regenerated. The road also provides an important link for commercial communications related to business on the shortest route from Zimbabwe and Zambia to the coast at Beira.

Status — The Australian Government has financed a feasibility study for the project. The study is in progress, with its conclusion scheduled for December 1984.

Action — Completion of the feasibility study, approach to potential donors for financing of engineering design and works.

1.5.4 REHABILITATION OF THE ROAD CONNECTION TO SWAZILAND



Estimated Costs:
USD 14 million (1984 prices)
USD19.5million (current prices)

Financing:
Secured : USD19.5million
Foreign currency part: 80%

Executing Agency:
Ministry of Construction and Water
Mozambique

Start:
1984 design, 1986 construction

Duration:
4 years (design, tendering and works)

Scope — Rehabilitation and upgrading of the road Maputo-Boane-Namaacha-Border to Swaziland, 75 km.

Contents — The project aims at providing a road connection of adequate standard between Swaziland and Maputo, primarily with its port facilities (see Project 1.6.1). The 33 km stretch between Maputo and Boane is also part of the road connection between Maputo and South Africa.

The existing road is asphalt-paved, mostly in poor condition. A section of about 62 km of the total 75 km has a heavily damaged surface, broken down along the edges and very bumpy. The width is less than 6m along most of the section and does not provide room for overtaking and passing on the damaged sections.

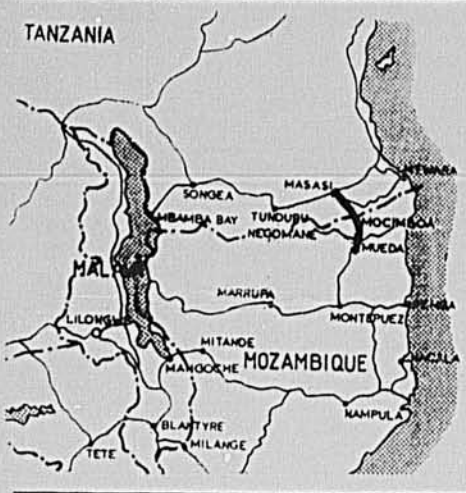
The project includes rehabilitation, reinforcement and upgrading of the road.

Status — A feasibility study has been completed. Tenders for design have been submitted. Financing has been secured from Sweden, including works.

Action — Engineering design 1984-85. Tender invitation and contract negotiations 1985. Construction works 1986-88.

August 1984

1.5.5 STUDY ON UNITY BRIDGE AND ACCESS ROADS



Estimated Costs:
USD 0.9 million (1984 prices)

Financing:
Secured : USD 0.9 million
Foreign currency part: 90%

Executing Agency:
The Governments of Mozambique and Tanzania.

Start:
1985

Duration:
10 months

Scope — Technical and economic feasibility study, including preliminary design, for the construction of a new road link between Mozambique and Tanzania.

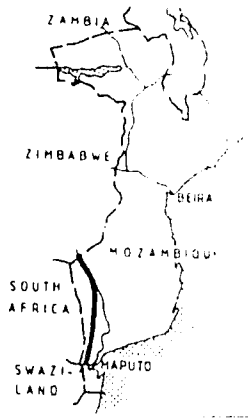
Contents — The Governments of Mozambique and Tanzania have agreed upon the construction of the Unity Bridge across the river Ruvuma at the border between the two countries. The proposed location of the bridge is in the area between Mocimboa do Rovuma in Mozambique and Maparawe in Tanzania. The project includes the upgrading/construction of the bridge access roads between the river and Mueda in Mozambique (90 km) and between the river and Masasi in Tanzania (55 km). Estimated cost of construction of the bridge and access roads is about 40 million USD. The proposed new link is part of the Regional Trunk Road Network. Upgrading work is in progress on the Lindi - Kibiti section of the onward connection in Tanzania.

Status — Terms of Reference for the study have been finalized. The African Development Bank will finance the study using Swiss consultancy funds made available to the Bank for that purpose.

Action — Finalization of the financing arrangements and launching of the study. Conclusion of a protocol agreement between the Governments of Mozambique and Tanzania for the provision of the necessary facilities for the consultant to be charged with the study.

August 1984

1.5.6 STUDY ON A NEW ROAD LINKING SOUTHERN ZIMBABWE WITH THE MAPUTO AREA



Estimated Costs:
USD 0.4 million (1984 prices)
USD 0.4 million (current prices)

Financing:
Required : USD 0.4 million
Foreign currency part: 90%

Executing Agency:
Ministry of Construction and Water, Mozambique

Start:
1985

Duration:
8 months

Scope — To study the feasibility of a road link connecting Chicualacuala at the Mozambique/ Zimbabwe border with the Maputo area, approximately 500 km.

Contents — The project includes a feasibility study on a new road which should serve the following purposes:

(1) Provide a road link between the Maputo area and Zimbabwe;

(2) Provide a road link between Swaziland and Zimbabwe;

(3) Open up new areas for development;

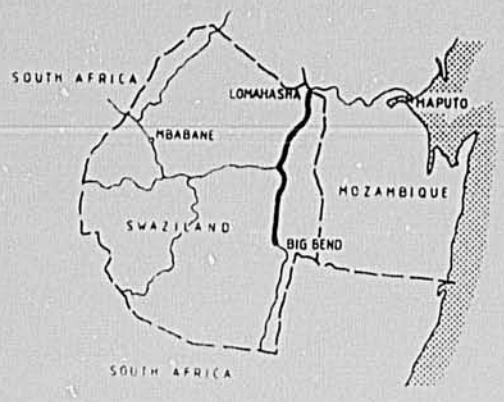
(4) Link together a number of towns, villages and rural areas.

In Zimbabwe, a feasibility study is in progress concerning a new road link between Sango and Rutenga. This road is a direct continuation of the proposed road in Mozambique, linking Chicualacuala to the main road Harare - Beit Bridge. The study, financed by the Italian Government, is due to be completed within 1984.

Status — Terms of Reference have been prepared.

Action — Financing is being sought for the feasibility study in Mozambique. Further action after the results of the feasibility studies available.

1.6.1 REHABILITATION AND UPGRADING OF THE ROAD MOZAMBIQUE BORDER AT LOMAHASHA - SITEKI - BIG BEND



Estimated Costs:
USD 21 million (1984 prices)
USD 26 million (current prices)

Financing:
Secured: USD 11.7 million
Required: USD 14.3 million
Foreign currency part: 85%

Executing Agency:
Ministry of Works, Power and Communications, Swaziland

Start:
1984 (Section 1)

Duration:
2 ½ years (Section 1)

Scope Upgrading and bitumenization of the road sections:

1. Lomahasha - Lonhlupenko junction west of Siteki, 52.5 km.
2. Lonhlupenko - junction north-west of Big Bend, 39.5 km.

Contents The project is a part of a systematic improvement scheme for the main road network in Swaziland. It will improve Swaziland's road connections to the port of Maputo (see Project 1.5.4). Section 1 has the first priority for the Government at present.

The improvement of the two road sections is also very important for the ongoing agricultural schemes in the eastern parts of Swaziland, sugar production, irrigation projects, small scale farming, cattle ranching and agro-industry. Most of the existing and potential production is export orientated with Maputo as its natural sea outlet. Much of these export-products is dependent on road transportation.

The existing road sections are of gravel standard. The design of the upgrading includes widening to 6.7 m asphalted carriageway on a 10.3 m formation.

The road section Lomahasha-Siteki has traffic volumes between 175 and 700 vehicles per day. A feasibility study has shown internal rates of return between 10 and 29% for different sections of the road. However, the development of the Mozambique-bound traffic seems to be underestimated in this study.

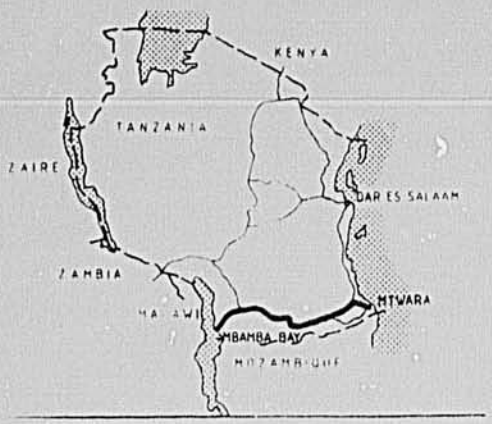
The road section Siteki-Big Bend has traffic volumes between 150 and 300 vehicles per day. Internal rates of return for this section are rather low.

Status The financing is secured by ADB, Sweden and Swaziland for construction of the section Lomahasha-Lonhlupenko, and work was started in February 1984.

Action Financing to be secured for the section Lonhlupenko-Big Bend.

August 1984

1.7.1 REHABILITATION AND UPGRADING OF THE MTWARA - SONGEA - MBAMBA BAY ROAD



Estimated Costs:
USD 250 million (1984 prices)
USD 335 million (current prices)

Financing:
Required: USD 335 million
Foreign currency part: 75%

Executing Agency:
Ministry of Communications and Works, Tanzania

Start:
1985

Duration:
5 years

Scope — To rehabilitate and upgrade the Mtwara-Songea-Mbamba Bay road on the section Masasi-Songea-Mbamba Bay (605 km).

Contents — The main aim of the Southern Trunk Road as a regional project is to carry transports to the port of Mtwara. It will also serve as a feeder road to shipping services on Lake Malawi from Mbamba Bay, which now are operated only on ports within Tanzania, but which also might be of interest to Malawi (compare project No. 3.7.1).

The main importance of the road will be to serve the rich agricultural zone in the south and south-west of Tanzania

The road section Mtwara-Masasi, 200 km, has been upgraded to bitumen standard in 1978. The existing road Masasi-Tunduru-Songea, 445 km, is partly earth, partly engineered gravel standard, 6.5 - 7 m wide, in a poor condition. The terrain is generally rolling to hilly. Reconstruction to bitumen standard will generally follow the existing road.

The existing road Songea-Mbamba Bay, 169 km, is gravelled on half of the length and the rest is earth. It is in poor condition due to low construction standards, e.g lack of adequate drainage and unsafe wooden bridges across rivers. The terrain is rolling to hilly and includes a mountainous stretch at the escarpment to the shore plain. As a trunk road, it should be upgraded to at least surface dressed standard. After realignment the road length will be reduced to 160 km.

The traffic volumes were in 1978 between 30 and 60 vehicles per day on the Masasi-Songea section and between 20 and 100 on the Songea-Mbamba Bay section.

Status — Detailed design and tender documents for the whole project were prepared in 1975. A review of the design and cost estimate is required.

Major repair works on the road section Songea-Masasi have been done with financial support from the World Bank. The Government of UK is financing the ongoing construction of the road Mkambako-Songea, due to be completed by the end of 1985. This road will link the proposed road to the Tanzam Highway.

Action — Financing is being sought for the review of the design and for the implementation of the project.

1.7.3 REHABILITATION/STRENGTHENING OF THE TANZAM HIGHWAY IN TANZANIA

Estimated Costs:
USD 50.0 million (1984 prices)
USD 62.0 million (current prices)

Financing:
Requested: USD 62.0 million
Foreign currency part: 65%

Executing Agency:
Ministry of Communications and Works, Tanzania

Start:
1984

Duration:
3½ years

Scope — Rehabilitation and strengthening of the Tanzam Highway in Tanzania.

Contents — The Tanzanian section (925 km) of the Tanzam Highway connects the port of Dar es Salaam with Tunduma at Tanzania/Zambia border via Morogoro, Iringa and Mbeya. The road was built to two lane paved standards with 6.7m wide carriageway in 1972. Apart from the flat terrain in the section between Dar es Salaam and Mikumi, the road traverses mostly rolling terrain.

This road carries considerable heavy national and regional traffic. The section between Dar es Salaam and Morogoro carries also traffic for Rwanda and Burundi. The traffic volume varies from about 900 vehicles per day between Dar es Salaam and Chalinze to 400 vehicles per day between Mbeya and Tunduma. About 70 per cent of this traffic consists of commercial vehicles.

The road pavement within certain sections has shown signs of distress in the form of potholes, surface cracks and surface deformation. At certain places, especially between Dar es Salaam - Mikumi (289 km) and Iyayi - Mbeya - Tunduma (228 km), the road has failed completely, with the pavement destroyed.

Status — A feasibility study for rehabilitation of the sections Zambia border - Iyayi and Dar es Salaam - Mikumi has been completed in June 1983. Detailed documents for the reconstruction works have been completed in October 1983.

Action — Financing of the rehabilitation work is being discussed with the World Bank.

August 1984

1.8.1 STUDY ON ANGOLA - ZAMBIA ROAD LINK

Estimated Costs:
USD 0.2 million (1982 prices)

Financing:
Secured : 0.2 million
Foreign currency part : 90%

Executing Agency:
Ministry of Works and Supply, Zambia
Ministry of Construction, Angola

Start:
1980

Scope — Feasibility study on the construction of an all-weather heavy traffic road connecting Kaoma in Zambia with Lumbala in Angola, about 370 km.

Contents — The proposed road Kaoma - Borderpost at Caripande - Lumbala - Luene will be one of the few road links between Zambia and Angola and will be essential for road transports to the Lobito Port.

In Angola the road section Luene - Lucusse has been completed and the section Lucusse - Lumbala is under construction up to paved standard. About 50 km to the Borderpost at Caripande remains to be upgraded.

In Zambia the road follows mainly existing unclassified gravel or earth roads.

Construction costs are estimated roughly at USD 80 million (1983 prices).

Status — The feasibility study financed by EEC was started in 1980. Preliminary findings based on work in Zambia were presented in 1981. Further work adjourned for the time being.

Action — Further action to be decided.

August 1984

1.8.2 STUDY ON KAZUNGULA BRIDGE AND THE PANDAMATENGA - VICTORIA FALLS ROAD

Estimated Costs:
USD 0.7 million (1984 prices)

Financing:
Requested: USD o.7 million
Foreign currency part: 90%

Executing Agency:
Ministry of Works and Supply, Zambia
Ministry of Works and Communications, Botswana
Ministry of Transport, Zimbabwe

Start:
1984

Duration:
8 months

Scope — Feasibility study of a bridge across the Zambezi River at Kazungula connecting Botswana and Zambia, with a road link via Pandamatenga and Victoria falls as an alternative.

Contents — The territories of the Republic of Zambia and Botswana are linked together at one single point on the middle of the River Zambezi. The point is the junction of the border lines between the four countries Botswana, Namibia, Zambia and Zimbabwe.

The Governments of Botswana and Zambia came to an agreement in 1981 on the construction of a bridge at Kazungula.

There is an existing ferry service operated by the Government of Zambia, which offers the only direct link between Zambia and Botswana. An interim solution could be provided by the improvement of the ferry service.

As this is a part of the Trans-East African Highway system, the proposed Kazungula Bridge would be an important link in the trans-continental route.

A new road link via Pandamatenga between the Nata-Kazungula road in Botswana and the Bulawayo-Victoria Falls road in Zimbabwe might provide an alternative route between Botswana and Zambia. Therefore this study has been combined with the Kazungula Bridge study.

Status — Terms of Reference for a feasibility study have been prepared in 1983 and accepted by Botswana, Zambia and Zimbabwe. An appraisal mission in 1983 financed by Norway concluded that the bridge would not be feasible and consequently there would be no need to undertake a comprehensive feasibility study. However, the Zambian Government has expressed its continued interest in the bridge, and ADB has indicated its support to have a full feasibility study carried out.

Action — The Government of Zambia is to convene the 3-partite Steering Committee of the project to co-ordinate the positions of the countries concerned, Botswana, Zambia and Zimbabwe. ADB is awaiting official positions and approach by the Governments in order to proceed further with eventual financing arrangements.

August 1984

1.8.3 REHABILITATION OF THE LUSAKA - KAFUE - LIVINGSTONE - KAZUNGULA ROAD

Estimated Costs:
USD 30 million (1984 prices)
USD 37 million (current prices)

Financing:
Secured : USD 5 million
Requested: USD 32 million
Foreign currency part: 60% (rehabilitation)
100% (engineering)

Executing Agency:
Ministry of Works and Supply, Zambia

Start:
1982

Duration:
3 years

Scope	Rehabilitation and upgrading of the road Lusaka - Kafue - Livingstone - Kazungula.
Contents	The road Lusaka - Kazungula (532 km) is in need of rehabilitation. Upgrading work has commenced in 1982 on the section Zimba - Livingstone (42 km), with completion of the section due in 1985. This road section is being upgraded from a 3.5 m wide surface to a 6.1 m bitumen surface with 2 m shoulders (US dollars 5 million). The remaining sections are of varying standards and show signs of deterioration. The normal recurrent maintenance funds are not sufficient for the necessary works. Engineering design has to be carried out for these sections. The implementation costs for the whole road are estimated to be US dollars 30 million in 1984 prices.
Status	Financing has been secured from Norway for remaining parts of the Zimba - Livingstone section. Terms of reference for a feasibility and engineering study of other sections have been prepared. Denmark is considering financing of the study (US dollars 0.7 million), together with 3 other roads in Zambia (projects 1.8.5, 1.8.6, 1.8.8).
Action	Completion on ongoing works, follow-up of financing arrangements for studies, carry out the studies.

August 1984

1.8.4 REHABILITATION OF THE ROAD KAFUE - CHIRUNDU

Estimated Costs:
USD 15 million (1984 prices)
USD 16,5 million (current prices)

Financing:
Secured : USD 16.5 million
Foreign currency part : 80%

Executing Agency:
Ministry of Works and Supply, Zambia

Start:
1983

Duration:
2 years

Scope — Strengthening and partial reconstruction of damaged sections of the Kafue-Chirundu road.

Contents — The Kafue - Chirundu road (92 km) is part of the main road connection between central Zambia and central Zimbabwe.The traffic demand has increased rapidly during the last years and the border post registers an average daily traffic of about 900 vehicles of which about 50 heavy vehicles.

A three - day, Friday - Sunday, traffic count on the road in July 1983 showed 667 vehicles/day of which 42% trucks at a point near the Lusaka - Livingstone road and 391 vehicles/day of which 66% trucks at a point close to Chirundu.

Portions of the road are in a bad condition with failures in the pavement and settlements due to bad underground. The road needs strengthening and partly reconstruction.

Status — Financing for the project has been secured from USAID. The first phase of the works, consisting of resealing by chip and spray, has been completed. The second phase, including strengthening, improvement of culverts and partial realignment is in progress, with completion scheduled for September 1985.

Action — Completion of construction works.

August 1984

1.8.5 REHABILITATION OF THE NDOLA - LUSAKA ROAD

Estimated Costs:
USD 22 million (1984 prices)
USD 25 million (current prices)

Financing:
Required: USD 25 million
Foreign currency part: 60%

Executing Agency:
Ministry of Works and Supply, Zambia

Start:
1984 (study)

Duration:
3 years

Scope — To carry out surveys on the condition of the existing Ndola-Lusaka road (321 km), to assess the treatment required for rehabilitation, and to carry out the necessary works.

Contents — The Ndola-Lusaka road is comprised of the Lusaka-Kabwe T2 section of some 138 km and the Kabwe-Ndola section, T3, which is 183 km.

This road was built more than 15 years ago and carries a heavy volume of traffic. The average daily traffic in 1977 was 3051 vehicles per day with 50 per cent heavy vehicles. Recent counts show the flows to be above 2900 vehicles per day with 45 per cent heavy vehicles. There is evidence of damage to the road due to overloading.

Rehabilitation works have been carried out over selected sections in the past including reconstruction, surface dressing and premix overlay. However, due to the lack of funds it has not been possible to keep up with the deterioration and it is now imperative to take urgent action.

At present, only normal maintenance is being carried out as and when funds are available.

Status — Some departmental investigations have taken place on the condition of the pavement. Terms of Reference for a feasibility and engineering study have been prepared. Denmark is considering financing of the study (USD 0.6 million) together with three other roads in Zambia (Projects 1.8.3, 1.8.6, 1.8.8). ADB has been approached for financing of the works.

Action — Follow-up of financing arrangements, carry out the study

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August 1984

1.8.6 REHABILITATION OF THE LUSAKA - CHIPATA ROAD

Estimated Costs:
USD 25 million (1984 prices)
USD 32 million (current prices)

Financing:
Requested: USD 32 million
Foreign currency part: 60%

Executing Agency:
Ministry of Works and Supply
Zambia

Start:
1984 (study)

Duration:
3 years

Scope

To carry out surveys on the condition of the Lusaka - Chipata road, to asses the treatment required and to carry out the necessary reconstruction, premix overlay and/ or surface dressing works.

Contents

The Lusaka - Chipata road T4 is some 589 km in length. The last section from Luangwa Bridge to Nayimba across the escarpment was tarred in 1972.

Earlier sections are showing signs of deterioration and normal recurrent maintenance funds are not sufficient to arrest this.

The average daily traffic is in the region of 200 to 250 vehicles per day with 45 per cent of heavy vehicles.

Urgent rehabilitation works are required. Pavement investigations are needed to assess priorities and types of treatment or rehabilitation.

At present only normal maintenance is being carried out as and when funds are available.

Status

Some departmental investigations have taken place on the condition of the road pavement.

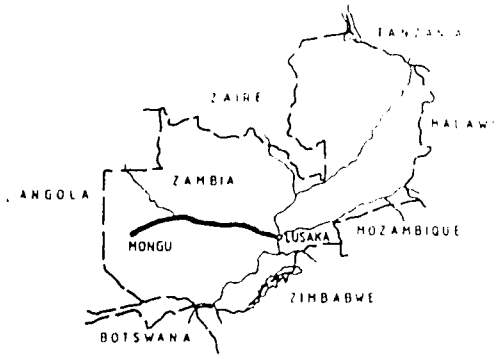
Terms of Reference for a feasibility and engineering study have been prepared. Denmark is considering financing of the study (USD 0.7 million) together with three other roads in Zambia (projects 1.8.3, 1.8.5,1.8.8). The ADB co-ordination Committee has selected the project for Bank participation. USAID has also expressed interest.

Action

Follow-up of financing arrangements, carry out the study.

August 1984

1.8.7 IMPROVEMENT OF THE ROAD LUSAKA - MONGU



Estimated Costs:
USD 40 million (1984 prices)
USD 48 million (current prices)

Financing:
Required : USD 35 million
Foreign currency part: 60%

Executing Agency:
Ministry of Works and Supply, Zambia

Start:
1985

Duration:
3 years

Scope — To carry out surveys on the condition of the Lusaka-Mongu road, M9, to assess the treatment required and to carry out the necessary reconstruction, premix overlay and/or surface dressing works.

Contents — The Lusaka-Mongu road, M9, is 384 km in length. The section between Lusaka and Kafue Hook Bridge was completed by a Chinese team in 1973, together with the bridge. The section from the bridge to Mongu was finished by private contractors in the mid-1960's.

Traffic flows are approximately 700 vehicles per day with over 60 per cent heavy vehicles. Due to poor soil conditions, long sections of the road are showing signs of distress and already several kilometres have had to be reconstructed. Some surface dressing works have been made.

In order to avoid further deterioration, rehabilitation works of a large scale are considered essential. Investigations of the road pavement are needed to determine correct treatment.

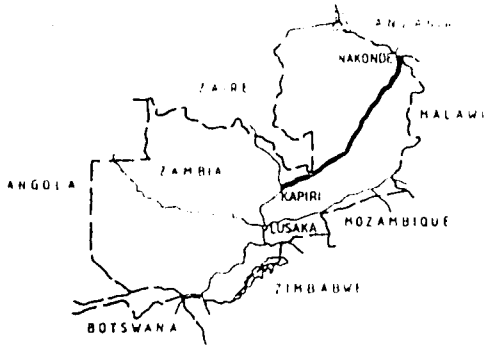
At present, only a normal maintenance is being carried out as and when funds are available.

Status — Some departmental investigations have taken place on the condition of the road pavement. Terms of Reference for an engineering study have been prepared. ADB has been approached for financing of works.

Action — Financing to be secured for the studies and necessary works.
Government to discuss with DANIDA the relationship of these studies with the study package of four other roads in Zambia (Projects 1.8.3, 1.8.5, 1.8.6, 1.8.8)

August 1984

1.8.8 STUDY ON REHABILITATION OF THE TANZAM HIGHWAY IN ZAMBIA



Estimated Costs:
USD 1.1 million (1984 prices)

Financing:
Requested: USD 1.1 million
Foreign currency part: 100%

Executing Agency:
Ministry of Works and Supply, Zambia

Start:
1984

Duration:
1 year (study)

Scope To study the condition of the existing Kapiri Mposhi - Nakonde section (809 km) of the Tanzam Highway to assess the treatment required for rehabilitation.

Contents The Kapiri - Nakonde road was built over 15 years ago and carries a heavy volume of traffic. The average daily traffic in 1980 was 396 vehicles per day with 39 per cent of heavy vehicles. Recent counts show the flows to be 431 vehicles per day with 56 per cent heavy vehicles. Efforts are being made to ensure that vehicles comply with axle load limits by the weighbridges at Kapiri and Nakonde, but there is evidence of damage to the road due to overloading.

Rehabilitation works have been carried out over sections in the past with surface dressing and slurry seal. However, due to the lack of funds it has not been possible to keep up with the deterioration and it is imperative to take urgent action.

At present, only normal maintenance is being carried out as and when funds are available.

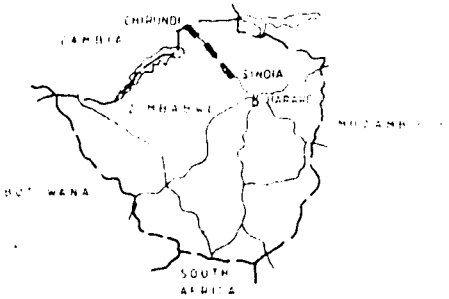
The cost of the rehabilitation works is at present roughly estimated at USD 45 million.

Status Terms of reference for a feasibility and engineering study have been prepared. Denmark is considering financing of the study (USD 1.1 million), together with three other roads in Zambia (projects 1.8.4, 1.8.5, 1.8.6).

Action Follow-up of financing arrangements, carry out the study.

August 1984

1.9.1 REHABILITATION OF THREE SECTIONS OF THE HARARE - CHIRUNDU ROAD



Estimated Costs:
USD 28 million (1984 prices)
USD 41 million (current prices)

Financing:
Secured : USD 5.4 million
Requested: USD 35.6 million
Foreign currency part : 55%

Executing Agency:
Ministry of Transport, Zimbabwe

Start:
1983

Duration:
3 - 4 years

Scope — To rehabilitate and partly reconstruct three sections of the Harare-Chirundu road where it has been damaged or worn out.

Contents — The aim of the project is to restore the road to a suitable standard for the heavy traffic between the capital cities of Harare and Lusaka.

The project includes three sections of the Harare - Chirundu road listed below (the km figures are distances from Harare):

Section A: Km 312 - 353. The rehabilitation of this section has been completed in May 1984 using USAID (USD 4.4 million) and local (USD 1.0 million) funds.

Section B: Km 144 - 187. Pavement deformed and requires rehabilitation. This section has been resealed. Cost estimate USD 14 million.

Section C: Km 230 - 296. Requires rehabilitation. Cost estimate USD 8.6 million.

Both sections B and C have exceeded their 20 year design life.

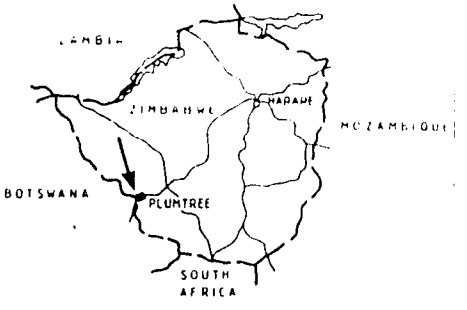
The traffic crossing the border post at Chirundu averages approximately 90 vehicles per day of which 50 are heavy vehicles. The traffic on sections B and C is considerably higher than this being in the range of 150 - 250 ADT.

Status — Rehabilitation of section A has been completed. An engineering study of sections B and C is needed before implementation.

Action — Financing is being sought for engineering studies and works on sections B and C.

August 1984

1.9.2 UPGRADING OF THE PLUMTREE - BOTSWANA BORDER ROAD



Estimated Costs:

USD 2.2 million (1984 prices)
USD 2.5 million (current prices)

Financing:

Requested: USD 2.5 million
Foreign currency part: 50%

Executing Agency:

Ministry of Transport
Zimbabwe

Start:

1984

Duration:

1 year

Scope To upgrade to bitumenized standard and partly realign the 9.4 km road section between Plumtree and the Botswana border.

Contents The aim is to connect the Zimbabwe major road network with that of Botswana.

The existing road consists of 2.7 km of very old tarred road, 5.5 m wide, and 6.7km of gravel road with very poor horizontal and vertical alignment. The road will be upgraded and realigned to a two-lane bitumen road designed to the main road standards of Zimbabwe.

The border post is passed by an average of 60 vehicles per day, of which [illegible] are heavy vehicles.

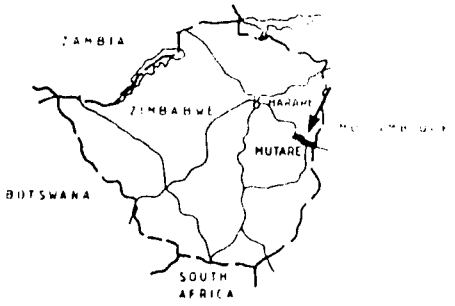
Status Detailed drawings have been finalized. Tender documents can be prepared within a few weeks after decision on implementation has been made. The project is included in the three-year programme for road construction in Zimbabwe, and construction by direct labour was scheduled for 1983/84 but has been delayed due to lack of funds.

ADB has been approached by the Government for financing.

Action Financing to be secured.

August 1984

1.9.3 STUDY ON UPGRADING OF THE EASTERN END OF THE HARARE - MUTARE - MOZAMBIQUE BORDER ROAD



Estimated Costs:
USD 0.1 million (1984 prices)

Financing:
Requested: USD 0.1 million
Foreign currency part: 80%

Executing Agency:
Ministry of Transport, Zimbabwe

Start:
1985

Duration:
4 months

Scope — Feasibility study on the rehabilitation and partial upgrading of the last 41 km of the road Harare-Mutare-Forbes Border post.

Contents — The aim of the project is to create conditions in the Mutare area to accommodate the increasing heavy traffic with special regard to growing export and import transports over the port of Beira.

The project includes:
- 26 km of the road west of Mutare municipal border;
- the pass through Mutare, about 13.5 km;
- the 1.5 km section between the municipal border and the border to Mozambique.
- As an alternative, a new by-pass south of the built-up area, which should reduce the distance to the border to Mozambique by about 5 km and remove the traffic problems through the city of Mutare.

The average daily traffic during the months of January - June 1981 has varied between 11 and 39 of which 7 - 22 heavy vehicles.

The estimated cost for design and works is USD 17 million.

Status — The ADB Co-ordination Committee has selected the project for Bank participation.

This project is closely linked with the rehabilitation of the road Beira-Zimbabwe border in Mozambique (project No. 1.5.3) where a feasibility study is due to be completed by the end of 1984.

Action — Government to prepare Terms of Reference for the study upon completion of the ongoing study of 1.5.3 in Mozambique.

Follow-up with ADB on financing of the study.

August 1984

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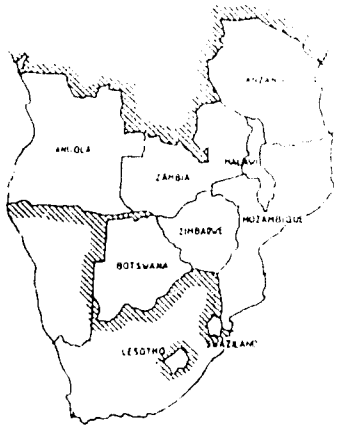
2.0.2 STUDY ON RAILWAY TRAINING PROGRAMMES REGIONAL



Estimated Costs:

USD 1.1 million (1984 prices)
USD 1.1 million (current prices)

Financing:

Secured: USD 1.1 million
Foreign currency part: 100%

Executing Agency:

Southern Africa Transport and Communications Commission

Start:

1984

Duration:

1 year

Scope : Study on the requirements for training of different levels of railway staff at local, regional and overseas training institutions.

Contents : After the collection, analysis and evaluation of all necessary data and other relevant information the Study is:

(a) to make recommendations for filling vacancies with foreign experts for a limited period and the simultaneous training of local counterparts;

(b) to make recommendations for the limited engagement of foreign experts to assist, guide, and instruct the local staff and possibly train them for the application of new technologies and procedures so far unfamiliar to them;

(c) to make recommendations for the improvement of existing training facilities and courses;

(d) to make recommendations for the introduction of new training courses to be held either in existing facilities with the existing equipment or in new facilities with new equipment (buildings, training material, models, etc.);

(e) to point out possibilities for vocational training outside the railway administrations;

(f) to identify the demand for training measures on bilateral and multilateral level involving the nine railway administrations concerned;

(g) to show the use of existing training facilities and the demand for new facilities in respect of bilateral and multilateral training measures of the nine railway administrations (see f);

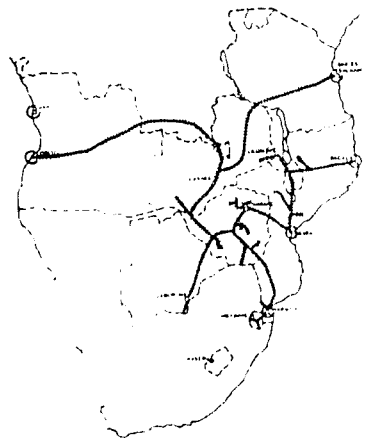
(h) to determine the demand, if any, for training overseas of local railway personnel and to make corresponding proposals.

Items (a) to (e) each refer to the specific demand and situation of the national railways and items (f) to (g) to bilateral or multilateral training measures.

Status : The Federal Republic of Germany has made 3.0 million German marks available for the study. A financing agreement with the Government of Botswana and an administration agreement with SATCC have been signed and a consultant has been selected.

Action : The study is expected to be completed in 1985.

2.0.4 STUDY ON RAILWAY TELECOMMUNICATIONS REGIONAL



Estimated Costs:

USD 0.1 million (1984 prices)
USD 0.1 million (current prices)

Financing:

Requested : USD 0.1 million
Foreign currency part: 100%

Executing Agency:

Southern Africa Transport and Communications Commission

Start:

1985

Duration:

3 months

Scope To carry out a review of the existing railway telecommunication system within the SATCC region and to make broad recommendations for a regional development plan, technology and standards.

Contents In connection with the Railway Rolling Stock Study P. 2.0.1, the Consultants concluded that an overall review of the existing railway telecommunication systems is needed for proper planning of the development of international traffic in the future. At the Meeting of Railway Administrations in April 1984, organized under Project No. 0.0.3, Operational Co-ordination Development Programme, it was concluded that this study is of first priority from the railways' point of view.

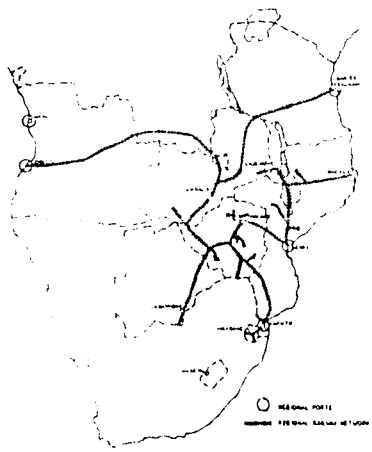
The study aims at evaluating the condition and capacities of the existing systems and making appropriate broad recommendations for:

- a phased regional communications development plan
- the most appropriate technology and
- international technical standards for communication between railway administrations.

Status Terms of Reference have been prepared. CIDA has expressed interest in the Study.

Action Terms of Reference have been submitted to CIDA with a request for financing of the study.

2.0.5 STUDY ON RAILWAY WAGON MANUFACTURE REGIONAL



Estimated Costs:

USD 0.35 million (1984 prices)
USD 0.4 million (current prices)

Financing:

Requested : USD 0.35 million
Foreign currency part: 100%

Executing Agency:

Southern Africa Transport and Communications Commission

Start:

1985

Duration:

1 year

Scope — To identify the present capacity and capability of the industries in the region to manufacture railway wagons and to make broad recommendations for the development of such industries and regional production of railway wagons and wagon components.

Contents — The study is expected to be carried out in close co-operation with the Technical Unit and the SADCC Industrial Co-ordination Division in Tanzania.

The Study will include visits to relevant administrations, organizations and industrial units. On that basis an inventory of the present capacities and capabilities to produce railway wagons and wagon components in the region will be made.

The findings of the Study shall include schedules of future requirements of complete wagons and wagon components, statements on the present industrial capabilities, and a programme for the development of the industry for the manufacture of railway wagons and wagon components in the region.

Status — Terms of Reference for the Study have been prepared. CIDA has expressed interest in financing the Study.

Action — Terms of Reference have been submitted to CIDA with a request for funds to carry out the Study.

2.1.1 REHABILITATION OF THE BENGUELA RAILWAY

Estimated Costs:

USD 143.8 million (1984 prices)
USD 181.0 million (current prices)

Financing:

Secured : USD 18.0 million
Requested : USD 163.0 million
Foreign currency part: 100%

Executing Agency:

Caminho de Ferro de Benguela, CFB

Start:

1981

Duration:

5 years from 1985

Scope Rehabilitation and upgrading of the 1.340 km railway from the port of Lobito to the Zaire border.

Contents The rehabilitation and upgrading programme was initiated in 1981 divided into three phases. The target capacity after the completion of phases 1 and 2, is 96.000 t/month of international transit traffic.

To complete the programme for phases 1 and 2, the following works and acquisition should be carried out in 1985–1989:

(1) Acquisition of 641 wagons, 52 coaches and 6 vans (USD 63.7 million);

(2) Extension of the CTC-system already in operation between Lobito and Cubal (145 km) to the Zaire border, (USD 17.5 million);

(3) Rehabilitation of the railway line including rails, crossings, switches, stone crushers, ballast wagons and other material (USD 19.8 million);

(4) Completion of the modernization of 700 wagons and coaches initiated already in 1975 (USD 10.8 million);

(5) Acquisitions related to operations like automatic barriers for level crossings, equipment to move wagons locally, fork lifts, automatic washing machines, electrification of stations etc (USD 6;9 million);

(6) Technical co-operation and assistance (USD 11;8million);

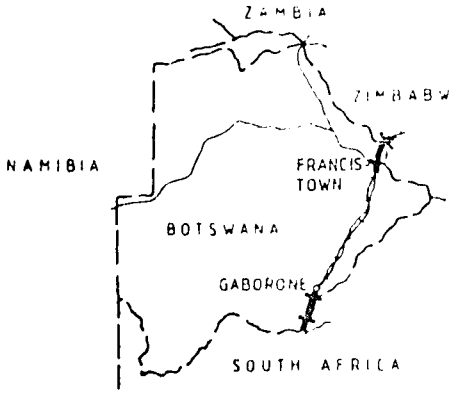
(7) Completion of the diesel workshop at Huambo and modernization of wagon workshops and acquisition of an underground wheel lathe, machinery for electrical repairs etc. (USD 3.0 million); and

(8) Acquisition of stocks (USD 4.2 million).

Status The following foreign funds have been made available up to now: BADEA/OPEC 10.0 million, OPEC 3.0 million, Netherlands 2.6 million, SIDA 1.3 million, Belgium 0.8 million and UNDP 0.3 million, altogether 18.0 million. These funds have been used for initial improvements. For example the acquisition of 259 wagons have been financed by the above BADEA/OPEC funds of 10.0 million. The implementation of the project will be interrupted unless additional funds are made available.

Action A project description has been prepared and submitted to ADB for consideration.

2.2.1 REHABILITATION OF THE MAIN RAILWAY LINE, BOTSWANA



Estimated Costs:

(1) USD 17.0 million, (2) 13.0 million, (3) 83.0 million (1984 prices)
(1) USD 19.0 million, (2) 15.0 million and (3) 85.0 million (current prices)

Financing:

Secured : USD 18.0 million
Required : USD 96.0 million
Foreign currency part: 80%

Executing Agency:

Ministry of Works and Communications

Start:

1984

Duration:

(1) 2 years; (2) 3 years; (3) 6 years

Scope : Renewal of the track:

(1) Gaborone-Southern Border (120 km),

(2) Francistown-Northern Border (85 km), and

(3) Gaborone-Francistown (435 km)

Contents : The railways in Botswana consist of a 640 km main line and two branch lines Serule-Selebi Pikwe (57 km) and Palapye-Morupule (15 km), in total 714 km. The railway system is owned and operated by the National Railways of Zimbabwe for the time being. However, the Government of Botswana is in a process of taking over the system from the 1st January 1987.

All rails and sleepers with a few exceptions were second-hand when laid in Botswana since 1961 from the Zimbabwe border southwards. After the track was constructed only normal maintenance has been carried out but no systematic renewal of the track has been initiated. The track, especially some deteriorated sections, is now fast approaching a state where severe restrictions of speed and axle loads will have to be applied. Therefore the renewal of the track is becoming more and more urgently needed in the following order of priority: (1) Gaborone-Southern Border (120 km), (2), Francistown-Northern Border (85 km) and (3) Gaborone-Francistown.

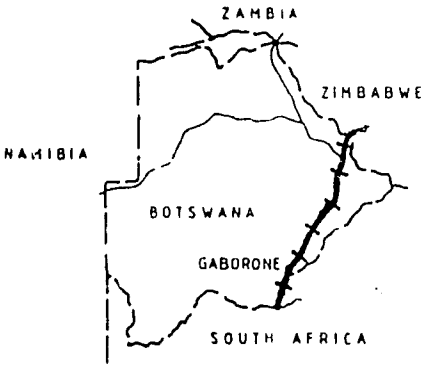
The new track will consist of 50 kg/m longwelded rails on monobloc concrete sleepers with fist-fastenings.

Status : An agreement has been signed between the People's Republic of China and Botswana for P 17.0 million to finance the acquisition of rails and equipment and for technical assistance. To begin with the costs of sleepers, ballast and works will be financed by the Government of Botswana. On that basis financing has been secured for the rehabilitation of the 120 km stretch Gaborone-Southern Border (120 km) and partly of the stretch Francistown-Northern Border (85 km).

CIDA has shown interest in the project. An appraisal mission to Botswana has been made by CIDA.

Action : Additional financing is being sought.

2.2.2 REHABILITATION OF RAILWAY TELECOMMUNICATION FACILITIES, BOTSWANA



Estimated Costs:

USD 0.5 million (1984 prices)
USD 0.6 million (current prices)

Financing:

Secured : USD 0.5 million
Foreign currency part: Approx. 95%

Executing Agency:

Ministry of Works and Communications

Start:

1985

Duration:

2 1/2 years

Scope : Re-equipment and expansion of the present telecommunication system.

Contents : The project consists of the following parts:

(1) 12 channel carrier frequency system, plus one additional pair of wires between Gaborone and Francistown, including installation;

(2) replacement of the existing selector system with a modern selector system with AF-signalling connected at 24 stations and

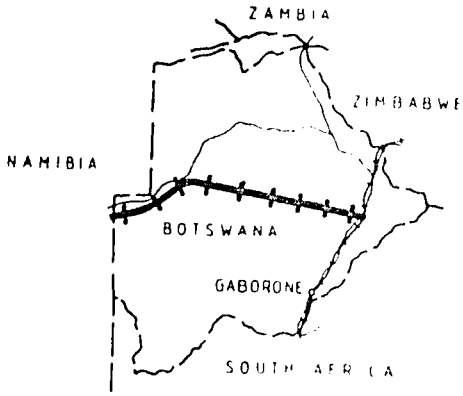
(3) Public Automatic Branch Exchange (PABX), LM Ericsson digital ASB 109 exchange with a maximum capacity of 128 lines, to replace the present 30-line PABX in Gaborone.

Status : SIDA is financing the project.

Action : The implementation of the project is expected to start during the first half of 1985.

August 1984

2.2.3 TRANS-KALAHARI RAILWAY (TKR) STUDY



Estimated costs:

USD 0.8 million (1984 prices)
USD 0.8 million (current prices)

Financing:

Secured: USD 0.8 million
Foreign currency part: 90%

Executing Agency:

Ministry of Mineral Resources and Water Affairs

Start:

1983

Duration:

1 1/2 year

Scope : Detailed feasibility study of a route westwards from the Kgaswe area to a coal export terminal located at a west coast port, a new rail link of 1530 km length of which 1180 km of new line.

Contents : The Government of Botswana is at the planning stage of a large complex of projects including development of coal mines and related infrastructure at Kgaswe near Serowe.

The mining portion of the project, including the necessary infrastructure within the mining area, is the responsibility of Shell Coal Botswana (Pty) Ltd, while infrastructure pertaining to transportation including the coal export terminal is the responsibility of the Botswana Government.

Status : Pre-feasibility studies have already earlier been carried out on the major mining venture and on the transportation and other infrastructure including the Trans-Kalahari Railway (TKR). The combined projects could represent a capital cost of around 2 billion US dollars at 1980 prices.

The Government of Botswana and Shell Coal Botswana (Pty) Ltd. are now at detailed feasibility study stage. Consequently the Government of Botswana has financed the TKR Feasibility Study, including the coal terminal in the west coast, by allocating P. 1.0 million for this purpose.

The study is about to be completed.

The African Development Bank has been approached for funds for the implementation of the rail link.

Action : Further action will depend on the findings of the ongoing study.

August 1984

2.2.4 RENEWAL OF TRAIN WORKING SYSTEM, BOTSWANA

Estimated Costs:

USD 5.0 million (1984 prices)
USD 5.0 million (current prices)

Financing:

Secured : USD 5.0 million
Foreign currency part: Approx. 95%

Executing Agency:

Ministry of Works and Communications

Start:

1985

Duration:

2 years

Scope : Renewal of the train working system including the installation of colour light signalling for the main railway line.

Contents : The present system of train working in Botswana is by paper facsimile machine which is a simple repeater machine transcribing an order written out at station A to station B. A copy of this order is handed to the driver of the train and the guard. This system is susceptible to human error and requires a very high level of experience and competence. These machines are now life expired and the system will be replaced.

To facilitate train working in a reliable manner basic colour light signalling will be introduced for the whole line from the Southern to the Northern Border.

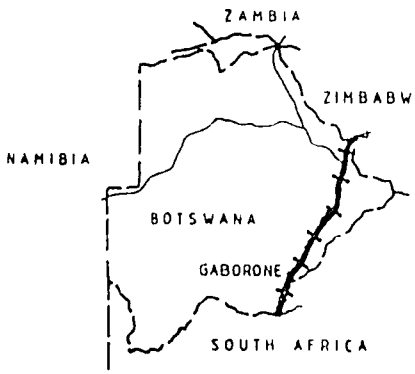
The rehabilitated overhead telecommunication lines (P 2.2.2) will be used also for signalling purposes. The points will remain manually operated.

Status : Detailed plans are being prepared. SIDA will finance the project.

Action : The implementation will start in 1985.

August 1984

2.2.5 MAINTENANCE DEPOT FOR BOTSWANA RAILWAY



Estimated Costs:

USD 4.5 million (1984 prices)
USD 5.0 million (current prices)

Financing:

Requested : USD 5.0 million
Foreign currency part: 90%

Executing Agency:

Ministry of Works and Communications

Start:

1985

Duration:

3 years

Scope : To provide facilities and equipment for basic maintenance of locomotives and wagons.

Contents : Botswana is in the process of building up its rolling stock fleet. Altogether 12 diesel electric locomotives, 47 high sided wagons and 13 water tanks have been acquired by now. Probably 15 (in addition to the 12 already purchased) new main line locomotives for the old line will be acquired by 1987. Ten more units are needed for the planned eastern link. Altogether 450 new wagons are needed for the old line and 1 100 - 1 200 coal wagons for the eastern link. No passenger coaches are included in the plans.

It is intended to do basic maintenance of these assets within Botswana to suit operational convenience. The proposed facility will be located at Mahalapye. The project will consist of a Depot Building, Office Block, Garage and equipment required to make it fully operational plus housing for the staff.

The break-down of the costs at current prices is as follows:

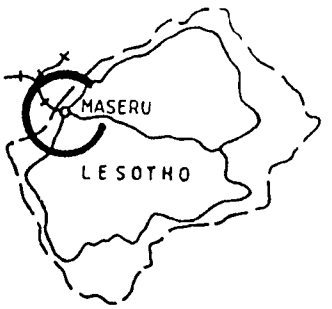
- Depot building	USD 1.3 million
- Office and amenity block	" 0.2 "
- Civil engineering works	" 1.9 "
- Equipment for Depot	" 1.0 "
- Break-down train and equipment	" 0.6 "

Status : A project description with cost estimates has been prepared by Transmark Consultants.

Action : Financing of this project is urgently needed since this line is already being taken over by the Government of Botswana from the National Railways of Zimbabwe.

The taking over will be completed by the 1st of January, 1987.

2.3.1 CONTAINER TERMINAL WITH CUSTOMS FACILITIES IN MASERU



Estimated Costs:

USD 1.3 million (1984 prices)
USD 1.4 million (current prices)

Financing:

Requested : USD 1.4 million
Foreign currency part: 70%

Executing Agency:

Ministry of Transport and Communications

Start:

1984

Duration:

2 years

Scope Establishment of a container terminal in Maseru with customs facilities.

Contents Lesotho is connected to the South African railway system by a single track line which terminates at Maseru station, 2 km inside the country. Goods traffic handled at Maseru station has averaged some 160 000 tonnes p.a. and has been estimated by consultants to increase to about 420 000 tonnes p.a. by the year 2000.

At present, overseas containers must be opened, regrouped and cleared at South African ports, usually in Durban, due to the absence of a customs terminal and the lack of adequate clearance procedures and handling facilities in Maseru. This results in delays and additional costs compared with possible through shipments to and from Maseru. Containerization is growing rapidly also within the Southern Africa Customs Union area of which Lesotho is a member. In the absence of adequate facilities Lesotho can only marginally gain in this respect.

On these grounds a project plan has been prepared for a container terminal with customs facilities in Maseru including the following: a rail spur, stuffing/stripping sheds (1500 m2), administration building for the operator and customs, paving of the port area, a gatehouse and security fencing plus a gantry crane and a forklift.

Status A study on the feasibility of the project is being made by a German consultant financed by EEC. The study will be completed by the end of 1984.

Action Further action depends on the findings of the ongoing study. If found feasible, it is expected that EEC will finance the implementation of the project.

August 1984

2.3.2 EXPANSION OF OIL STORAGE FACILITIES IN LESOTHO

Estimated Costs:
USD 5.0 million (1984 prices)
USD 9.8 million (current prices)

Financing:
Requested: USD [illegible] million
Foreign currency part: 100%

Executing Agency:
Ministry of Water, Energy and Mining

Start:
1985

Duration:
2 years

Scope — Increase of oil storage capacity in Maseru to provide for 3 months strategic reserve.

Contents — Lesotho is at present entirely dependent on South Africa for its supplies of fuel To lessen that dependence the project originally included acquisition of 84 tank wagons to transport oil products from Maputo and increase of oil storage capacity in Maseru. The plan to purchase tank wagons has now been abandoned since for the haulage of the wagons South African motive power would have been needed.

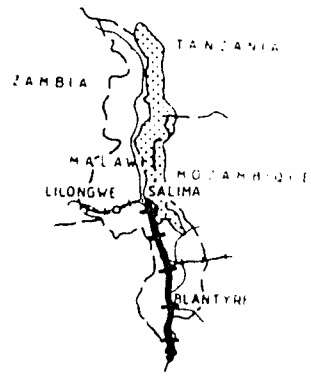
At present only about two weeks supplies of oil products can be stored in Maseru. In case of interruptions in deliveries the country would have serious problems. Therefore additional storage capacity to provide for 3 months strategic reserve is badly needed.

Status — SIDA has been approached for funding of the preparation of designs with costing.

Action — Designs with costing should be finalized for a detailed project plan.

August 1984

2.4.1 REHABILITATION OF THE SALIMA - SOUTHERN BORDER RAILWAY, MALAWI



Estimated Costs:

USD 16.0 million (1984 prices)
USD 20.6 million (current prices)

Financing:

Secured : USD 3.0 million
Requested : USD 17.0 million
Foreign currency part: 60%

Executing Agency:

Malawi Railways

Start:

1984

Duration:

5 years

Scope : Rehabilitation and upgrading of the 469 km section between Salima and the Mozambique border to bring it up to a standard which can ensure safe and uninterrupted train operations.

Contents : The Balaka-Southern border section was originally built to very low standards. Since 1973 improvements have been made largely with British aid so that most of this section is now in good condition. Rerailing and resleepering is needed however, here and there.

The stretch from Balaka (km 313) to Salima (km 469) is in poor condition. Renewal of ballast, rails and sleepers are in the programme. Some rehabilitation works are also to be carried out between Balaka and Southern border.

The rest of the Malawi Railways lines are in good shape equipped with 40 kg/m longwelded rails on concrete sleepers.

Related to the rehabilitation the plan includes the reopening of the concrete sleeper factory at Salima. The factory was closed in 1980 when the new line between Salima and Mchinji was completed.

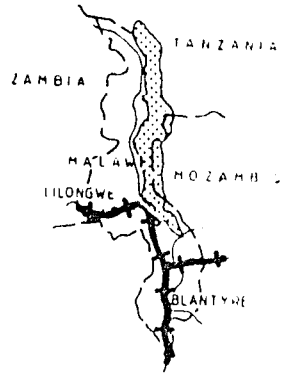
To produce sleepers for the above rehabilitation and for normal replacements, a production of about 150 000 units in three years is planned.

Status : A study on Malawi Railways has been completed by Coopers & Lybrand, British Consultants, financed by ODA. In this report a 2-phase programme for rehabilitation has been proposed. For the 1st phase UK has already committed K 3.0 million. British consultants will make an evaluation mission to Malawi to evaluate the needs for the 2nd phase of the programme.

Action : It is expected that the project will be financed by the United Kingdom and the Government of Malawi.

August 1984

2.4.2 SUPPLY OF RAILWAY ROLLING STOCK, MALAWI



Estimated Costs:

USD 8.0 million (1984 prices)
USD 9.0 million (current prices)

Financing:

Secured : USD 8.0 million
Requested: USD 9.0 million

Executing Agency:

Malawi Railways

Start:

1984

Duration:

2 years

Scope : Acquisition of 180 freight wagons.

Contents : The aim of the project is to provide adequate transport capacity for the transportation of Malawi's exports and imports to and from Mozambique ports.

From March 1976, when the Mozambique-Zimbabwe border closed until October 1980 Malawi Railways had the use of 272 goods wagons owned by the National Railways of Zimbabwe, wagons which were returned to Zimbabwe when the border was opened. In spite of enforced withdrawal of wagons from service because of obsolescence there are still nearly 300 wagons out of the total of 760 which are over 20 years old.

The bulk of Malawi's exports and imports is now carried in containers. Container wagons are needed to meet the demand.

The project includes the purchase of 180 additional wagons for the above purposes. The cost estimate at current prices is USD 9.0 million based on the assumption that the wagons can be bought from the Southern African Region.

Status : The Federal Republic of Germany financed a rolling stock study in Malawi in 1982. Coopers & Lybrand, British Consultants, have also made a study on Malawi Railways financed by ODA. Based on these studies it has been concluded that 180 new wagons are needed.

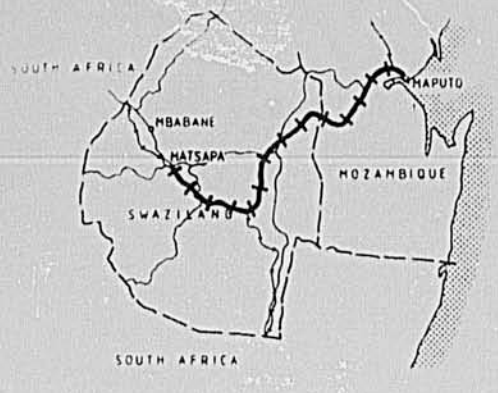
The Federal Republic of Germany has earmarked DM 13.0 million for Malawi projects. One third of this amount will be used for road haulage equipment and the rest for railways. In the first place 30 wagons are being acquired from the Federal Republic of Germany. The second phase is planned to include the purchase of 30 more wagons. At the same time possible further needs will be evaluated.

The African Development Bank has also been approached by the Government of Malawi.

Action : Additional wagons should be bought within the SATCC region where the costs will be less than elsewhere and the standards the same as those already used.

Additional funding is needed.

2.5.1 STUDY AND DESIGN OF THE REHABILITATION OF THE MACHAVA - SWAZILAND RAILWAY



Estimated Costs:

USD 0.9 million (1984 prices)
USD 0.9 million (current prices)

Financing:

Requested : USD 0.9 million
Foreign currency part: Approx. 100%

Executing Agency:

DNPCF and Swaziland Railway

Start:

1985

Duration:

1 year

Scope — Study on the rehabilitation of the 213 km railway between Machava in Mozambique and Matsapha in Swaziland.

Contents — The present track has 45 kg/m and 40 kg/m rails on timber sleepers in Mozambique and Swaziland respectively. Due to steep gradients (up to 25 o/oo) and sharp curves speed restrictions are frequent on the entire line, and the line has deteriorated.

The main objective of the rehabilitation plan is to enable the two railways to provide adequate facilities in a safe and efficient way to meet the growing demand for imports and exports to and from Swaziland and the internal demand in Mozambique. The traffic demand is expected to grow from 0.8 million tonnes in 1980 to 1.9 million in 1990 and 3.1 million in the year of 2000.

The project plan includes the rehabilitation and upgrading of the line to a standard of 48 kg/m rails in Swaziland and new or repaired 45 kg/m longwelded rails on concrete sleepers and with sufficient stone ballast in Mozambique to allow 20 t axle loads right through up to Matsapha, 150 km from the border in Swaziland. For a detailed rehabilitation programme a study will have to be carried out.

Terms of Reference have been prepared.

Status — The Italian Government has expressed its willingness to provide funds for the study.

Action — An agreement with the Italian Government for the study is being negotiated.

A rehabilitation programme is expected to be initiated based on the findings of the study.

August 1984

2.5.3 REHABILITATION OF THE BEIRA-ZIMBABWE RAILWAY/DONDO-ZIMBABWE BORDER

Estimated Costs:

USD 17.0 million (1984 prices)
USD 20.0 million (current prices)

Financing:

Requested : USD 20.0 million
Foreign currency part: 70%

Executing Agency:

National Directorate of Railways, DNPCF

Start:

1985

Duration:

3 years

Scope Relaying a 88 km long section of the (Beira) - Dondo - Machipanda-Harare railway and spot regradings and realignments.

Contents The 315 km long (Beira) - Dondo - Machipanda (Zimbabwe border) railway has 40 kg/m rails on timber sleepers in stone ballast, except on the 88 km section Almada-Machipanda which has 30 kg/m rails on steel or timber sleepers and the steepest (25 o/oo) gradients and sharpest curves on the line (100 m).

The entire stretch of the 500 km Nhamatanda-Harare has ruling gradients of 20-25 o/oo. On the Zimbabwe side of the border the aim is to bring the most difficult gradients down to 20 o/oo. On the Mozambique side by local regradings and realignments the ruling gradient of 15 o/oo could be reached.

On these grounds the project plan includes the renewal of 88 km the track next to the Border using 45 kg/m rails on concrete sleepers with pandrol fastenings and local regradings and realignments to reach a ruling gradient of 15 o/oo.

Status A rehabilitation study under assignment by ODA has been carried out in 1982 by Mott, Hay & Anderson International Ltd.

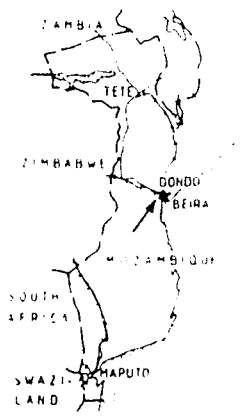
The study includes also technical proposals for track rehabilitation, regradings and realignments.

A project description has been prepared.

Action Funds are being sought for the implementation of the project.

August 1984

2.5.4(1) REHABILITATION OF THE BEIRA - MALAWI RAILWAY/BEIRA - DONDO



Estimated Costs:

USD 17.0 million (1984 prices)
USD 22.7 million (current prices)

Financing:

Secured : USD 0.3 million
Requested : USD 21.7 million
Foreign currency part: Approx. 80%

Executing Agency:

National Directorate of Railways, DNPCF

Start:

1990

Duration:

6 years

Scope Rehabilitation, upgrading and doubling of the Beira-Dondo section and installation of an appropriate signalling system.

Contents The 28 km stretch Beira-Dondo is common for the Malawi and Zimbabwe lines. The track has 12 m long, fishplated UIC 46 kg/m rails on 12 km of the line and 30 kg/m rails on 16 km, fastened with coach-screws to timber sleepers in stone ballast. There is no signalling system on this stretch.

The track is still in a fair condition but cannot cope with the anticipated traffic in the future unless it is upgraded and provided with signalling and maybe doubled. It has been estimated, taking into account the increasing commuter traffic, that 47 pairs of trains (94 trains) will be operated daily over this stretch by 1990.

On these grounds a project plan has been prepared for the rehabilitation and upgrading of this stretch. The plan is divided into 3 phases:

(i) rehabilitation of the existing track and installation of a signalling system;

(ii) construction of a second track using UIC 54 kg/m longwelded rails on concrete sleepers with a signalling wired for double track operations; and

(iii) upgrading of the present track to the same standards as the new double track.

The rehabilitation and upgrading will be preceeded by a study and engineering (when applicable) on the organization of the rehabilitation works under stage 1, on the signalling related to all 3 stages and on the quarries, machinery and materials needed for the implementation of the whole project with cost estimates.

Status The Belgian Government has allocated USD 0.3 million for the study but the funds have not been released yet. A Belgian team made an appraisal survey in 1984 and prepared terms of reference for further action. SIDA/ADB have also been approached.

Action A study and engineering should be made. Based on the findings of the study further action should be initiated.

2.5.4(2) REHABILITATION OF THE BEIRA - MALAWI RAILWAY/DONDO-MALAWI BORDER

Estimated Costs:

USD 93.0 million (1984 prices)
USD 112.0 million (current prices)

Financing:

Secured : USD 33.0 million
Requested: USD 79.0 million
Foreign currency part: 80%

Executing Agency:

National Directorate of Railways, DNPCF

Start:

Ongoing, started in 1982

Duration:

4 years from 1985

Scope — Rehabilitation of the Dondo-Dona Ana-Malawi border line, 331 km.

Contents — The track has 30 kg/m and 40 kg/m rails on timber sleepers in stone ballast. All stretches with 30 kg/m rails are in poor condition.

The project plan includes long welded 45 kg/m rails on concrete sleepers in stone ballast. On the stretch Dona Ana to Malawi border 40 kg/m rails should be used since such rails are also used by the Malawi Railways. Local realignments are included in the programme.

The line should be provided with a signalling system between Dondo and Sena to promote the safety and efficiency of the operations.

Status — The Democratic Republic of Germany has allocated USD 3.2 million for technical assistance and the Government of Mozambique USD 11.3 million for the rehabilitation of the stretch Dondo-Derunde (70 km). Further USD 18.5 million has been allocated by Italy.

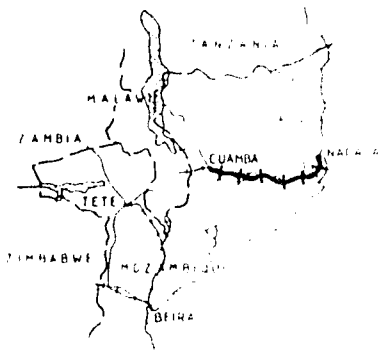
The rehabilitation works started in 1982.

The African Development Bank and CIDA have been approached for funds for the rehabilitation of the Dona Ana-Malawi section.

Action — Discussions with ADB and CIDA to be continued for USD 10.0 million to complete the 42 km stretch Dona Ana-Malawi border. In addition about USD 69.0 million is needed to complete the project. Financiers should be approached to that effect.

August 1984

3.5.3 REHABILITATION OF THE NACALA-MALAWI RAILWAY



Estimated Costs:

USD 195.0 million (1983 prices)
USD [illegible] million (current prices)

Financing:

Secured : USD 91.9 million
Requested : USD 143.0 million
Foreign currency part: 60%

Executing Agency:

National Directorate of Railways, DNPCF

Start:

1983

Duration:

5 years

Scope — Rehabilitation and upgrading of the entire line between Nacala and Entre Lagos (Malawi Border) and carrying out realignments for improvement of gradients and curvature.

Contents — The 615 km Nacala-Entre Lagos (Malawi border) railway has 30 kg/m rails on timber sleepers in stone ballast. The condition of the track with exception of the stretch Cuamba-Entre Lagos (77 km), is very poor. Sections with badly worn out and bent rails, loose fastenings and low joints are common. Most of the sleepers are completely perished and the ballast is inadequate. Track is deteriorating and getting unsafe.

The project aims at total replacement of the track between Nacala and Cuamba by long welded BS 80A rails on bi-block concrete sleepers with adequate ballast. Between Cuamba and Entre Lagos only minor improvements are proposed.

The project includes also improvements to the communications system and implementation of a training programme.

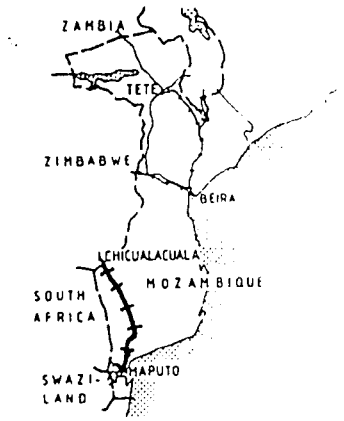
The project will be implemented in two stages the first phase being the upgrading of the Nacala-Nampula section (260 km) by the end of 1985. The whole project is planned to be completed by the end of 1987. The cost estimate in 1983 prices for the first phase is 95 million and for the whole project 195 million US dollars.

Status — Financing agreements with Canada, France and Portugal and with the Bank of Mozambique for the local component have been signed. The Canadian part is USD 13.0 million, French 43.0 million, Portuguese 25.4 million and the local part USD 10.5 million. These funds will cover the whole of the first phase and some funds will remain for the second phase.

A Consortium has been established for the works consisting of the following companies: Borie Sae (French); Dehe (French) and Somafel (Portuguese). Mobilization started in July 1983 and the preliminary works have also started.

Action — Detailed plans with costings for phase 2 will be prepared and financiers approached accordingly for additional funds.

2.5.6(2) STUDY AND ENGINEERING FOR BRIDGES ON RAILWAYS IN SOUTHERN MOZAMBIQUE



Estimated Costs:

USD 0.2 million (1984 prices)
USD 0.2 million (current prices)

Financing:

Requested : USD 0.2 million
Foreign currency part: 90%

Executing Agency:

National Directorate of Railways, DNPCF

Start:

1985

Duration:

9 months

Scope — Study and engineering for the re-establishment of drawings and related documentation on bridges and preparation of a comprehensive maintenance programme.

Contents — The Feasibility Study and Preliminary Engineering for Rehabilitation and Electrification of Railways in Southern Mozambique and Swaziland carried out by Swederail Consulting AB, revealed that design and completion drawings for most of the bridges on railways in Southern Mozambique are not available. Heavy repairs are required on several bridges and a maintenance programme should be prepared.

On that basis a plan for a study and engineering has been made. The study will include the following main items:

(i) re-establishment of drawings and related documentation;

(ii) detailed study and engineering for an emergency programme for repairs;

(iii) detailed study and engineering for a comprehensive repairs programme;

(iv) preparation of a maintenance and inspection programme; and

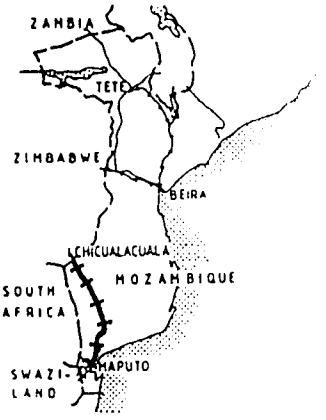
(v) initiation of a system of monitoring bridge conditions and training of local personnel for inspections;

(vi) other proposals deemed necessary for related purposes.

Status — Terms of Reference have been prepared.

Action — Financing of the study is being sought.

2.5.6(3) REHABILITATION OF THE MAPUTO-CHICUALACUALA (LIMPOPO) RAILWAY



Estimated Costs:

USD 82.0 million (1984 prices)
USD 106.0 million (current prices)

Financing:

Secured : USD 20.0 million
Requested : USD 86.0 million
Foreign currency part: 75%

Executing Agency:

National Directorate of Railways, DNPCF

Start:

1984

Duration:

6 years

Scope — Rehabilitation and upgrading the line to meet the needs related to future traffic demand.

Contents — The existing track of the 524 km Limpopo line consists of 45 kg/m rails for a length of 464 km, 40 kg/m rails for 8 km and 30 kg/m rails for 62 km with staggered joints on wooden sleepers. The track is in so poor condition that severe restriction are applied on 141 km of the line.

Mott, Hay & Anderson Ltd have completed a Feasibility Study on the Rehabilitation of the Maputo-Chicualacuala Line and Swederail Consulting Ab a Feasibility Study for Rehabilitation and Electrification of Railways in Southern Mozambique and Swaziland. The former study recommends an emergency programme for rehabilitation and the latter a complete rehabilitation of the line. Both studies conclude that the rehabilitation is viable with a high internal rate of return.

On that basis a project plan for a 2-phase rehabilitation programme has been made. The track superstructure shall be 45 kg/m longwelded rails on concrete monobloc sleepers with pandrol fastenings on a 20 cm ballast cushion.

The first phase, an emergency programme, covers km 471-533, 6-40, 77-113, 526-336, 62 km complete renewal and 80 km resleepering, secondary renewal of track (10 km) at Maputo yard and replacement of unserviceable turnouts in Maputo yard, technical assistance and a training programme. In addition equipment, tools and development of facilities for the works is included in the programme.

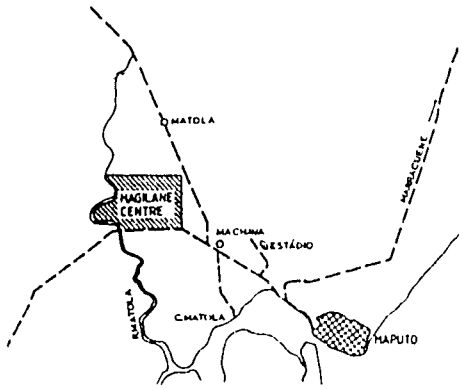
The second phase includes complete rehabilitation of the rest of the line, introduction of mechanized maintenance and emergency repairs to railway and road bridges on the line.

The cost estimate at current prices for the first phase is USD 20.0 million and for the second phase USD 86.0 million.

Status — A project plan for phase 1 has been prepared and financing secured from the United Kingdom (USD 13.5 million) and Mozambique. ADB has been approached for additional funds (phase 2).

Action — A project description for phase 2 has also been prepared. Financing is being sought for phase 2.

2.5.7 FEASIBILITY STUDY ON THE REORGANIZATION OF MAPUTO AND MATOLA YARDS



Estimated Costs:

Fixed: USD 1.3 million (1984 prices)
Total: USD 1.3 million (current prices)

Financing:

USD 1.3 million

Executing Agency:

National Directorate of Railways, DNPCF

Start:

1984

Duration:

1 year

Scope Feasibility study on a new marshalling yard serving the ports of Maputo and Matola and depots, workshops and storage areas related to this new centre.

Contents The Maputo and Matola ports are the most important ones for the SADCC countries in their foreign trade. In 1981 the traffic via these ports amounted to 6.0 million tonnes and it is estimated that the traffic will grow to 10.0 million tonnes in 1990.

To provide adequate facilities for the growing traffic the ports are being developed and the railway lines leading to Maputo (Goba, Ressano Garcia and Limpopo lines) are being or are about to be rehabilitated and upgraded. One bottleneck still remains and that is the condition and inadequate space of the railway yards and related facilities in Maputo.

At present wagons might be delayed for several weeks in Maputo due to the poor condition of the tracks. Besides the present track layout is not adequate for efficient operations in the future to handle the increasing traffic. An additional burden will be the increasing commuter and other passenger traffic which should be separated from the goods traffic in the Maputo area. The space at the present yards is not adequate for major improvements in this respect.

The same applies to the present depots and workshops for locomotives and rolling stock. Additional capacity is however needed to serve the increasing number of locomotives and rolling stock in connection with the future traffic. Space should also be available for depots and workshops related to the planned electrification of the railway lines leading to Maputo.

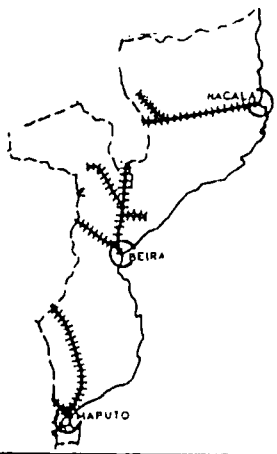
On these grounds a preliminary plan to build a central marshalling yard to serve both Maputo and Matola and depots and workshops for diesel and electric traction units and rolling stock and a storage and primary processing centre for agricultural products at Magilane has been prepared and a feasibility study initiated.

Status An area at Magilane has been reserved for the new centre.

The study is being carried out by an Italian consultant financed by Italy.

Action The findings of the study will determine whether the existing yard will be improved or new facilities built.

2.5.8 CHANGE OVER TO ROLLER BEARINGS, MOZAMBIQUE



Estimated Costs:

USD 6.0 million (1984 prices)
USD 7.0 million (current prices)

Financing:

Requested: USD 7.0 million
Foreign currency part: 100%

Executing Agency:

National Directorate of Railways, DNPCF

Start:

1985

Duration:

3 years

Scope : Completion of the change over of the wagon fleet of the Mozambique Railways from plain bearings to roller bearings.

Contents : The three systems of Mozambique Railways, CFM(SUL), CFM(CENTRO) and CFM(NORTE, operate altogether about 7 700 wagons of which nearly half have already been equipped with roller bearings. Of the remaining 3 700 wagons with plain bearings, 2 000 have been found to be suitable for conversion to roller bearings.

With plain bearings the trains have to be stopped after a certain number of kms at special inspection stations to check for possible "hot boxes". Even then the plain bearings frequently fail causing derailments and other damage.

The modern roller bearing box needs no inspection on the line and needs no maintenance between the general overhauls, i.e. in 8–10 years. Its estimated life time is 25–30 years. Additional savings will be gained through increased availability of wagons and higher axle loads and speeds. Less locomotive traction is needed, specially when starting. Thus longer trains can be operated with roller bearings.

Status : This project has been brought up as follow-up action based on the regional study on Railway Rolling Stock, Project No. 2.0.1. Also a separate study has been carried out by Swederail concluding that the investment can accept a capital cost of 11 per cent.

Action : The project is expected to be submitted to SIDA for consideration.

August 1984

2.7.1 TRACK REHABILITATION, TAZARA

Estimated Costs:

USD 47.0 million (1984 prices)
USD 70.0 million (current prices)

Financing:

Requested : USD 70.0 million
Foreign currency part: 70%

Executing Agency:

TAZARA

Start:

Parts (1), (2) and (3) in 1985, Part (4) in 1988 and Part (5) in 1990

Duration:

12 years

Scope — The project consists of 5 parts, namely (1) rehabilitation of quarries, (2) introduction of mechanized maintenance, (3) rail burns repairs, (4) rectification of landslide areas and (5); a welding scheme.

Contents

(1) To meet the present and future ballast demand the existing two quarries will have to be rehabilitated. This is also a prerequisite for the introduction of mechanized maintenance. Implementation should be carried out in 1985–86. The costs in 1984 prices are estimated to be USD 3.0 million.

(2) Manual maintenance methods are not able to maintain the track adequately since heavy monobloc concrete sleepers are used. Mechanized maintenance will be introduced in 1985–1990 at a cost of USD 14.9 million.

(3) Rail burns repairs are a prerequisite for mechanized maintenance. Therefore these works should be carried out in 1985–1989 at a cost of USD 0.5 million.

(4) In 1978–79 heavy rains caused serious landsliding between km 506 and 579 on the line. Permanent repairs of these sites should be carried out in 1988–1995 at a cost of USD 12.0 million.

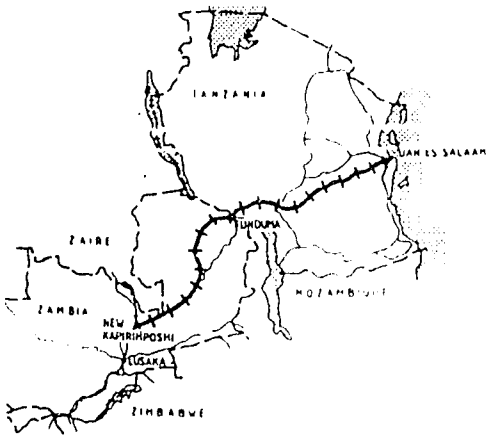
(5) To prolong the life of the rail and to reduce maintenance cost a welding scheme should be implemented in 1993–1998 at a cost of USD 16.6 million (1984 prices).

Status — EEC experts have made an assessment on permanent way maintenance on TAZARA and SATCC/Technical Unit has prepared dossiers with cost estimates for all parts of the project. Australian Consultants have studied the landslides problem. EEC, ADB, SIDA and Austria have been approached for funds. Italy has expressed her interest in the project.

Action — A Donors Conference is planned to be held in the last quarter of 1984.

August 1984

2.7.2 REPOWERING AND SUPPLY OF LOCOMOTIVES FOR TAZARA



Estimated Costs:

USD 45.0 million (1984 prices)
USD 55.0 million (current prices)

Financing:

Secured: USD 23.0 million (based on 1984 prices)
Requested: USD 32.0 million
Foreign currency part: 100%

Executing Agency:

TAZARA

Start:

1982, ongoing project

Duration:

6 years from 1985

Scope — Acquisition of 8 diesel electric, 6-axle main line locomotives, and 30 MTU engines for repowering of old locomotives in order to increase operating capacity to correspond the demand, in addition of the 14 locomotives already acquired.

Contents — Originally Tazara had 85 Chinese main line 80-ton 4-axle diesel hydraulic locomotives and 17 shunting locomotives. The engines of 80-tonne locomotive have been overstressed when operating over the mountain section. This coupled with accidents and maintenance problems, has gradually reduced the fleet and availability for operations. Shortage of motive power became a bottleneck seriously affecting the capacity of TAZARA to handle the offered traffic.

Against the above background the ongoing project was launched. Altogether 14 new main line locomotives have already been acquired, financed by the Federal Republic of Germany, and 18 DFH 2 locomotives have been repowered financed by TAZARA. An order has been placed for 22 more MTU engine blocks to repower 8 main line and 6 shunting locomotives.

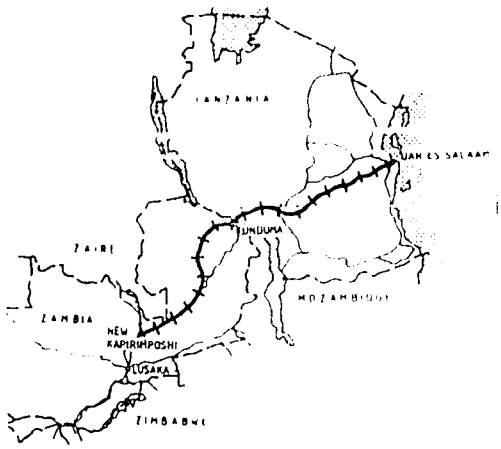
To complete the project and to provide adequate motive power for the future, increasing traffic, 8 more main line locomotives and 30 engine blocks will have to be acquired gradually over a 6 year period.

Status — SATCC/Technical Unit has prepared a dossier for financiers with cost estimates and a time schedule for implementation.

Action — It is expected that the project will be reviewed at a Donors Conference to be organized during the last quarter of 1984.

August 1984

7.3 SUPPLY OF WAGONS FOR TAZARA



Estimated Costs:

USD 18.8 million (1984 prices)
USD 24.0 million (current prices)

Financing:

Requested : USD 24.0 million
Foreign currency part: 100%

Executing Agency:

TAZARA

Start:

1985

Duration:

6 years

Scope — Supply of 375 railway wagons.

Contents — TAZARA wagon fleet consists of 1750 wagons. Of these 130 flat wagons are suitable for container traffic. 170 dropsided wagons are being modified by TAZARA for the growing container traffic.

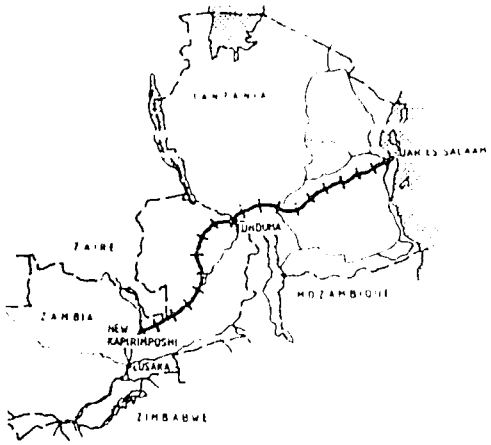
Considering the forecasted volume and composition of future traffic 350 additional high sided and 25 tank wagons are needed during a six year period. All tank wagons and half of the high sided wagons are needed during the first three years.

Status — SATCC/Technical Unit has prepared a dossier for financiers with cost estimates and a time schedule for the implementation of the project. Switzerland has expressed interest in the project.

Action — It is expected that the project will be reviewed at a Donors Conference during the last quarter of 1984.

August 1984

2.7.4 TERMINAL FACILITIES AT NEW KAPIRI MPOSHI STATION, TAZARA



Estimated Costs:

USD 0.3 million (1984 prices)
USD 0.4 million (current prices)

Financing:

Secured : USD 0.4 million
Foreign currency part: 70%

Executing Agency:

TAZARA

Start:

1988

Duration:

1 year

Scope — Improvement of terminal facilities at the New Kapiri Mposhi, the junction between TZR and ZR.

Contents — At the New Kapiri Mposhi station transhipment of imported goods takes place to certain extent. At present the facilities consist of a small warehouse, an open platform, a container area and extension of rail spurs to these facilities. Additional land has been allocated by the Zambian Government.

Originally the project included the building of a comprehensive goods terminal. It has been realized, however, that such needs do not exist any longer. Container terminals in Lusaka and Ndola are expected to cater for future traffic adequately.

A limited amount of traffic destined to the New Kapiri Mposhi area can be better handled by local transhipments. Some additional facilities are also needed for the interchange of traffic between TAZARA and the Zambian Railways and for bottleneck situations.

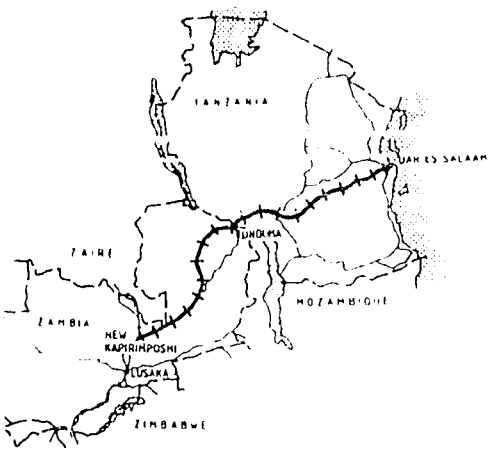
On the above basis the project includes the building of 3 additional tracks and levelling of a container handling area.

Status — A dossier for implementation purposes has been prepared by the Technical Unit of SATCC.

Action — The implementation will be carried out and financed by TAZARA starting in 1988/89.

August 1984

2.7.5 SUPPLY OF TROLLEYS, TRAILERS AND MECHANICAL EQUIPMENT TO TAZARA



Estimated Costs:

USD 6.7 million (1984 prices)
USD 7.0 million (current prices)

Financing:

Requested : USD 7.0 million
Foreign currency part: 100%

Executing Agency:

TAZARA

Start:

1985

Duration:

2 years

Scope — Acquisition of trolleys and trailers, rescue and rerailing equipment, wheel lathes and mechanical equipment for workshops, and mechanical handling equipment.

Contents — The project includes the following acquisitions:

(1) 6 large motor trolleys for supervision and inspections, 20 trolleys for signalling and telecommunications gangs, 2 rail cars with accommodation facilities for the headquarters and 210 trailers (about 2 for each maintenance gang); USD 1.5 million in 1984 prices;

(2) 1 rescue crane of 80-100 tonne capacity and 6 sets of rerailing equipment; USD 1.6 million;

(3) 2 underfloor, semiautomatic wheel lathes, spares and training by manufacturer, construction of pits and mounting, and rehabilitation of the existing 2 lathes; USD 1.9 million;

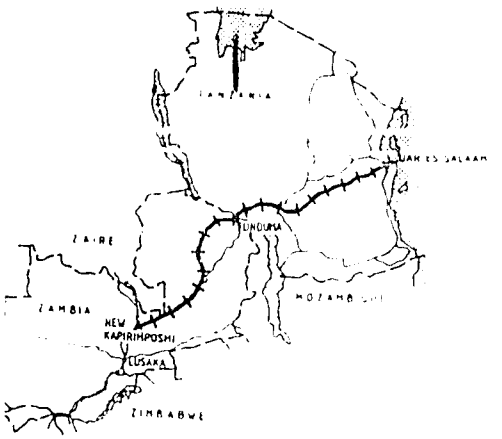
(4) for workshops at Mpika and in Dar-es-Salaam 2 tractor trailers, 2 7 tonne trucks, 2 shunting tractors, crane equipment and motorized screw jacks for assembling and disassembling DE locomotives, 4 moulding machines and urgently needed spares; USD 1.0 million; and

(5) 2 25-tonne fork lifts, 3 3-tonne forklifts and 6 movable belt conveyors for mechanized handling of goods; USD 0.7 million.

Status — Dossiers concerning all above items 1-5 have been prepared by the Technical Unit of SATCC. SIDA has been approached for funds.

Action — It is expected that a Donors Conference on TAZARA projects will be organized during the last quarter of 1984.

2.7.6 ACQUISITION OF SIGNALLING AND COMMUNICATIONS EQUIPMENT TO TAZARA



Estimated Costs:

USD 8.8 million (1984 prices)
USD 11.[illegible] million (current prices)

Financing:

Required : USD 11.0 million
Foreign currency part: 80%

Executing Agency:

TAZARA

Start:

1986

Duration:

10 years

Scope — Acquisition of various equipment for signalling and telecommunications.

Contents

(i) For implementation in 1985–1986:

- solar power panels for powering signalling and telecommunications equipment including installation and consulting services for tendering and supervision; USD 0.8 million in 1984 prices; foreign currency part 90%;
- back-up HF radio system including installation; USD 0.3 million; foreign currency part 100%; and
- replacement of teleprinters; USD 0.1 million, foreign currency part 100%.

(ii) For implementation in 1988–1989:

- automatic train stop devices; USD 5.3 million, foreign currency part 80%.

(iii) For implementation in 1991–1995:

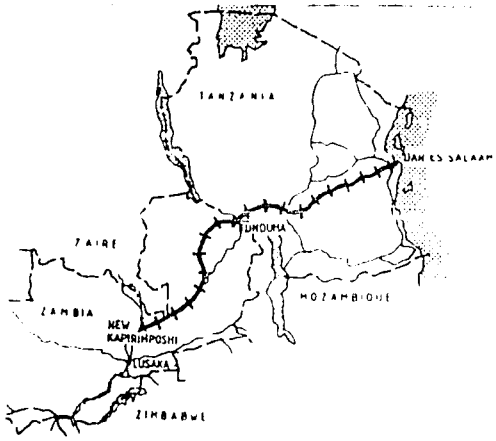
- feasibility study on the future telecommunications system; USD 0.2 million, foreign currency part 100%; and
- track circuiting of intermediate stations; USD 2.1 million, foreign currency part 70%.

Status — Dossiers on all above subprojects have been prepared by the Technical Unit of SATCC. DANIDA, CIDA and Switzerland have been approached.

Action — It is expected that a Donors Conference on TAZARA projects will be organized during the last quarter of 1984.

August 1984

2.7.7 TECHNICAL ASSISTANCE AND TRAINING, TAZARA



Estimated Costs:

USD 4.0 million (1984 prices)
USD 4.5 million (current prices)

Financing:

Requested : USD 4.5 million
Foreign currency part: 70%

Executing Agency:

Tazara

Start:

1985

Duration:

4 years

Scope Technical assistance to the head office of TAZARA and preparation of manpower development and training plans.

Contents The projects contains two parts:

(i) Technical Assistance to the Head Office

Because of operational problems the Authority's activities can so far be compared with crisis management. To face the new challenges the Authority needs technical assistance to develop and improve:

- corporate planning methods;
- operations;
- accounting procedures and other activities related to finance;
- accident prevention; and
- procedures for and scheduling of maintenance of locomotives and rolling stock and other activities in the workshops.

It is estimated that 225 manmonths are needed for the project. The costs are estimated at USD 2.7 million in 1984 prices of which 80% in foreign currency.

(ii) Manpower and Training Development

This subproject consists of two parts:

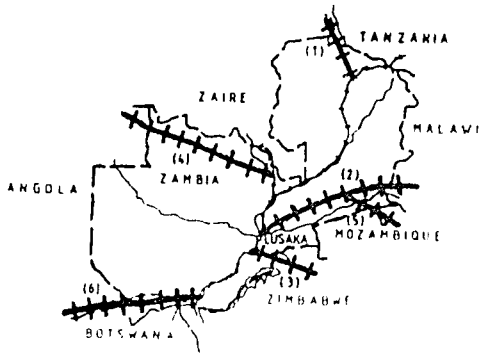
- technical assistance to the Authority to formulate a manpower development plan; and
- based on the above plan initiation of the implementation of a training programme, including training facilities.

The cost estimates is USD 1.3 million in 1984 prices of which 54% in foreign currency.

Status Dossiers for both of the above subprojects have been prepared by the Technical Unit of SATCC. Italy has been approached for funds.

Action A Donors Conference on TAZARA projects is planned for the last quarter of 1984.

2.8.1 FEASIBILITY STUDY FOR NEW RAIL LINKS CONNECTING ZAMBIA WITH NEIGHBOURING COUNTRIES AND WITH PORTS



Estimated Costs:

Fixed: USD 0.8 million (1984 prices)
Total: USD 0.8 million (current prices)

Financing:

Requested : USD 0.8 million
Foreign currency part: 100%

Executing Agency:

Ministry of Power, Transport and Communications

Start:

1985

Duration:

8 months

Scope — Feasibility study for possible new railway connections to the sea for Zambia's foreign trade.

Contents — The viability of the following alternative links shall be studied:

(1) a link from Tanara to Mpulungu port on Lake Tanganyika (approximately 160 km); and

(2) links:

(i) from Lusaka to Chipata to connect with the Malawi Railways (approximately 600 km);

(ii) from the Livingstone–Lusaka line at Kafue to Zawi, connecting with the Zimbabwe railways system (approximately 300 km);

(iii) from the Lusaka–Zaire line at Chingola to Nucussueje on the Benguela line by-passing Zaire (approximately 760 km); and

(iv) from link (2) at Katete to Moatize to connect with the railway system in Mozambique (approximately 300 km); and

(v) from Livingstone to Grootfontein in Namibia via Caprivi Strip to connect with the railways in Namibia (approximately 850 km).

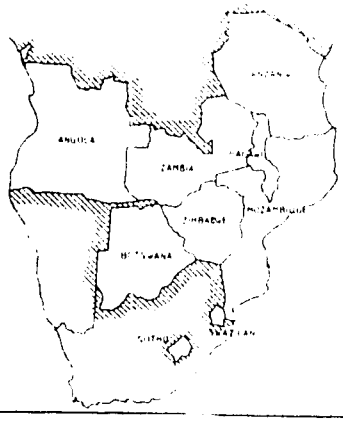
Development plans made in Zambia and in the neighbouring countries are expected to increase trade and demand for transport. Therefore a new study is considered necessary although the "Zambia Coastal Link Transport Study" was finalized as recently as in June 1980.

Status — Part (1) of the project will be financed by ADB. A Swedish Consultant has been appointed to prepare terms of reference for that part of the study which is related to the ongoing improvements to Mpulungu port financed by EEC.

Action — Funds are being sought for part (2) of the project.

LIST OF PORTS AND WATER TRANSPORT PROJECTS

3.0.1 REGIONAL CO-OPERATION ON SHIPPING



Estimated Costs:
USD 0.2 million (1984 prices)

Financing:

Requested: 0.2 million
Foreign currency part: Approx. 90%

Executing Agency:
Southern Africa Transport and Communications Commission

Start:
1984

Duration:
12 months

Scope Study of possible areas of co-operation among Member States in the field of Shipping including the advantages of establishing a regional shipping line of Southern Africa.

Contents The project aims at furthering co-operation on shipping among the Member States by way of pooling resources available in the region in order to achieve maritime services adapted to the specific needs of the region.

The study should include but not be limited to the following points:

- A comprehensive analysis of the shipping services at present available to the region;
- Survey of the present cargo flow and forecasts up to the year 2000;
- Corresponding shipping requirements for the defined trades;
- Inventory of shipping resources available in the region;
- Determination of type and amount of additional resources to fill the gap between demand and supply;
- Definition of alternative strategies to secure these resources for the region;

If the findings of the study indicate that a regional shipping line will be effective means to achieve better maritime services, the study should also give recommendations on:

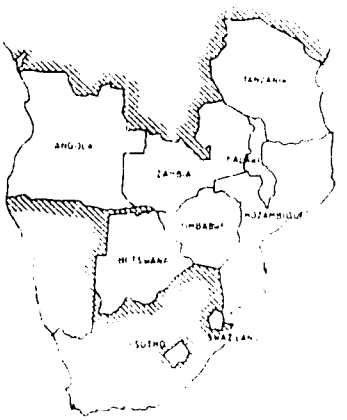
- planning, organisation, administration and management of the line;
- trades to be covered by the line;
- types and number of vessels to be operated initially;
- development programme for short term and intermediate term periods.

The recommendations should be supported by sufficient economic and financial analyses to show the viability of the recommended project.

Status Terms of reference have been prepared and a Programme for Consulting Services proposed. Italy has been approached for financing of the study, and negotiations with Consultants are proceeding.

Action It is expected that the study will commence in 1984 upon the completion of the negotiations.

3.0.2 PORT STAFF TRAINING PROGRAMME, REGIONAL



Estimated Costs:
USD 0.6 million (1983/84 prices)

Financing:
Secured : USD 0.6 million
Foreign currency part: 75%

Executing Agency:
Southern Africa Transport and Communication Commission

Start:
1983

Duration:
15 months

Scope Identification of measures to be taken in order to provide the ports of the region with adequately trained personnel for all port functions and levels.

Contents Study reviewing the problems in the regional ports in order to recommend on measures to achieve better management operations, maintenance and coordination as well as to overcome the difficulties in communication between ports and users. The study shall deal with the following items:

a) Inventory and assessment of
- existing local and institutional conditions in the field such as organisations, duties and powers of Port Authorities on national and local levels;
- availability of qualified staff in the different levels and positions;
- existing training facilities and their capacity, quality of training offered etc.

b) Identification and quantification of short-, intermediate and long term needs for qualified personnel on the different levels and positions.

c) Definition of ways and means to secure necessary education and training for this personnel.

d) Recommendations on measures to be employed on Regional, National and Port levels.

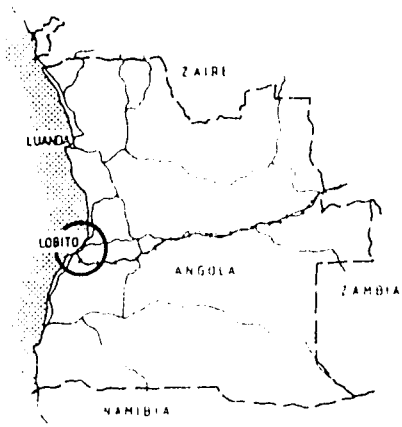
e) Time schedule for implementation of proposed programme together with cost estimates.

The study is divided into two main parts, namely identification of required measures to be implemented within the short time perspective, and identification of training needs and requirements for training facilities in order to achieve self sufficiency in the long term perspective.

Status The study is being financed by Norway. Consultants have finished the first part of the study and submitted an Interim Report which has been reviewed SATCC and the Port Directors meeting.

Action Completion of the study.

3.1.1 MASTERPLAN FOR THE PORT OF LOBITO



Estimated Costs:
USD 0.7 million (1984 prices)

Financing:
Secured : USD 0.7 million

Executing Agency:
Ministry of Technology and Construction

Start:
1983

Duration:
12 months

Scope — To prepare an intermediate and long term development plan for the port of Lobito. The work is to be carried out in two consecutive phases, viz a "Preliminary Study" and a "Development Plan".

Contents — The aim of the project is to create a plan for the timely development of the port to enable it to meet the demands of future maritime traffic. The planning work comprises two parts - the preliminary study and the development plan.

The preliminary study will, i.a., include:

- Analyses of the present and planned economic activities in the port hinterland regarding their future contribution to the traffic flows through the port;
- Forecasts of the commodity flows with regard to volume, origin and destination, modes of transport, etc;
- Analyses of the capacity demands on port facilities, related installation and equipment as well as on connections with overland transportation systems;
- Assignment of specific areas for all logical port and port related activities and their intermediate term expansion needs; and
- Analyses of the impact of the capacity of the recommended solution on the master development plan of the city of Lobito.

The results of the preliminary study was been summed up in a report to the Government. The results will give the input data for the development plan.

The development planning shall include all necessary technical and socio-economic studies to realise the requirements indicated in the preliminary study report. The plan considers all the undertakings anticipated concerning the port of Lobito and will be presented in four stages viz:

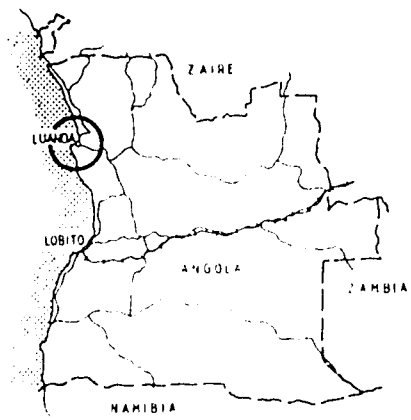
a) for the use of the existing wharfs during the next three-year period;
b) for the use of the 995m wharf under construction;
c) for the medium term period until 1990; and
d) for the long term perspective.

The development plan will also include the organization of a department for coordination of operations, port planning and control, training of staff etc.

Status — The project is financed by DANIDA and the work is in progress since January 1983. A preliminary study report has been submitted by the consultants in September 1983 and is now approved by the Government.

Action — Completion of the study.

3.1.2 DEVELOPMENT OF THE PORT OF LUANDA



Estimated Costs:
USD 25.5 million (1984 prices)
USD 28.0 million (current prices)

Financing:
Secured : 13.6 million
Requested: 14.4 million
Foreign currency part: 85%

Executing Agency:
Ministry of Technology and Construction

Start:
Ongoing project

Duration:
4 - 6 years

Scope Development of the Port of Luanda to meet the future needs of the traffic in dry bulk commodities, pallets, containers and RO/RO as to the demands for modern handling and to improve the working conditions of the labour force.

Description The project comprises several sub - projects consisting of civil works, procurement of equipment and technical assistance.

(1) Design and construction of a container and RO/RO terminal. The first phase of this project will be a study further elaborated as a subproject on the following pages. The estimated cost of this study is USD 0.4 million. (Total cost of the project is so far unknown).

(2) Construction of a Grain Terminal including silos and 165 m of quay as well as equipment and conveyers.

The estimated cost of this is USD 11.9 million of which the silos part is USD 5.6 million. For the latter part financing is secured.

(3) Modernisation and enlargement of the electrical system of the port. For this there is a contract in the amount of USD 3 million covering the existing older parts of the port but this will have to be enlarged to cover the planned port extensions.

Estimated cost for the whole project is approximately USD 5 million.

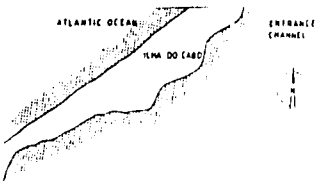
(4) Earthwork, compacting and paving of 100 000 m^2 of backup area to the general cargo quay. Estimated costs USD 5 million.

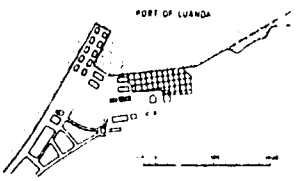
(5) Construction of canteen facilities for 2.500 workers of an estimated cost of USD 3.4 million.

Status For subproject (1) terms of reference have been drafted; for (2) the larger part of the equipment is already stored in the port and sub-soil investigations at the new site are under way. There is no financing for the civil works as yet; For (3) the enlargement must be planned in the context of the new port extensions; (4) Four is on the verge of being completed and for (5) there are proposals but no financing. Financing of (3), (4) and (5) has been discussed with ADB.

Action Financing or remaining financing is being sought for all sub-projects.

5.1.2 (1) CONTAINER AND RO/RO TERMINAL IN THE PORT OF LUANDA





Estimated Costs:
USD 0.2 million (1984 prices)

Financing:

Requested: USD 0.2 million

Executing Agency:
Ministry of Technology and Construction

Start:
1993

Duration:
4 months

Scope — Study on container and roll on / Roll off facilities needed in the Port of Luanda defining future investment requirements and operating procedures.

Contents — The study will fall into two parts:

- an investigation of immediate requirements for the present traffic including terminal operations ; and
- an investigation of longer term requirements.

Immediate requirements :
Review of the short term arrangements plans and for handling the existing levels of container and RO/RO traffic and make recommendation for improvements and investments required immediately also paying attention to operations management including documentation.

Long term requirements:

Forecast of the container and RO/RO traffic for determination of future capacity requirements giving a twenty year perspective. Alternative methods of dealing with the expected growth in traffic shall be evaluated and recommendations made on investment requirements as well as on necessary improvements in management and operations procedures as well as staffing requirements. The consultants will also be required to prepare financing proposals for the investments finally selected by the Government.

Status — Terms of reference have been drafted.

Action — Financing is being sought for the project.

3.5.1 INCREASE IN CAPACITY OF THE PORT OF MAPUTO

Estimated Costs:
USD 60.7 million (1984 prices)
USD 77.0 million (current prices)

Financing:
Secured : USD 19.8 million
Requested: USD 68.2 million
Foreign currency part: 90%

Executing Agency:
National Directorate of Ports and Railways

Start:
1984

Duration:
6 - 7 years

Scope The project comprises three parts which during the implementation will be treated as different projects:

3.5.1 (1) Improvement of the Entrance Channel to the Port of Maputo and the Matola Terminals (Feasibility Study in two phases)

3.5.1 (2) Coal handling terminal at Matola

3.5.1 (3) Maputo Container Terminal

Contents The project comprises of three sub-projects:

(1) Improvement of the entrance channel by dredging and realignment to permit the passage of large vessels to the Matola terminals using normal tides as well as of container vessels to the Maputo Container Wharf on all tides. The first phase will be a feasibility study further elaborated as a sub-project on the following pages.
Estimated cost of the study is USD 0.8 million in the first phase.

(2) Construction of a Coal Handling Terminal at Matola for the coal exports mainly from Zimbabwe, Swaziland and Botswana.
Phase I: Conversion of the present ore terminal to coal handling with a capacity of 3.0 million tonnes per annum. Estimated costs USD 1.8 million (1983 prices).
Phase II: Extension of the terminal to 7 million tonnes per annum. Redesign and construction costs are estimated at USD 35.0 million (1983 prices).

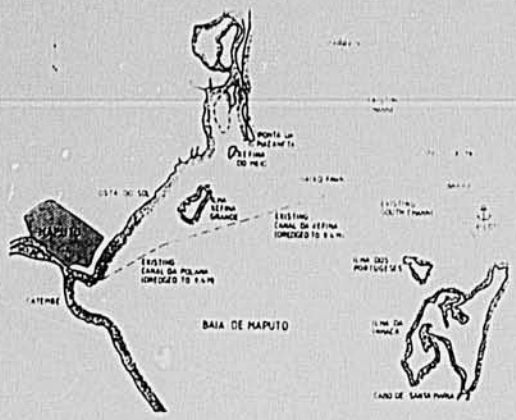
(3) Maputo Container Terminal project comprises the purchase of two container cranes for the service of cellular container vessels, layout of terminal area, introduction of handling system, purchase of shore side equipment for handling and retrieving containers and technical assistance to the terminal management.

Status The first phase of the Entrance Channel Study (1) will be financed by Denmark.

Two CMI container cranes are being erected financed by Italy at a cost of USD 7.5 million. The Brittish Government has financed a feasibility study which was submitted in November 1983 recommending a phased development plan, the first phase of which demands investments of roughly 12.1 million up to 1986. The technical assistance part is assessed at USD 1.5 million and will be financed by UK.

Action The financing situation of (2) is being clarified.

3.5.1(1) IMPROVEMENT OF THE ENTRANCE CHANNEL TO THE PORT OF MAPUTO AND THE MATOLA TERMINALS



Estimated Costs: (First Phase)
USD 0.8 million (1984 proces)
USD 0.9 million (current prices)

Financing:
Secured: 0.9 million
Foreign currency part: 85%

Executing Agency:
National Directors of Ports and Railways

Start:
1984

Duration:
18 months

Scope — Study to provide recommendations regarding the economic and technical feasibility of improving the channel to permit the passage of large vessels to the Matola terminals on normal tides and of container vessels to the Maputo Container Wharf at all tides.

Contents — The first phase of the feasibility study includes the following topics:

- hydrographic, geotechnical and hydraulic investigation of the sea access to the port to provide a basis for realistic estimates of proposed improvement works;
- preliminary engineering studies including cost estimates of capital and maintenance dredging etc;
- cost analysis for three alternative depth and width of the channel;
- alternative time schedules for the implementation;

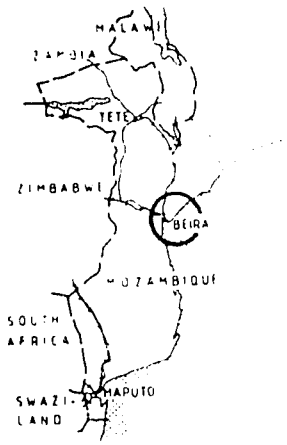
The studies are to be carried out to a level that will provide a sound basis for the final design and the preparation of contract of documents.

Status — Already in 1981 project description and terms of reference were approved by the Belgian Government which undertook to finance the study. The terms of reference have been revised April 84 and submitted to DANIDA who has appointed an apprisal team to look into the details of the project.

Action — Originally the work was supposed to start in March 1982. The improvement of the channel is a condition for the viability of the other Maputo Port projects. DANIDA will finance the technical part of the study (First Phase), which will start soonest.

August 1984

4.5.2 INCREASE IN CAPACITY OF THE PORT OF BEIRA



Estimated Costs:
USD 470 million (1984 prices)
USD 444 million (current prices)

Financing:
Secured : USD 31,7million
Requested: USD 367.6 million (first phase until 1990)
Foreign currency part: 90%

Executing Agency:
National Directorate of Ports and Railways

Start:
Ongoing project since 1981

Duration:
20 years

Scope: Deepening and widening of the Entrance Channel and providing new infrastructure and equipment as well as a technical assistance as defined in Master Plan.

Contents: The Project comprises 16 sub-projects as follows:

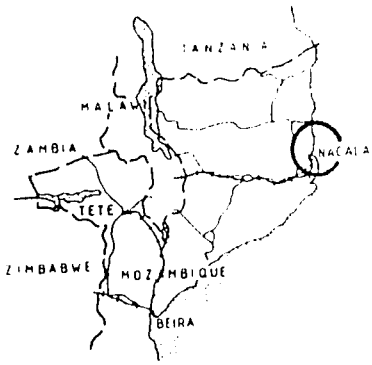
(1) Rehabilitation and short-term improvement of existing infrastructure (1985)	USD 21.1 million
(2) Entrance Channel Study (Sept 1982)	USD 3.4 million
(3) Master Plan Study (April 1984)	USD 1.2 million
Master Plan Projects:	
(4) Construction of Service Port Facility (1986)	USD 3.6 million
(5) Construction of Oil Terminal (1986)	USD 9.2 million
(6) Construction of Sugar/Cereals Terminal (1987)	USD 31.3 million
(7) Reconstruction of berths 4-5 to Multi-Purpose terminal (1987)	USD 34.5 million
(8) Reclamation and Dredging to CD-8 m (1986)	USD 9.5 million
(9) Reclamation for new Coal Terminal (1986)	USD 40.3 million
(10) Railways for non-coal Traffic (1989)	USD 17.8 million
(11) Roads (1988)	USD 3.7 million
(12) Container/M-P Terminal, berths 1-3 (1989)	USD 54.6 million
(13) Channel Dredging a) to CD - 10 m (1989) b) to CD - 14 m (1993)	USD 21.6 million
(14) Coal Terminal; Civil Infrastructure and equipment Phase 1-2 (1990)	USD 81.8 million
(15) Development of berths 6-10 (1992)	USD 8.5 million
(16) Coal Terminal; Phase 3 (1999)	USD 39.8 million

The year in brackets indicates completion of sub-project according to plan. For projects planned to be completed before or during 1990 cost estimates are stated on current prices; later projects in 1984 prices.

Status: Implementation of the rehabilitation measures are carried out with support of the Netherlands. The Master Plan Report has been reviewed by SATCC/TU and the Project Authorities. An implementation schedule for the prioroty projects has been agreed upon. The sub-projects (4) to (8) may be implemented independently of the development of the coal traffic. However, due to the long term regional importance of developing the coal export it is recommended that the works on a new coal terminal is started soonest.

Action: Project documentation on the priority sub-projects for submission to individual financiers is under preparation.

3.5.3 DESIGN AND CONSTRUCTION OF CONTAINER TERMINAL FOR THE PORT OF NACALA



Estimated Costs:
USD 9.9 million (1984 prices) PHASE I
USD 10.9 million (current prices)

Financing:
Secured : 10.9 million

Executing Agency:
National Directorate of Ports and Railways

Start:
Jan. 1984

Duration:
3 years

Scope: Design and construction of container facilities, purchase of container handling equipment and technical assistance to the management.

Contents: It is the aim of the project to provide the port with adequate container facilities to meet the demand in a cost efficient way. Therefore the implementation of the project has been staged in phases according to the following programme:

Phase I: Improvement of present facilities comprising:

a) lay-out of terminal area including rail and road connections

b) definition of handling system, specification and ordering of equipment (crane and shore-side machinery)

c) pavement of roads and storage areas

Phase II: Technical feasibility study and design of 300m new container wharf with back-up area

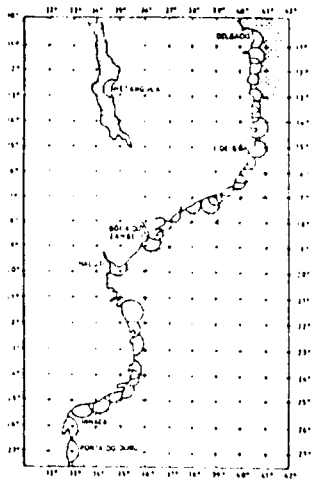
Phase III: Construction of 300m container wharf and reclamation of back-up area

Phase IV-V: Further land reclamation up to 195 000 m^2 and successive pavement of 150 000 m^2 storage area

Phase VI: Final lay-out, construction of terminal buildings, overland connections, fencing etc.

Status: The Finnish Government will finance the foreign currency part of Phase I, (10.9 mill.) including the cost of technical assistance and housing for the Finnish personnel at USD 1.5 million. An agreement to this effect has been signed in September 1983. The project has started and will go on for 3 years after which the first Phase will be completed. At present 7 experts are working in the port.

3.5.4 NAVIGATIONAL AIDS, MOZAMBIQUE



Estimated Costs:
USD 9.0 million (1984 prices)
USD 10.2 million (current prices)

Financing:
Requested: USD 5.3 million (Phase 1)
Foreign currency part: 90%

Executing Agency:
National Directorate for Maritime and River Transport

Start:
1984

Scope

To increase Safety of Navigation in Mozambique waters through restoring lights and buoys and improving intensity and ranges of navigational aids as well as providing workshops and training for repair and maintenance staff.

Contents

The Project may be divided into three phases i.e. rehabilitation of navigational aids of

1) the regional port areas of Maputo, Beira and Nacala;

2) the coastal areas, and

3) small ports and inland waters

Supportive projects as repair and maintenance workshops, training of personnel and administrative and Technical Assistance are included.

The cost of phases 1 and 2 are distributed as follows (million SEK)

	Phase 1	Phase 2
Equipment and civil works	12.4	18.4
Buoys	11.9	-
Workshops	1.5	
Technical Assistance and Training	10.6	10.9
Freights and vehicles	4.6	1.4
Total	41.0	30.7
Time contingencies	1.7	8.0
Total current prices	42.7	38.7

Phase 1 is estimated to require two years and phase 2 three years implementation.

Status

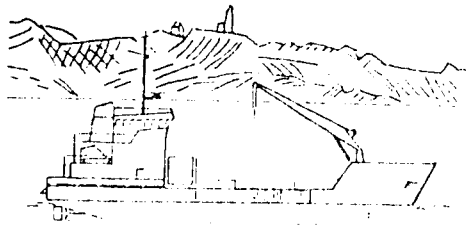
SIDA has been approached for financing and has sent an appraisal mission to Mozambique in March 1984. The appraisal mission recommends the project to be started soonest.

The mission also emphasizes the need of a buoy tender to implement the project and for future maintenance of the navigational aid system. Thus an independent sub-project is introduced as Project 3.5.4(1).

Action

The project should start as soon as the financing is secured if possible already in 1984.

3.5.4 (1) BUOY HANDLING AND MAINTENANCE VESSELS, MOZAMBIQUE



Estimated Costs:
USD 4.0 million (1984 prices)

Financing:
Requested: USD 4.0 million
Foreign currency part: 100%

Executing Agency:
National Directorate for Maritime and River Transport (DNTMF).

Start:
1985

Scope — To implement project 3.5.4 and for future maintenance of the navigational aid system a suitable service vessel is needed. The aim of the project is to aid Mozambique in acquiring such a vessel.

Contents — The subproject shall cover the purchase and commissioning of a buoy handling and maintenance vessels which also will be used to support the lighthouse construction on islands and in other locations where overland transport is unfeasible. The vessel shall also be fit for salvage operations and for hydrographic survey work.

It is envisaged that a specialist, appointed by the prospective financier, makes

1) a specification of the general ships caracteristics and properties needed,
2) a survey of the newbuilding and second hand market for this type of ship,
3) a report to the financier and DNTMF including possible alternatives and recommendations.

The purchase of the ship shall include spareparts for at least 2 years service and provisions for adequate training of the Mozambican crew.

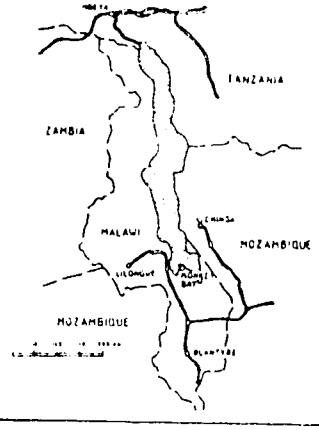
Cost estimates, newbuilding 1984 prices

Total price vessel (ex yard north-west Europe):	USD 3.2 million
Spare parts:	USD 0.1 million
Technical assistance and training, 40 man months:	USD 0.3 million
Contingencies	USD 0.4 million
Total	USD 4.0 million

Status — DNTMF has made a specification for the general characteristics of the vessel and also got quotations on newbuildings.

Action — Contact is to be taken with prospective financiers.

3.7.1 DEVELOPMENT OF NAVIGATION ON LAKE MALAWI / NIASSA



Estimated Costs:
USD 0.4 million (1984 prices)

Financing:

Requested: 0.4 million
Foreign currency part: Approx. 80%

Executing Agency:
Southern Africa Transport and Communication Commission

Start:
1984

Duration:
One year

Scope Feasibility study on means to achieve a co-ordinated Transportation System on the Lake.

Contents The project objective is to achieve a co-ordinated transportation system for goods and passengers for the three countries bordering on the Lake, thus widening the regional markets as well as providing access to the international markets through alternative out-lets. It aims not only at studying the conditions necessary for co-ordinated shipping services on the Lake, but also at establishing the required type and location of terminal facilities considering the physical, meteorological and hydrological characteristics on the Lake.

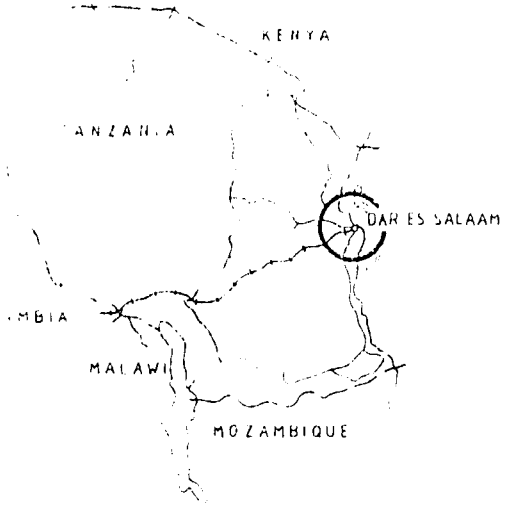
The study shall account for the following points:

1) Traffic forecasts paying particular attention to the development of new cargo flows such as pulp from the Vipya mill possible coal traffic from the northern coal field and to prospect for cross-lake traffic;
2) Operating aspects as regards
   - type and structure of terminal facilities, taking into account changes in water level (extent, cause, facilities, means of control), meterological characteristics, soil condition etc,
   - location of terminal and repair and maintenance facilities; connections to existing rail and road systems,
   - navigation aids and co-ordination of communications,
   - capacity and suitability of existing vessels and requirements for new vessels;
3) Economic and financial analyses; and
4) Development of personnel training programmes and facilities to meet also regional maritime training needs.

Status Since 1935 a lake transport service has operated as a branch of Malawi Railways. The service includes only Malawi ports. To date there are six passenger and cargo vessels, five tugs, six cargo barges and some motor launches. There are repair and maintenance facilities with slipway and a floating dock at Monkey Bay. Tanzania operates a service between Mbamba Bay and Itungi with one 80 passenger boat and one cargo vessel of 150 DWT. There is a Marine Training Centre at Monkey Bay on Lake Malawi. The UN are supporting the school through IMCO. Terms of Reference for the project have been approved.

Action The project will be financed by DANIDA. Consultants have been shortlisted.

3.7.2 DEVELOPMENT OF THE PORT OF DAR ES SALAAM



Estimated Costs:
USD 119.5 million (1984 prices)
USD 144.5 million (current prices)

Financing:
Secured : USD 65.8 million
Requested: USD 61.3 million
Foreign currency part : 85%

Executing Agency:
Tanzania Harbours Authority

Start:
1984

Duration:
5 - 7 years after complete financing

Scope — The project comprises several parts in various fields of port engineering and operation.

Contents — The project heading relates to several sub-projects:

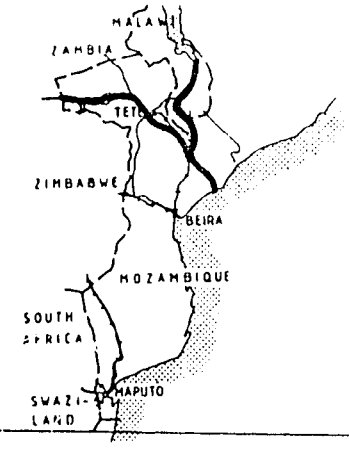
	Current prices
Works:	
(1) Kurasini Oil Terminal Rehabilitation	USD 2.3 million
(2) Improvement of Harbour Entrance Channel	USD 45.4 million
(3) Conversion of three General Cargo Berths into a Container Terminal	USD 22.6 million
(4) Construction of Grain Facility	USD 16.7 million
(5) Construction of Ubungo Container Depot	USD 3.7 million
(6) Modernization of Lighter Wharf	USD 6.7 million
(7) Construction of a Tug Berth	USD 5.2 million
(11) Rehabilitation of Berths 1 - 8	USD 16.7 million
Equipment	
(8) Purchase of shore-based Container and General Cargo Handling Equipment	USD 14.7 million
(9) Purchase of Floating Craft - Berthing Tug and Pilot Boat	USD 3.5 million
(10) Equipping and Staffing Bandari College and technical assistance to THA	USD 6.0 million
Studies	
(12) New Oil Terminal for Outer Harbour	USD 0.2 million
(13) Transit warehouse for Zaire, Burundi and Ruanda Cargo	USD 0.3 million
(14) Container Handling in Tanzania	USD 0.5 million

Status — Technical Studies and detailed designs unto preparation of tender documents have been carried out for Works Projects 1 to 7, specifications are available for Equipment Projects 8 to 10 and Terms of Reference have been drafted for the Studies except for No. 13.

The World Bank has made a Staff Appraisal Report on a Project Package comprising the above Works and Equipment projects except Nos. 2,7 and 9. A Financing Plan between the World Bank and the co-financiers mainly the Nordic Countries and the Netherlands has been worked out.

Action — Project documentation on remaining sub-projects for sub-mission to individual financiers are under preparation.

3.8.1 NAVIGABILITY ON THE ZAMBEZI AND SHIRE RIVERS



Estimated Costs:
USD 0.3 million (1984 prices)
USD 0.3 million (current prices)

Financing:

Requested: 0.3
Foreign currency part: 90%

Executing Agency:
Southern Africa Transport and Commission

Start:
1984

Duration:
8 months

Scope Prefeasibility study to establish the engineering feasibility of navigation on Lake Cahora Bassa, the Zambezi and the Shire Rivers.

Contents The aim of the project is to establish the feasibility of using Lake Cahora Bassa, the Zambezi and the Shire Rivers for the transport of bulk carrgoes from and to Zambia, Zimbabwe, Malawi and Mozambique.

The project includes:

- Reviewing earlier studies made on the subject and evaluating their findings in the context of the latest knowledge of the transport needs in the influence region;
- An engineering study and cost appraisals of the structural works necessary to make the river system navigable, and the type of ships possible to use for navigation on the system or part of it. The study should be made at a pre-feasibility level of detail;
- A programme for more detailed investigations, should the appraisals indicate that there is a case for this.

Status A "Background Paper" on Inland Water Transport mainly dealing with Zambezi and its main tributaries has been prepared by the TU and distributed to Member States for consideration and comments. The comments are expected to be of help when preparing Terms of Reference for the study.

Action UNDP has undertaken to finance the study.

August 1984

CIVIL AVIATION PROJECTS

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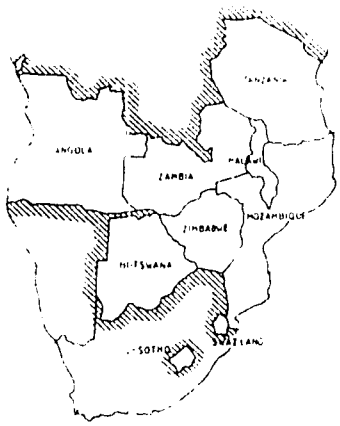
4.0.1(2) TANELEC FLIGHT CALIBRATION SERVICE, ARUSHA



Estimated Costs:
USD 3.4 million - foreign currency
(1984 prices)

Financing:
Requested: USD 3.4 million
Foreign currency part : 100%

Executing Agency:
Tanelec

Start:
1985

Duration:

Scope

Expansion of the Tanelec Flight Calibration Unit, Arusha, for the provision of complete Flight Calibration Services requirements of the SADCC States, including training. Each state is responsible for the regular ground & flight calibration (testing) of its radio navigation, approach and landing aids to ensure that they confirm to all performance standards specified by ICAO. These aids are required for the safe and reliable guidance of aircraft flying from one point to another.

Contents

This project is a continuation and a second phase of the studies conducted by Australian consultants and which are now completed on Project 4.0.1, Regional Co-operation in flight testing of navigational aids, and its Addendum, Operational evaluation of the Tanelec Flight Calibration Services, Arusha.

Status

Background documentation in support of funding assistance has been prepared by the Ministry of Communications and Works of Tanzania. At present Tanelec's primary calibration aircraft is a Piper Navaio fitted with a single console Sierra Flight Inspection System. This set up is technically capable to carry out limited flight calibration of navaids in Tanzania and in a few other SADCC states.

However for it to be able to meet the full requirements for flight testing and calibration of navaids and also cope with the heavy work load needed to cover the whole of the SADCC region, it would require a larger and higher performance type of aircraft such as a turbo-prop or jet aircraft.

The expansion of Tanelec's capacity to cope with this work load would require a total of USD 3.4 million (in foreign currency) to cover the following :-

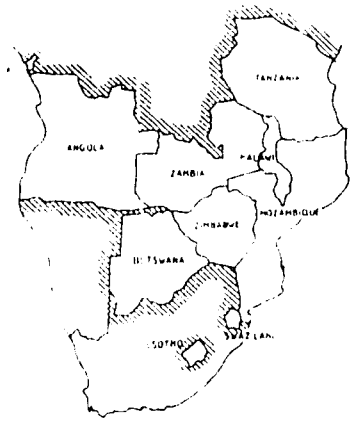
1. procurement of a new primary calibration aircraft (a turbo-prop or a jet)
2. calibration equipment (a second set to be used as back-up)
3. Fault rectification equipment
4. Training equipment
5. Additional Personnel (expatriate and local)

Research has shown that instead of procurement of a new aircraft it is also possible to use a second hand aircraft. In that case the total cost of the project could be reduced by US dollars 0,8 million.

Action

Initial approach to NORAD for assistance to develop the Tanelec Flight Calibration Unit was not accepted.
The Tanzanian Government has now presented a request to Norway for funding from other than bilateral sources and to be made available through international agencies like UNDP. The ADB has also been approached for similar assistance.

4.0.3 STUDY ON JOINT UTILIZATION OF MAINTENANCE FACILITIES FOR AIRCRAFT



Estimated Costs:
USD 0.375 million (1984 prices)

Financing:
Requested: USD 0.375 million
Foreign currency part: 100%

Executing Agency:
Southern Africa Transport and Communications Commission

Start:
1985

Duration:
9 months

Scope — Study to assess the present maintenance and overhaul facilities in the region and evaluate possibilities for future joint utilization of these facilities. Determine man-power requirements, training programme and investments needed to meet current and future needs, aiming at distribution of gains and work load equitably among the participating members.

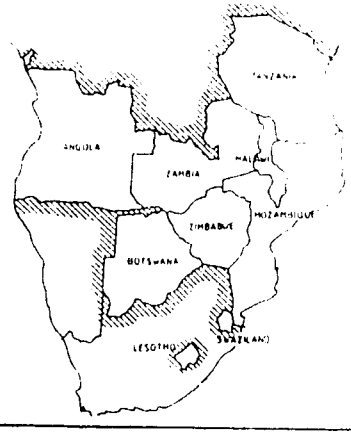
Contents — The aim of the project will be:

- to recommend an optimal system for maintenance and overhaul (including repair) facilities for airframes, engines and components for the airlines registered in the SADCC States, bearing in mind existing facilities and projected fleet development;
- to prepare an outline of a system's concept for the provision of workshop and test facilities;
- to indicate the magnitude of investments by location and to estimate the operating costs;
- to recommend a staffing and operational charges system aiming at distribution of gains and work load equitably among the participating members;
- to recommend the possible distribution of responsibility for various kinds of maintenance work to be undertaken by the participating members;
- to recommend an administrative committee responsible for co-ordination of the aircraft maintenance activities and requirements within the SADCC region;
- to prepare a cost/benefit analysis showing the efficiency improvements which the recommended system will achieve compared to current maintenance and overhaul practices.

Status — Terms of reference have been prepared.

Action — It is expected that the study can be integrated with an ongoing ADB financed continental study. The SADCC Member States not included in this study will be covered by the Technical Unit.

4.0.4 STUDY ON COMMONALITY IN CIVIL AVIATION LEGISLATION



Estimated Costs:
USD 0.41 million - foreign currency (1984 prices)

Financing:
Requested: USD 0.41 million
Foreign currency part: 100%

Executing Agency:
Southern Africa Transport and Communications Commission

Start:
1986

Duration:
12 months

Scope: To achieve the highest degree of commonality in Civil Aviation Acts, Air Navigation Orders and Air Navigation Regulations that will enable adoption and use of co-operative measures which otherwise could be retarded or prevented.

Content: The present Civil Aviation authorities in the SADCC States have, mostly as a matter of expediency, been required to adopt and develop their civil aviation legislation and regulations on basic legislation and philophies inherited from previous administrations. This basic legislation was in many cases suited to a colonial type of administration and had its origin during a period when many of the new universally accepted ICAO standards were in formative stages. It is unsuited to autonomous development.

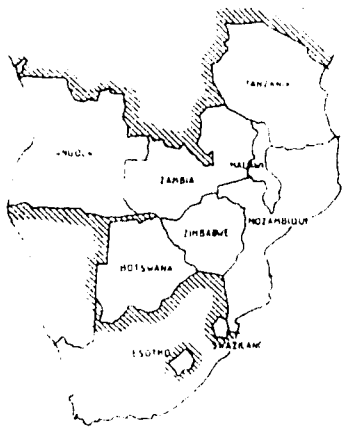
The work will include:

- preparation of an inventory from each State of copies of the existing Civil Navigation Act, Air Navigation Orders and Air Navigation Regulations,
- a review of these documents to ascertain differences in construction and application and whether modifications can be made to facilitate a greater degree of co-ordination. Proposal for change will use ICAO standards as a basis and will need to be discussed with each Civil Aviation Authority concerned to ascertain the practicability and acceptability;
- preparation of a report in detail on recommended changes to application of acts, orders and regulations for Regular Passenger Transport and General Aviation, with particular reference to:
  - personnel licensing
  - aircraft certification, maintenance and servicing
  - aerodrome standards for international operations.

Status: Terms of reference have been prepared and approved by the SATCC Co-ordinating Committee.

Action: ADB has been approached for financing.

4.0.5 STUDY ON GENERAL AVIATION ACTIVITIES



Estimated Costs:
USD 0.39 million (1984 prices)

Financing:
Requested : 0.39 million
Foreign currency part : 100%

Executing Agency:
Southern Africa Transport and Communications Commission

Start:
1985

Duration:
9 months

Scope — A total study of the policy, regulations and operations of General Aviation taking into account its role in development, including charter, aerial work and aerial medical services.

Contents — There are at present approximately 800 General Aviation aircraft and well over 1000 aerodromes and landing strips in the nine SADCC States. The most commonly used regular passenger transport aircraft in regional operation, the Boeing 737, can land on only 36 of them.

From the discussions in the meeting of Directors of Civil Aviation and air-line executives in Maputo in July 1982, it was evident that they are looking to a study for guidance on a considerable range of matters, including :

- the establishment and implementation of mutually acceptable policies and regulations which will permit General Aviation operations - particularly commuter and charter type operations - to be developed and integrated with Regular Passenger Transport operations. It is essential to reconcile the separate development of both and to ensure their separate economic survival by minimising conflict and optimising their distinctive roles;
- the regulations of procedures and frequency of movement for General Aviation aircraft operating between adjoining states;
- the practicability and methods of achieving greater commonality of aircraft types and development of approved regional organizations for aircraft, engines and accessories overhaul;
- the development an application of common standards of airworthiness in certification, maintenance and servicing of aircraft together with development of standards for licensed maintenance personnel;
- the inclusion of General Aviation services in individual State planning as part of the National Transport Development;
- the practicability of development of aerial work activities in such fields as environmental survey, agricultural spraying, pest control, and top dressing;
- the practicability of establishing an aerial medical coverage which would be a great benefit to the communities of their States.

Status — Terms of reference have been prepared.

Action — Financing is being sought.

1.0.6 UPDATING OF THE 1974/75 CIVIL AVIATION MANPOWER AND TRAINING REQUIREMENTS SURVEY

Estimated Costs:
USD 0.225 million (1984 prices)

Financing:
Requested: USD 0.225 million
Foreign currency part: 100%
Executing Agency:
Southern Africa Transport and Communications Commission
Start:
1985

Duration:
9 months

Scope — Updating of the various manpower and training studies which have been carried out under ICAO/UNDP programmes

Contents — A "Civil Aviation Manpower and Training Requirements Survey, Africa" was carried out in 1974/75 under UNDP/ICAO Project RAF/73/006.

The objectives of the survey, as established by ICAO, were:

- Long range objectives: to meet the manning and training requirements in various fields of civil aviation;
- Immediate objectives:
  1. to determine the immediate manning and training needs of each country and establish programmes to meet these needs;
  2. to establish an integrated training programme covering all countries;
  3. to determine the number of additional training places which would be required yearly in each field of specialization and develop a programme of action for the provision of these places.

The recommendations of this survey were accepted at a Plenary Session of the African Civil Aviation Commission in August 1975 but the recommended programme was never implemented.

Due to the rapid development within the civil aviation sector, there is now an urgent need for updating with regard to the SADCC States with the following objectives:

1. to make a survey and analysis of the existing staff establishments of the civil aviation authorities and national airlines;
2. to consider, in the light of the expected civil aviation activity, the adequacy of these staff establishments to meet the long range and immediate objectives as laid down in the original 1974/75 survey;
3. to prepare a Training Programme geared to filling the establishments necessary to meet both the long range and immediate objectives for all categories of staff.

Status — Terms of Reference have been prepared.

Action — Financing is being sought.

August1984

4.0.7 UPDATING THE AERONAUTICAL INFORMATION SERVICES

Estimated Costs:
USD 0.2 million (1984 prices)

Financing:
Requested: USD 0.2 million

Foreign currency part: 100%

Executing Agency:
Southern Africa Transport and Communications Commission

Start:
1985

Duration:
12 months

Scope: To review the Aeronautical Information Services (AIP's) of each SADCC State and explore the possibilities of co-operation in this field.

Contents: AIP's are charts providing the pilots with all the details necessary for safe performance of a flight such as information about airways, compulsory reporting points, control zones, navigational aids, flight levels, aerodromes etc. The design, drafting and amendment of this aeronautical information required is a very specialized task performed by experienced and well trained staff. Extensive investments are needed in equipment for production of AIP's and also a well organized administration for collection of data and network for distribution.

It is mandatory for each ICAO contracting State to provide an aeronautical information service.

The aim is, through a review of the Aeronautical Information Publications of each of the SADCC States, to assess:

- compliance with, or differences to, ICAO Annex 15"International Standards and Recommended Practices related to Aeronautical Information Services",
- general conformity to the guidance material in ICAO documents and manuals,
- production, amendment and distribution staff, organization and procedures for issuance of AIP material,
- determine methods and routines with particular reference to areas in which commonality of presentation and joint production would be advantageous.

Status: Terms of reference have been prepared and Sweden has been approached for financing.

August 1984

4.0.8 UPDATING OF 1980 YEAR'S ICAO STUDY OF AERONAUTICAL TELECOMMUNICATIONS

Estimated Costs:
USD 60 000

Financing:
Secured : USD 60.000
Foreign currency part: 100%

Executing Agency:
Southern Africa Transport and Communications Commission

Start:
September 1983

Duration:
4 months

Scope — To assess the need for additional aeronautical telecommunications equipment or new equipment to replace the existing old and inadequate equipment with the objective to present to donor agencies what funds will be needed and motivations for funding.

Contents — Aeronautical telecommunications are critical to the safety and efficiency, particularly as the skies become more crowded every passing year. The pilot of an aeroplane should know at all times where he is, what other air craft are in his vicinity, what weather is like ahead and what conditions are at the airport of destination. These data can only be provided by Flight Information Centres along the route. Such centres not only communicate from the ground to the aeroplane to provide vital information, but they also talk to each other and thereby alert the next centre en route that the control of the aircraft is about to pass to that centre.

Communications systems like these require extensive equipment as well as personnel trained to operate and maintain it.

A study was made by ICAO in 1980 with proposals and cost estimates for improvements. The situation revealed by the study was a massive inadequacy in the telecommunications network required.

At the first meeting of Directors of Civil Aviation and airline executives in Maputo in July 1982 the necessity of developing adequate and reliable civil aviation telecommunications within the SADCC States was considered a priority item. As the data on which the ICAO document was based were collected some years ago, the lack of current information was pointed out. Since the task of providing and maintaining telecommunications facilities for air traffic services by states individually has proved to be a heavy burden, a co-operative and joint approach was recommended and a course of action to evaluate the project scope, followed by a funding strategy, was suggested.

Even representatives from ICAO have expressed great concern over the present serious situation.

Status — The study has been initiated by ICAO. Draft Final Report has been prepared.

4.3.1 NEW AIRPORT AT MASERU

Estmated Costs:

USD 42,0 million (current prices)

Financing:
Secured : USD 27 million
Requested: USD 15 million
Foreign currency part: 75%

Executing Agency:
Ministry of Transport and Communication

Start:
March 1983

Duration:
3 years

Scope — Construction of a new airport about 15 km south of Maseru, the capital of Lesotho.

Contents — The existing 1 300 m runway at Maseru can only accept aircraft up to HS 748/F-27 size and the airport cannot be upgraded for safe operations with larger aircraft. The Government has decided to build a new airport some 15 km south of Maseru and adjacent to the main road to Mohale's Hoek.

Based on the results of a feasibility study carried out by Consultants in 1974, the project includes:

- construction of a 3 200 m runway with taxiway and apron capable to accepting the Boeing 727 and with possible future extensions to 4 200 m.
- terminal buildings, including control tower, administrative block fire and rescue services, etc;
- navigational aids and communications;
- airportlighting, met. equipment, power supply, vehicles etc. ;

The new airport will make possible the expansions of direct services to other countries in the region with jet aircraft, thus reducing the country's dependence on South Africa for external transport.

Consultants were engaged in Febuary 1981 to undertake detailed design work and the supervision of construction. Previous traffic forecasts have also been up-dated and it is now expected that with increased capacity and more regular and reliable services, the number of passengers at Maseru will increase from 40 000 in 1980 to about 115 000 in 1990.

The project was earlier estimated to cost about 60 million US dollars at 1979 prices, but the current review of design criteria and postponement of minor parts of the project have resulted in savings sufficient to offset subsequent price rises.

Status — Work commenced in March 1983. The target date for completion of the new airport will be mid-1985.

Approximately 27 million US dollars have been committed to the project by OPEC, EEC, ADB, Saudi Arabia, Kuwait, Abu Dhabi, BADEA (supervision and redesign) and Finland (airport lighting).

Action — Additional financing for the project is being sought by the Government. Committed Government contribution so far USD 4.2 million.

4.3.2 ACQUISITION OF NEW AIRCRAFT FOR LESOTHO AIRWAYS

Estimated Costs:
USD 7.0 million (1984 prices)

Financing:
Secured : 0
Requested: USD 7.0 million
Foreing Currency Part: 100%

Executing Agency:
Ministry of Transport and Communications, Lesotho

Start:
1985

Scope: Acquisition of a new aircraft for expansion of regional route net.

Contents: The government of Lesotho is confronted with an urgent need to strengthen the regional air links with other SADCC States, primarily to Mozambique and Swaziland with connections to other countries. In order to achieve this a new aircraft suitable for service over short/medium sectors and multi-stop routes is required.

Desirable size would be a capacity of 30 - 35 passengers. Ideal would be a new twin-engine turbo-prop aircraft with pressurized cabin, highly fuel-efficient to ensure low-cost economy, with good field performance and efficient in operations at high altitude and in hot climates. Low maintenance costs are also essential.

Status: Project description has been prepared.

Action: Sweden has been approached for financing.

August 1984

4.5.1 REHABILITATION OF AIRPORT LIGHTS, MOZAMBIQUE

Estimated Costs:
USD 5 million (current prices)

Financing:
Secured: USD 5 million
Foreign currency part: 95%

Executing Agency:
Aeroportos de Moçambique, E.E.

Start:
1981

Duration:
3 years

Scope — To rehabilitate the airport lighting system at the two main airports in Mozambique, i.e. Maputo and Beira

Contents — The main airports of Mozambique at Maputo and Beira are both used for international as well as domestic traffic. The lead-in and runway lighting systems, including power supply, are generally in a less satisfactory condition. The reliability of an airport lighting system is of vital importance for punctual and safe operations not only during darkness but also in fog and other adverse weather conditions.

The project, therefore, includes procurement and installation of new lighting equipment at Maputo and Beira and rehabilitation of the stand-by power units. This will bring the systems into full operation, which together with the upgrading of the en-route and terminal areas instrument navigation systems proposed in Project No. 4.5.2 will secure safe operating conditions.

Status — The project is being implemented. Financed by Denmark and Sweden.

August 1984

4.5.2 NAVIGATION, APPROACH AND LANDING AIDS, MOZAMBIQUE

Estimated Costs:
USD 3.5 million (current prices)

Financing:
Secured : USD 3.5 million
Foreign currency part: 100%

Executing Agency:
Aeroportos de Moçambique, E.E.

Start:
1981

Duration:
4 years

Scope — To replace the instrument landing systems (ILS) at the two main airports and to upgrade the navigation aids at airports and en-route.

Contents — The instrument landing systems (ILS) at Maputo and Beira international airports are more than 10 years old and difficult to maintain. A replacement is therefore urgently needed to ensure internationally accepted safety standards.

A rehabilitation and upgrading of navigation aids for en-route and terminal areas is also needed. The aim is to enable navigation along the main routes and terminal areas based on VHF Omni - Directional Radio beacons (VOR), and where needed in combination with the use of Distance Measuring Equipment(DME).

The project includes purchase and installation of:

2 ILS at Maputo and Beira
1 VOR (doppler) at Beira
1 VOR at Lichinga
1 DME at Lichinga

This project will bring the navigation and landing aids for the routes and airports most frequently used on international and domestic flights to an internationally required standard and will, together with the improvement of airport lighting (Project No. 4.5.1) contribute considerably to regularity and safety in air transports.

Status — The project is being implemented, financed by France.

4.6.1 DEVELOPMENT OF MATSAPHA AIRPORT

Estimated Costs:
USD 33.5 million (1984 prices)
USD 38.0 million (current prices)

Financing:
Secured : USD 26.8 million
Requested: USD 11.2 million

Executing Agency:
Ministry of Works, Power and Communications, Swaziland

Start:
1981 (design), 1982 (construction)

Duration:
2 ½ years (Phase 1)

Scope — Improvement and upgrading of the existing airport at Matsapa.

Contents — The aim of this project is to upgrade Matsapa Airport to enable handling of medium range aircraft (e.g. B-737) with full payload. Use of B-373 a/c with full belly compartment capacity for cargo and with out time restrictions at th airport will improve Royal Swazi Air's operating result.

The forecast for 1990 is 145 000 passengers in 2000 scheduled operations while non-scheduled movements are expected to grow from 7 500 in 1978 to 24 000 in 1990, and freight and mail to expand from 200 to 800 tonnes.

Timing and duration of the elements in the project are as follows:

- Maintenance building	completed	
- operations building, control tower and remote transmitter station	1984 - 85	18 months
- fire & rescue vehicles building	1984 - 85	1 year
- navigation aids, communications and landing equipment	1984 - 85	2 years
- extensions to existing terminal building	1984	1 year
- new terminal building (for peak hour traffic of 300 passengers)	1986 - 89	3 years
- cargo building	1986 - 88	2 years

Status — The construction of a new runway, 2 600 m long and 45 m wide, taxiway and apron and installation of airfield lighting at an estimated cost of USD 23 million has been completed with local funds in May 1984.

The control tower, operations building and remote transmitter station, a training component and a small telecommunications component at a cost of USD 2.0 million are financed by EEC. A loan from France of FF 20 million for financing of navigation aids, communications and landing equipment, as well as training and technical assistance, was agreed upon in April 1984.

Action — Financing for new terminal building, freight terminal and fire and rescue vehicles is being sought.

4.8.1 STUDY ON IMPROVEMENT OF LIVINGSTONE AIRPORT

Estimated Costs:

USD 0.2million (1984 prices)

Financing:
Requested: USD 0.2 million
Foreign currency part: 100%
Executing Agency:
Department of Civil Aviation

Start:
1985

Duration:
2 - 3 years

Scope — Study on improvement of Livingstone Airport.

Contents — Operations at Livingstone airport are presently restricted due to limited runway strength, especially during the wet season, with Boeing 737 being limited to one flight per week under special dispensations. The project aims at upgrading the existing airport, including a runway reinforcement to permit regular operations with the Boeing 737 (LCN 45). This development enables increase of both regional air services and tourism in Zambia.

The project consists of:

- strengthening of the runway - estimated cost USD 5.0 million (1983)
- construction of new control building and re-alignement of certain roads - estimated cost USD 4.0 million (1983)
- rescue/fire building - estimated cost USD 0.3 million (1983)
- security fencing - estimated cost USD 0.7 million (1983)

In future also improvement of navigation facilities will be needed.

Status — A feasibility study is needed and terms of reference for such a study have been prepared.

Action — Funds for a feasibility study are being sought.

August 1984

4.8.2 STUDY ON IMPROVEMENT OF NDOLA AIRPORT

Estimated Costs:

USD 0.3 million (1984 prices)

Financing:
Requested: USD 0.3 million
Foreign currency part: 100%
Executing Agency:
Department of Civil Aviation

Start:
1985

Duration:
2 - 3 years

Scope — Study on improvement of Ndola Airport

Contents — Ndola is the second busiest airport in Zambia, handling 103,000 passengers and nearly 632 tonnes of freight and mail in 1982. It is the base for domestic services to the Northern Province and handles cargo flights to/from Europe and the Middle East.

The existing terminal building is old and inadequate in size and urgently needs to be replaced by a new terminal.

A recent re-appraisal of the earlier proposed design for the building has been prepared and the costs are estimated to be USD 10.0 million (1983). Should the Government policy be changed towards establishing Ndola airport as a regular international airport, extensions of the runway in the order of 40 per cent of the present length will be required. Additional airfield lighting in conjunction with the extensions as well as new taxi-ways will also be needed. Estimated costs for this work are USD 6.0 million (1983).

Further improvement of navigation equipment and also design and construction of a new cargo terminal will be needed at a later stage.

Status — A feasibility study is needed and terms of reference have been prepared.

Action — Funds for a feasibility study are being sought.

August 1984

4.8.3 STUDY ON IMPROVEMENT OF SOUTHDOWNS AIRPORT (KITWE)

Estimated Costs:

USD 0.2 million(1984 prices)

Financing:
Requested: USD 0.2 million
Foreign currency part: 100%
Executing Agency:
Department of Civil Aviation

Start:
1985

Duration:
2 - 3 years

Scope: Study on improvement of Southdowns Airport.

Contents: Southdowns (Kitwe) centrally located in the copperbelt, is a rural airport served by Zambian domestic routes. In 1982 44.500 passengers were handled. The objective of the project is to improve and upgrade the airport so as to permit operations by medium range jet aircraft such as the Boeing 737, rather than the smaller turboprop HS 748's which are used at present. Existing runway requires a total re-surfacing to bring it to an acceptable standard for at least B-737.

Apart from rehabilitation of the runway essentially everything is lacking. Construction of new taxiways and re-location and enlargement of parking apron have to be made. Installation of airfield lighting to admit after dark operations is needed. Provisions of both passenger terminal and air traffic control tower buildings have to be made together with other infrastructure such as car-parking areas and re-alignment of access road etc. (In this context, the implication of development of both Ndola and Southdowns Airports, only 65 km apart, will need to be considered carefully). A feasibility study is now needed.

Status: Terms of reference have been prepared.

Action: Funds for a feasibility study is now being sought.

August 1984

4.8.4 STUDY ON NEW HANGAR AT LUSAKA INTERNATIONAL AIRPORT

Estimated Costs:
USD 0.3 million (1984 prices)
USD 0.3 million (current prices)

Financing:
Requested: USD 0.3 million
Foreign currency part: 100%

Executing Agency:
Zambia Airways Corporation

Start:
1985

Duration:
3 years

Scope — Construction of a new hangar and workshop facilities including engine overhaul complex to service the existing fleet as well as the wide bodied aircraft which Zambia Airways intends to purchase in the future as part of its modernization and development programme.

Contents — The aim of the project is construction of a new hangar at Lusaka Airport which has the capacity to perform maintenance and overhaul of the present fleet and future widebody aircraft.

This will entail the building of:

- a widebody hangar and workshop
- a power plant over-haul building and offices
- a standards room
- a component overhaul facility

The present hangar is of a size that only minor maintenance checks can be carried out. Therefore the project is considered essential for the further planned development of the facilities in Lusaka as there has been a steady progress towards complete self-reliance in this field.

Construction costs are preliminary estimated to US dollars 17.5 million.

Status — A feasibility study is needed and terms of reference have been prepared.

Action — Funds for a feasibility study are being sought. ADB has been approached.

August 1984

4.8.5 EXTENSION OF ZAMBIA AIR SERVICES TRAINING INSTITUTE (ZASTI)

Estimated Costs:
USD 1.6 million

Financing:
Requested: 1.6 million
Foreign currency part: 90%

Executing Agency:
Department of Technical Education and Vocational Training, Lusaka, Zambia

Start:
1985

Duration:
1 year

Scope: Extension of the ZASTI-institute to enable an increased intake of students from all SADCC Member States.

Contents: In order to increase the intake of students at the institute, additional equipment, enlarged accomodation and student facilities are needed.

The additional equipment consists mainly of two single engine and one twin engine aircraft, various engineering workshop equipment, fire service, telecommunications and avionics equipment.

An increase of the student and office accomodations and improvements of the existing dining and kitchen facilities will also be needed.

It is expected that the additional running costs caused by the increased intake of students will be covered by student fees.

Status: The project was presented to donors in November 1981 at the SADCC Conference in Blantyre. It has not yet been possible to finance the project.

The Regional Training Council (RTC) of SADCC, Mbabane, has proposed that a mission be fielded to appraise and, if necessary, to update the original project document in the light of the current situation at ZASTI and of the latest information concerning the Region's air services training needs.

Action: Field mission and updated project description to be prepared in collaboration with RTC, Zambia and SATCC.

September 1984

4.9.2 STUDY ON NEW HARARE AIRPORT TERMINAL

Estimated Costs:
USD 0.5 million (1984 prices)

Financing:
Requested: USD 0.5 million
Foreign currency part: 100%

Executing Agency:
Ministry of Transport, Zimbabwe

Start: 1984

Duration: 12 months

Scope — New airport terminal, access road systems, taxiways and aprons.

Contents — The need to construct a new airport terminal building and for rehabilitation of the present facilities is becoming more and more urgent as in the long run the present facilities will be saturated and inadequate. Implementation costs are according to a pre-feasibility study estimated to US dollars 100 million.

Status — Terms of Reference for a feasibility study on rehabilitation of the present facilities and on future development of the airport have been approved by the Government. A number of countries have indicated an interest in financing the study, and it is anticipated that these countries will indicate their support during the tender period.

Action — Prequalification information has been invited from consultants. Financing of a feasibility study is being sought.

August 1984

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5.0.1 AFRICAN DOMESTIC SATELLITE SYSTEM

Estimated Costs:
USD 1.0 million (1984 prices)
USD 1.0 million (current prices)

Financing:
Requested: USD 1.0 million
Foreign currency part: 100%

Executing Agency:
Southern Africa Transport and Communications Commission

Start:
1984/85

Duration:
1 year

Scope Study of high quality telecommunications services to isolated rural communities in African countries.

Comments Some SADCC countries namely Botswana, Angola and Mozambique have expressed interest in establishment of dedicated satellite systems mainly aiming at national rural applications. Within the framework of the African Domestic Satellite project Botswana is proposing participation of SATCC in the studies at a cost of US dollars 1 million to cover suitable aspects of the wide field of required studies.

Status The Conference of African Ministers of Transport, Communication and Planning decided in Cairo march 8 to 11 1983 to integrate the ongoing studies in African Domestic Satellite Communications with the Inter-Agency Co-ordinating Committee (IACC), under the leading role of ITU (RASCOM Programme). Late 83 ITU initiated missions to establish Feasibility Phase participations at a Country level.

However, the french speaking Countries of Africa are carrying out an independent feasibility study with UAPT as a leading agency. Within a short period, practical experiments are planned in order to demonstrate the possibilities of the domestic satellite system. In this context, the Terms of Reference for Project 5.0.1 have been prepared and approved by the Co-ordinating Committee of SATCC with the aim to provide the SADCC Countries with the assistence necessary to evaluate the Programme, implement the , evaluate the interest of the tries to take part in the current experimental plans. Canada and Italy have expressed their interest .

Actions SATCC to contact financiers to get consultancy services for the study. The interested Countries should scrutinize the Terms of Reference and indicate their intention to SATCC.

August 1984

5.0.2 STUDY ON THE HARMONIZATION OF THE DEVELOPMENT OF SATELLITE COMMUNICATION

Estimated Costs:
USD 400 000 (1984 prices)
USD 400 000 (current prices)

Financing:
Requested: USD 400 000
Foreign currency part: 100%

Executing Agency:
Southern Africa Transport and Communications Commission

Start:
1984

Duration:
11 months

Scope: Study on the harmonization of the development of satellite communications in SADCC countries.

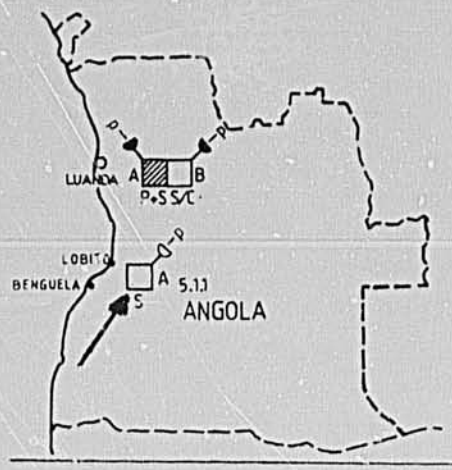
Contents: The aim of the study is to provide recommendations on the policies and measures to be applied to achive efficient utilization of satellite technology. The study is to scrutinize traffic requirements, implementation plans, interface matters, development trends within Intelsat system, effect of terrestrial network plans, effect of Rascom Programme and finally come up with proposals for practical measures to be taken to facilitate forward planning, procurement and training.

Status: The study was conceived by SATCC in the Co-ordinating Committee Meeting in Maputo in October 1982. A working paper was presented in the 3rd Co-ordinating Conference of the Southern Africa Telecommunications Administrations (SATA) in Swaziland in Febuary, 1983. Terms of Reference have been prepared based on comments from the SATA-conference. Financing has been committed and a technical proposal presented by Italy.

Action: Contract with the consultants has to be finalized and presented to the Italian Government for the approval.

August 1984

5.1.1 EARTH STATION, STANDARD A, IN THE REGION OF LOBITO/BENGUELA



Estimated Costs:
USD 12 million (1984prices)
USD 14.3 million (current prices)

Financing:

Requested: USD 14.3million
Foreign currency part: 80%

Executing Agency:
Ministry of Transport and Communications

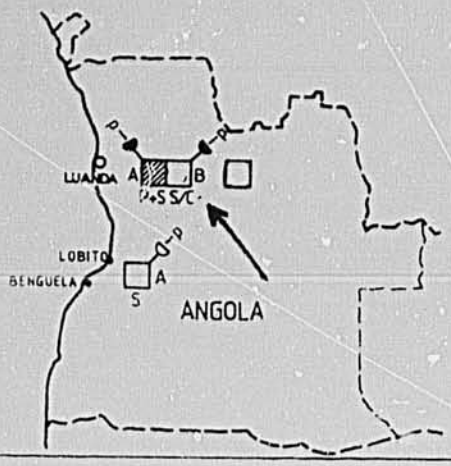
Start:
1985

Duration:
3 years

Scope	Provision of a standard A Satellite Earth Station.
Contents	The project will provide a second outlet for international and interterritorial traffic which is presently routed over the existing earth station gateway, possibly located in Lobito/Benguela area , and working over Indian Ocean satellite connected via terrestrial microwave links to the international telephone and telex switching centres in Luanda. The new station will have a capacity to handle at least 50% of the total traffic.
Status	The new station is in preliminary planning stage and no final decision on the basic configuration has been made so far. No funds have been allocated as yet.
Action	Decision on the basic concept will be needed be, e the project may proceed to the feasibility study phase. At the same time the implications of PANAFTEL microwave programme might be considered. Funds for the feasibility study are being sought.

August 1984

5.1.2 EXPANSION OF THE INTERNATIONAL TELECOMMUNICATION SERVICES OF ANGOLA



Estimated Costs:
USD 38.0 million (1984 prices)
USD 38.0 million (current prices)

Financing:
Secured : USD 38.0 million
Foreign currency part; 86%

Executing Agency:
Ministry of Transport and Communications
Angola

Start:
1983

Duration:
3 years

Scope: Expansion of the capacity of the international telecommunication system.

Contents: Provision of

- equipment for the existing standard B antenna, extensions to the Standard A earth station at Cacuaco.
- new telex exchange
- extensions for the ITSC
- no-break power supply

The project is to include also installation and civil works.

Status: The project will be financed by ADB for the foreign currency part and Angola for the local costs. The project is in tendering phase: the supplier of the telephone and telegraph equipment has been chosen and the projects for power plant and civil works are being evaluated.

Action: Awarding and execution of the contract.

August 1984

5.2.2 INTERNATIONAL TELEPHONE SWITCHING CENTRE, GABORONE

Estimated Costs:
USD 4.6 million (1984 prices)
USD 5.1 million (current prices)

Financing:
Secured : USD 5.1 million
Foreign currency part : 80%

Executing Agency:
Botswana Telecommunications Corporation

Start:
1984

Duration:
RFS mid-86

Scope — Provision of an international telephone switching centre at Gaborone, Botswana.

Contents — The project comprises provision of a digital stored programme controlled ITSC initially equipped for interfacing with national transit exchanges at Gaborone and Francistown and with a design date in 1990.

The system shall be capable of considerable expansion to meet requirements at least up to the year 2000.

A modern operator call handling system is also required either separately or integrated with the one to be provided for the national switching system.

The project must be scheduled so as to match the commissioning of the new national system.

Status — The project is included in the Main Development Plan for Botswana which is now under implementation financed by ADB, Norway, Sweden and local funds. Contracts have been signed with the supplies and the implementation scedule forecast RFS mid-86.

Action — Execution of the project.

August 1984

5.5.1 NATIONAL/REGIONAL SATELLITE COMMUNICATION SYSTEM OF MOZAMBIQUE

Estimated Costs:
USD17.8 million (1984 prices)
USD 17.8 million(current prices)

Financing:
Secured : USD 17;8million
Foreign currency part: 17;4 million

Executing Agency:
Telecommunicaçoes de Moçambique

Start:
1984

Duration:
RFS 1986

Scope: Provision of a domestic satellite system in Mozambique.

Contents: Supply, installation and commissioning of 3 dedicated type earth stations in MAPUTO, BEIRA and NAMPULA to establish circuits between these locations. Space segment capacity of initially 9 MHZ will be leased from INTELSAT and later in 1986 another 9 MHZ band, all on a pre-emptible basis.

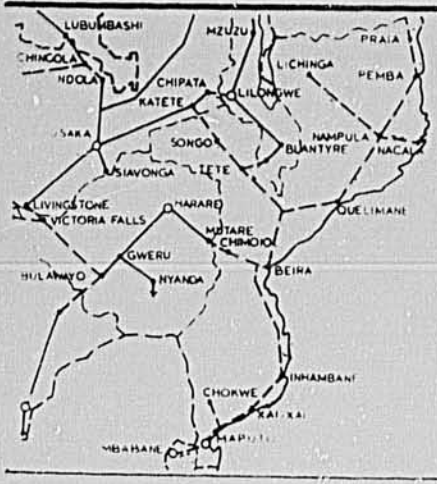
Direct circuit from Beira and Nacala to Zimbabwe and Malawi will be hardpatched via the existing Maputo standard A earth station which will be expanded with new FDM carriers and SCPC equipment.

Status: Tenders have been evaluated and contract awarded. Financing is secured for the whole project from France (13.2 million), Kuwait (4.3 million), local funds (0.4 million).

Action: Execution of the project.

August 1984

5.5.3 NATIONAL TELECOMMUNICATION DEVELOPMENT PROJECT WITH CONNECTIONS TO NEIGHBOURING COUNTRIES



Estimated Costs:
USD 130 million (1984 prices) regional part
USD 152 million (current prices) regional part

Financing:
Secured: USD 32 million, regional part
Foreign currency part: 90%

Executing Agency:
Telecommunicalçoes de Moçambique

Start:
1984

Duration:
10 years

Scope — Expansion of the telecommunication system up to 1994.

Contents — The regional part of the programme consists of:

Phase I — Microwave backbone systems Maputo/Xai-Xai/Chokwe, Beira/Chimoio, Nampula/Nacala.

International switching centre of Maputo and Beira.

Switching systems in Maputo, Beira, Nampula, Nacala, Chimoio with buildings and junctions.

As a separate project, a new telex exchange at Beira will be implemented so as to match the commissioning of the 1st phase of the present Telecommunication Development Project.

Phase II and III (87-94) — The remaining part of the microwave backbone network, i.e. Xai-Xai/Massinga, Beira/Caia/Tete, Caia/Quelimane, Tete/Ulongwe, and the international extension Tete/Blantyre, Chimoio/Mutare, Tete/Kafue, Nampula/Mtwara.

Some parts of the project requiring close co-ordination with other countries have been presented as sub-projects 1 to 7.

The project also contains a sizeable national part.

Status — Phase I is in the evaluation phase.

Efforts to arrange financing for the national and regional parts of the project have produced agreements with Italy (USD 50 million loan/grant), ADB (USD 26 million loan), BADEA (USD 10 million loan). In addition SIDA has committed to finance the international switching center in Maputo for an amount of about USD 2.2 million, and Italy to finance supervisory consulting services for about USD 5 million. The regional part of Phase I will cost about USD 32 million and the financing is secured as listed above.

Action — Allocation of sub-projects to all involved financiers is expected by october 1984.

5.5.3(1) SUB-PROJECT TO 5.5.3 INTERNATIONAL TRANSIT SWITCHING CENTRE (ITSC) IN BEIRA

Estimated Costs:
USD 3.2 million (1984 prices)
USD 3.7 million (current prices)

Financing:
Secured as for project 5.5.3, phase I.

Executing Agency:
Telecomunicações de Moçambique

Start:
1984

Duration:
3 years

Scope To provide international subscriber dialling facilities to neighbouring countries and beyond from Beira area.

Contents The project comprises implementation of an international transit switching centre (ITSC) in Beira with initial capacity of 1000 telephone channels on a minimum of 20 routes, transit routing and charging facilities employing digital techniques. The new exchange will provide subscriber trunk dialling and ISD to Zimbabwe and Malawi.

The ITSC is related to the implementation of the radio links from Beira towards Mutare and Blantyre and of the earth station (project 5.5.1).

Status The ITSC is included in the first phase of project 5.5.3 for which the evaluation of tenders is in progress. Financing is secured as per phase I.

Action Awarding of the contract to the chosen supplier.

August 1984

5.5.3(2) NEW TELEX EXCHANGE IN BEIRA

Estimated Costs:
USD 2.35 million (1984 prices)
USD 2.5 million (current prices)

Financing:
Requested: USD 2.5 million
Foreign currency part: 90%

Executing Agency:
Telecomunicações de Moçambique

Start:
1984

Duration:
3 years

Scope: Provision of a new digital telex exchange in Beira to replace the existing inadequate unit.

Contents: The existing automatic telex exchange in Beira was installed in 1972 with a maximum capacity of 200 subscribers which is expected to be exhausted during 1983. Since the earlier plan to continue up to 1987 with re-used equipment from Maputo turned impossible, the provision of the new exchange has become an urgent requirement.

The new unit has been designed to have a capacity of 760 subscribers with full facilities for international traffic.

Status: Discussions with the Federal Republic of Germany are in progress on financing. The project is to be implemented so as to match the commissioning of the National Telecommunication Development Project, Phase I.

Action: Financing to be secured.

August 1984

5.5.3(3) MICROWAVE LINK TETE - BLANTYRE

Estimated Costs:
USD 7 million (1984 prices)
USD 8 million (current prices)

Financing:
Requested : 8 million
Foreign currency part : 90%

Executing Agency:
Telecomunicacoes de Mozambique

Start:
1987

Duration:
2 years

Scope — Provision of a microwave radio system between Tete and Blantyre.

Contents — The project calls for a provision of a 960 channel microwave link Blantyre - Tete, comprising 4 hops, interconnecting the existing microwave system of Malawi with the future national network of Mozambique. This link is a part of the PANAFTEL network capable of satisfying the long-term requirements between Malawi and Mozambique, providing also alternative routes to Tanzania and Zambia and once the Mozambique backbone system is established, interconnection of the Swaziland microwave system with the PANAFTEL network as well as an alternative route from Malawi to Zimbabwe.

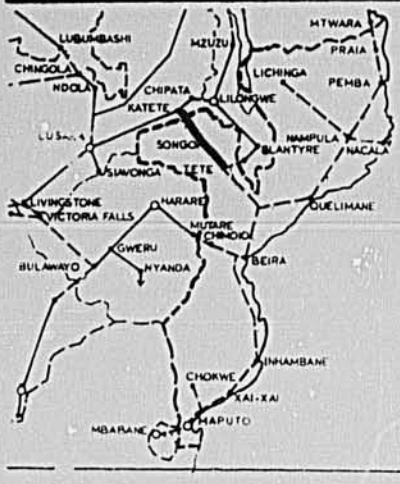
The Administrations of Mozambique, Malawi and Zimbanwe have agreed to study the extension of this link to Zimbabwe from Tete. This will involve the implementation of about 5 additional hops from Tete to Harare.

Status — The link is included in phase II of Project 5.5.3 and no funds have been committed as yet. Norway is financing the survey and feasibility study.

Action — Route survey for the optional route to be carried out and decision to be taken. Financing to be secured.

August 1984

5.5.3(4) MICROWAVE LINK TETE - KATETE



Estimated Costs:
USD 8 million (1984 prices)
USD 11 million (current prices)

Financing:
Requested: 11 million
Foreign currency part 90%

Executing Agency:
Telecomunicações de Moçambique

Start:
1987

Duration:
3 years for each section

Scope — Provision of a microwave radio relay system between Tete, Mozambique, and Katete, Zambia.

Contents — The link will be made up of two sections:

- Tete-Songo consisting of 4 hops;
- Songo-Katete, not yet surveyed, consisting of 6 to 7 hops.

The link is a part of the terrestrial PANAFTEL network which will provide an interconnection of the Zambian and Mozambican networks opening up a transit route from Swaziland and possibly Tanzania.

Status — The link is included in phase II of 5.5.3. No funds have been committed as yet.

Action — Financing to be secured. Implementation schedule for the crossborder section is to be agreed between Zambia and Mozambique.

August 1984

5.5.3(5) MICROWAVE LINK BEIRA - MUTARE

Estimated Costs:
USD 3.1 million (1984 prices)
USD 3.4 million (current prices)

Financing:
Secured as for project 5.5.3 for the section Beira-Chimoio.

Executing Agency:
Telecomunicações de Moçambique

Start:
1984

Duration:
3 years

Scope — Provision of a microwave radio relay system between Beira and Mutare.

Contents — The project consists of a 960 channel microwave link with 6 hops, linking Beira and Chimoio, with a cross-border section to Zimbabwe (Mutare).

The link is included in the PANAFTEL network and is of vital importance to the Beira Port Transport System. It will carry the traffic from/to Mozambique and Zimbabwe, providing also optional transit connections from Zimbabwe to Malawi, Tanzania and Swaziland.

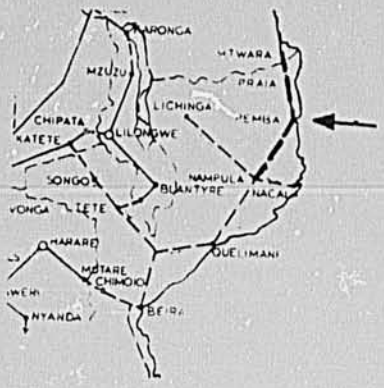
Status — The section Beira-Chimoio is included in phase I which is under evaluation. Financing for this section is secured. The crossborder hop will be implemented in connection with phase II.

A provisional UHF radio link will be installed between M. Xiluvo-Chimoio-Mutare allowing the establishment of a maximum of 120 channels from Mozambique (Beira) and Zimbabwe by the end of 1984.

Action — Awarding of the contract for the section Beira-Chimoio. Installation of the provisional link M. Xiluvo-Mutare. Funds for the crossborder section to be secured.

August 1984

5.5.3(6) MICROWAVE LINK KAMPULA - MTWARA



Estimated Costs:
USD 13 million (1984 prices)
USD 18 million (current prices)

Financing:
Requested: 18 million
Foreign currency part : 80%

Executing Agency:
Telecomunicacoes de Mocambique

Start:
1987

Duration:
5 years

Provision of a microwave radio relay system between Nampula, Mozambique and Mtwara, Tanzania.

The project comprises the installation of a microwave system Nampula - Pemba - Mocimboa da Praia - Mtwara planned to serve as a northern leg of the national backbone network and later as PANAFTEL link between Tanzania and Mozambique. The project will be implemented during phases II and III of Project No. 5.5.3.

Project definition has been finalized as per project 5.5.3 for the Mozambican side. A pre-investment survey for the cross-border link has been carried out by ITU.

Specifications for the entire route will be needed as well as finance. The time schedule should be checked with Tanzania.

5.5.3 (7) INTERNATIONAL TRANSIT SWITCHING CENTRE (ITSC) IN MAPUTO

Estimated Costs:
USD 2.2 million (1984 prices)
USD 2.2 million (current prices)

Financing:
Secured as for project 5.5.3, phase 1.

Executing Agency:
Telecomunicações de Moçambique

Start:
1984

Duration:
2 years

Scope	To provide international subscriber dialling facilities to neighbouring countries and beyond from Mozambique.
Contents	Implementation of an international transit switching centre (ITSC) in Maputo with initial capacity of 1000 telephone channels, provided with transit routing and charging facilities employing digital techniques. The ITSC is related to the implementation of the satellite communication system (Project 5.5.1). It will provide ISD on the international routes having sufficient number of circuits.
Status	The sub-project is included in the first phase of 5.5.3 which is under evaluation. SIDA is being approached to finance this sub-project.
Action	Awarding of the contract.

August 1984

5.6.2 COMBINED NATIONAL AND INTERNATIONAL TELEPHONE SWITCHING CENTRE (GATEWAY EXCHANGE) AT NTONDOZI

Estimated Costs:
USD 4.3 million (1984 prices)
USD 4.7 million (current prices)

Financing:
Secured : USD 4.7 million
Foreign currency part: 90%

Executing Agency:
Department of Posts and Telecommunications, Swaziland

Start:
1984

Duration:
2 years

Scope Provision of a national/international telephone switching centre at NTONDOZI, Swaziland.

Contents The project comprises the supply and installation of a 4-wire (international) transit switching centre, ITSC, initially equipped for 1000 telephone channels and capable of handling a minimum of 40 routes (initially 19 national, 6 interterritorial and 5 international). The ITSC will also include automatic billing facilities and the project is to include training, installation and commissioning.

Presently all inter-urban, interterritorial and international telephone traffic is handled by the Mbabane C400 exchange on a 2-wire basis, which cannot meet CCITT performance standards on long distances. The centralized automatic message accounting unit associated with the Mbabane C400 exchange to handle international traffic has a limited capacity and the Mbabane exchange does not offer interterritorial or international transit facilities.

This project is to be seen in connection with the earth station, Project NO. 5.6.1. The ITSC and the earth station will be located at Ntondozi the crosspoint for the 960 channel microwave system in Swaziland.

Status An initial feasibility study was carried out by an ITU traffic and tariff expert late 1980.

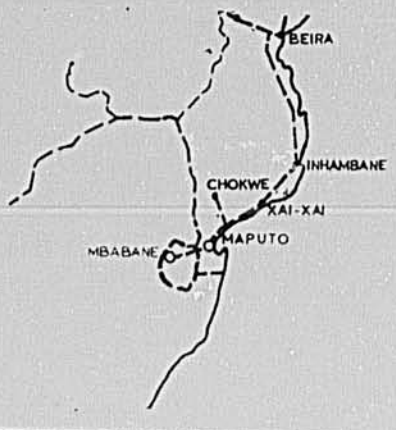
Specifications and tender documents were prepared by SIDA consultants in liaison with the Department of Posts and Telecommunications.

SATCC has requested financing from Sweden and Italy. A feasibility study report has been submitted to Italy by Swaziland. Financing agreement with Italy has been finalized.

Action Awarding of the contracts.

August 1984

5.6.3 EXPANSION OF THE NATIONAL MICROWAVE TRUNK NETWORK



Estimated Costs:
USD 4.3 million (1983 prices)
USD 4.7 million (current prices)

Financing:
Secured: USD 4.7 million
Foreign currency part: 86%

Executing Agency:
Department of Posts and Telecommunications, Swaziland

Start:
1984

Duration:
2 years

Scope — Provision of new larger capacity microwave links for the trunk network of Swaziland.

Contents — This project covers the expansion and extension of the radio trunk backbone network. The additional links to Ntondozi in part relate to the Gateway Exchange, Project 5.6.2, and the provision of Group and Channel Translator Equipment Project at Ntondozi, Project 5.6.4.

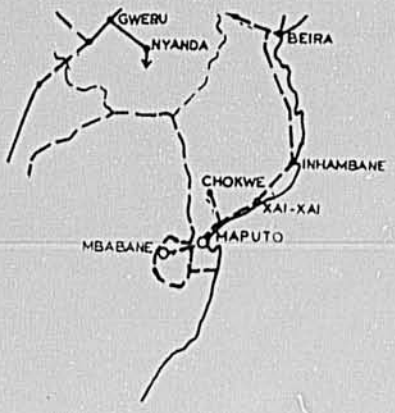
The systems considered are as follows:

- Siteki–Maphiveni: Replacement of the existing UHF with a microwave radio link to upgrade the connection;
- Ntondozi–Matsapha: Additional Supergroups;
- Ntondozi–Earth Station (for Lobamba): Additional supergroups;
- Piggs Peak–Bulembu: New microwave link;
- Ntondozi – Bhunya – Mhlambanyati: New microwave and UHF links;
- Ntondozi – Mankanyane: New UHF link;
- Ntondozi – Malkerns: New UHF link;
- Ngomini – Lavumisa – Hluti – Kubuta: New UHF links;
- Multiple access Radio Equipment;
- Telegraph Bearer Equipment;
- Rural Subscriber Carrier Systems, 10 units.

Status — Planning of the related exchange projects etc has commenced. SATCC has requested Italy to fund this project, and a financing agreement has been finalized.

Action — Awarding of the contract.

5.6.4 PROVISION OF GROUP AND CHANNEL TRANSLATING FOR 20 SUPER-GROUPS AT NTONDOZI FOR THE COMBINED NATIONAL AND INTERNATIONAL TELEPHONE SWITCHING CENTRE



Estimated Costs:
USD 1,3 million (1984 prices
USD 1.4 million (current prices)

Financing:: USD 1.4 million
Secured : USD 1.4 million
Forreign currency part: 93%

Executing Agency:
Department of Posts and Telecommunications, Swaziland

Start:
1984

Duration:
12 to 18 months

Scope: Provision of multiplexing equipment for the national/international telephone Switching centre of Swaziland.

Contents: This project is to be seen in association with Project No. 5.6.2 which covers the provision of the Cateway Exchange at Ndozi, the nodal point of the backbone microwave radio trunk network connects Mbabane with Manzini, Nhlangano, Nlatikulu, Soteki, Big Bend, Mhlume, Piggs Peak, Mozambique and South Africa.

All equipment for this network has been purchased from Telettra of Italy.

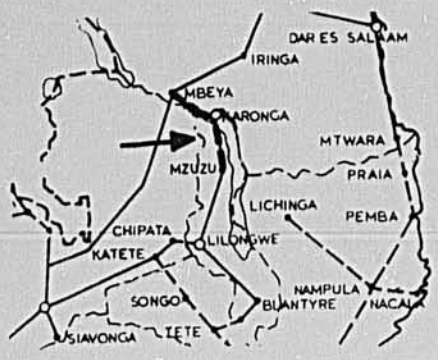
At the present all the microwave supergroups pass through Ntondozi at intermediate frequency level. With the introduction of the Gateway Exchange it will be necessary to bring down 20 supergroups to channel (audio) level so that these trunks can be switched. Total derived trunk circuits available for switching will be 1200.

Status: Planning of the additional truck bearers to link other exchanges to the Gateway Exchange at Ntondozi has been commenced. Financing agreement with Italy has been finalized.

Action: Awarding of the contracts.

Award: 1984

5.7.1 MICROWAVE LINK MBEYA TUKUYU KARONGA MZUZU



Estimated Cost:
USD 9.0 million (1984 prices)
USD 9.9 million (current prices)

Financing:
Secured USD 9.9 million
Foreign currency part: 90%

Executing Agency:
Malawi Post Office
Tanzania Post&Telecommunications Corp.

Start:
1984

Duration:
4 years

Scope: Provision of microwave radio relay system between Malawi and Tanzania

Contents: The project consists of the establishment of a high capacity microwave radio link on the route Mbeya-Tukuyu-Karonga-Mzuzu to carry the traffic between the two countries and to serve as and integral part of the terrestrial PANAFTEL network. At the outset the link will carry mainly terminating traffic to Malawi but later Mozambique would benefit from this terrestrial access to Tanzania.

Status: The route has been surveyed by ITU. Financing has been secured jointly from NORAD and SIDA with NORAD as a leading agency. A field mission from Norway has surveyed the route. A project description has been prepared by SATCC/TU. NORAD has floated tenders for the project in June 84.

Action: Agreements between the five parties are to be finalized and implementation to be started coordinated by Malawi and Norad.

August 1984

4.7.2 EXTENSION OF THE INTERNATIONAL TRANSIT SWITCHING CENTRE CAPACITY IN TANZANIA (DAR ES SALAAM, ITSC)

Estimated Costs:
USD 3.8 million (1984 prices)
USD 4.3 million (current prices)

Financing:
Requested : USD 4.3 million
Foreign currency part : 90%

Executing Agency:
Tanzania Posts and Telecommunications Corporation

Start:
1985

Duration:
4 years

Scope: Provision of an extension unit for the international telephone switching centre in Dar es Salaam.

Content: Supply and installation of a digital telephone exchange in Dar es Salaam with a capacity of 1000 trunks to augment the existing exchange capacity of 230 trunks, complete with power supply and standby battery.

Provision and installation of International Subscriber Dialling facility in the new exchange and the required ANI equipment in the existing exchange.

Equipment for CAMA and bill processing system.

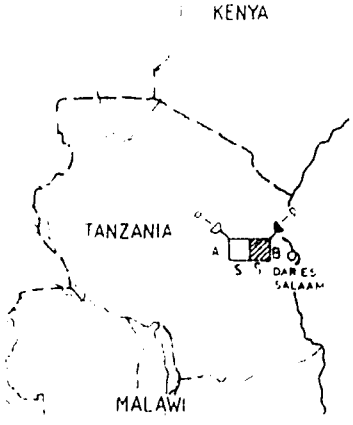
Interworking equipment for IMC and analog exchanges.

Status: Project description has been compiled by SATCC/TU and sent toADB for consideration. Supplementary information required by ADB is being compiled by PTC.

Action: Financing is being sought for the foreign currency part.

August 1984

5.7.3 STANDARD A EARTH SATILLITE STATION IN DAR ES SALAAM



Estimated Cost:
USD 10 million (1984 prices)

Financing:
Requested: USD 10 million
Foreign currency part: 100%

Executing Agency:
Tanzania Ports and Telecommunication Corporation

Start:
1985

Duration:
3 years

Scope: Provision of a Standard A Satellite Station facing the Atlantic Ocean Region.

Contents:

Tanzania has a Standard B Earth Station facing the Indian Ocean Region. This Station is inadequate to meet the international traffic because of limited capacity and because a substantial amount of traffic is with countries having antennas operating in the Atlantic Ocean Region. For this reasons the above traffic is routed via Nairobi and London.

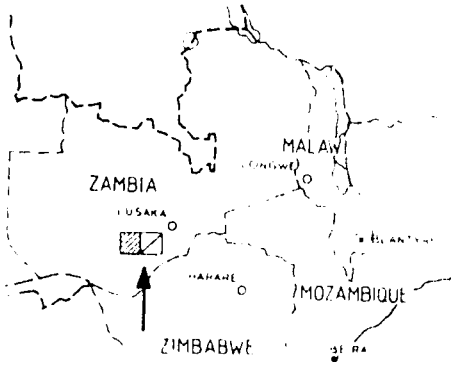
This project is strictly related to the extension of the International Transit Switching Centres (ITSC) in Dar es Salaam. Therefore the project must be scheduled so as to match the commissioning of the project.

Status: Technical Specification being drawn by INTELSAT. No funds have been allocated as yet.

Action: Technical specification to be finalized and financing to be sought.

August 1984

2.8.1 EXTENSION OF THE INTERNATIONAL TRANSIT SWITCHING CENTRE (ITSC) IN LUSAKA



Estimated Costs:
USD 2.8 million (1984 prices)
USD 2.8 million (current prices)

Financing:
Secured : USD 2.8 million
Foreign currency part: 90%

Executing Agency:
Zambia Posts and telecommunications Corporation

Start:
1981

Duration:
RFS febuary 1985

Type: Extension of the capacity of the existing international telephone switching centre in Lusaka.

Contents: The project will provide extension of the International Transit Switching Centre, ITSC, in Lusaka with increased traffic handling capacity, transit routing and charging facilities etc. making it capable of functioning as a transit switching point in SADCC area for automatic telephone traffic. To be successful in this, capacity should be provided with sufficient amount of low congestion circuit groups to other ITSC's in and outside of the area over satellite and especially over terrestial bearers.

Status: Financing has been obtained from a Swedish bank on a commercial credit basis for the foreign currency part.

The contract has been awarded in December 1981 for the supply of an AXE digital sysytem. The system will be commissioned early in 1985.

Discussions have been held, and an agreement is reached on the routing of the traffic towards the northern part of PANAFTEL, for which Lusaka will be the collection point for the Southern sub-region.

Action: Zambia would like to get commitments from the outside users of the switch to be able to avoid underutilization of her investment.

5.8.2 EXPANSION OF THE EARTH STATION AT MWEMBESHI (LUSAKA)

Estimated Costs:

USD 8.4 million (1984 prices)
USD 10.0 million (current prices)

Financing:
Requested: USD 10.0 million
Foreign currency part: 80%

Executing Agency:
Zambia Posts and Telecommunications Corporation

Start:
Phase I 1984, Phase II 1985

Durations:
Phase I: 1 year, Phase II 3 years

Scope: Expansion of the capacity at the existing satellite earth station at Mwembeshi.

Contents: Phase I: Provision of three new receiver chains, high-power amplifier and SCPC equipment for 12 channels at a total cost of USD 1.6 million.

Phase II: Provision of a new standard A earth station antennas with associated ground communication equipment, power supply, civil works, spares and training.

The first phase is closely related to Project No. 5.8.1.

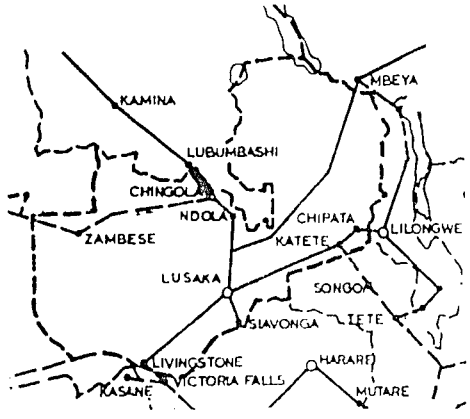
Status: The delivery of the equipment for the first phase is waiting for to be made available. For the second phase a Feasibility Study Report has been prepared by Zambia. ITU has compiled a project description.

Canada has expressed interest in financing both the I and the II phase and a feasibility study will be made by the Canadians to review their possible participation in the project.

Financing is being sought for the foreign currency part.

Report 1984

5.8.3 MICROWAVE TERMINAL AT CHINGOLA TO COMPLETE THE LINK ZAMBIA – ZAIRE



Estimated Costs:
USD 0.? million (1983 prices) Zambian Side
USD 0.? million (current prices)

Financing:
Secured : USD 0.? million
Foreign currency part: 100%

Executing Agency:
Posts and Telecommunications Corporation

Start:
1985

Duration:
One year

Scope: Provision of a microwave radio relay system between Zambia and Zaire.

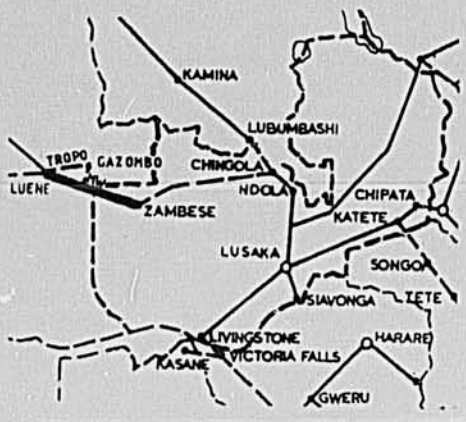
Contents: Supply, installation and commissioning of a link between Zambia on Lumumbashi in Zaire as part of the PANAFTEL network. The bulk of the work is in Zaire. The SATCC part of the project covers only the Zambian side.

Status: Technical specifications have been laid down by ITU. A bilateral project agreement has been signed early 1983 between Zambia and Zaire. AEB has earmarked funding for this project for the use of Zairean Administration, but no progress has taken place. SATCC has requested Norway to finance the project.

Action: Further progress is now mainly dependent on the developments in Zaire.

August 1984

5.8.4 MICROWAVE LINK ZAMBEZI (ZAMBIA) - LUENE (ANGOLA)



Estimated Costs:
USD 6.1 million (1984 prices)
USD 7.2 million (current prices)

Financing:
Secured : USD 0.2 million
Foreign currency part: 90%

Executing Agency:
Posts and Telecommunications Corporation Zambia

Start:
1985

Duration:
4 years

Scope — Provision of a microwave radio relay system between Zambia and Angola.

Contents — Installation of a microwave link with a capacity of 960 telephone channels from Zambezi to Luene, Angola, across the border to give Angola a direct access to the terrestrial PANAFTEL network.

Since the section east of Luene presents logistical problems, a troposcatter system will be installed between Luene and GAZOMBO as the first phase, and the new crossborder link will link up with this system at Gazombo until such time that a multi-hop microwave system can be installed all the way through.

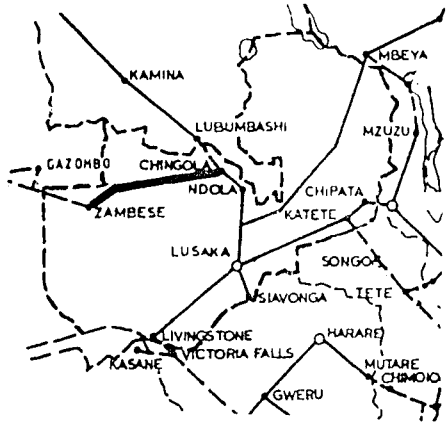
Status — Angola is in a process of expanding the national network with microwave and troposcatter radio relay systems up to Luene in the east, but the timing of works cannot be fixed with any accuracy.

On the Zambian side the network expansion programme in the north western areas will provide high capacity route by mid-1985 funded by Norad. SATCC has requested Norad to finance the project. ITU has offered to undertake a route survey and Norad has expressed interest in financing the same.

Action — A meeting with Angola and Zambia has to be convened in order to formulate a project to present to Norad.

August 1984

5.8.5 MICROWAVE LINK IN THE NORTH - WESTERN PROVINCE, ZAMBIA



Estimated Costs:
USD 14.5 million (1984 prices)
USD 14.5 million (current prices)

Financing:
Secured : USD 14.5 million
Foreign currency part: 72%

Executing Agency:
Posts and Telecommunications Corporation, Zambia

Start:
1983

Duration:

Scope: Provision of a microwave radio relay link in the North-Western Province of Zambia.

Contents: Supply, installation and commissioning of a new system between Chingola and Solwezi, Solwezi and Mwinilunga, Solwezi and Zambezi via Kabambo, spur links to Kasempa and Chizera including buildings and access roads.

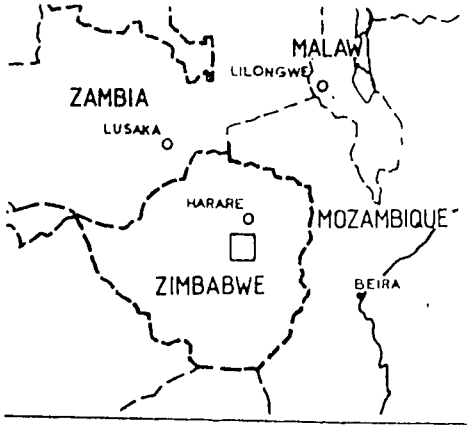
The main route will have a capacity of 960 channels and the spur to Mwinilunga 120 channels.

Status: Contract has been awarded in 1982 but was held up due to the financing problems. Later NORAD has agreed to finance the project from the bilateral funds in 1983 and regional funds in 1984 and 1985. The contract is under implementation and the works are progressing according to the schedule.

Action: Execution of the project.

August 1984

5.9.1 INTERNATIONAL TELEPHONE SWITCHING CENTRE (GATEWAY EXCHANGE) AT GWERU



Estimated Costs:
USD 4.[illegible] million (19[illegible] prices)
USD 4. million (current prices)

Financing:
Secured : USD 4.0 million
Foreign currency part: 80%

Executing Agency:
Posts and Telecommunications Corporation, Zimbabwe

Start:
1988

Duration:
[illegible] years MFS August-December 84

Scope Provision of a new telephone switching centre at Gweru, Zimbabwe.

Contents Supply of a combined international regional and national transit exchange for 3000 lines. Initially direct circuits will be established to Malawi, Zambia, Botswana, Mozambique, Kenya, RSA and seven overseas countries.

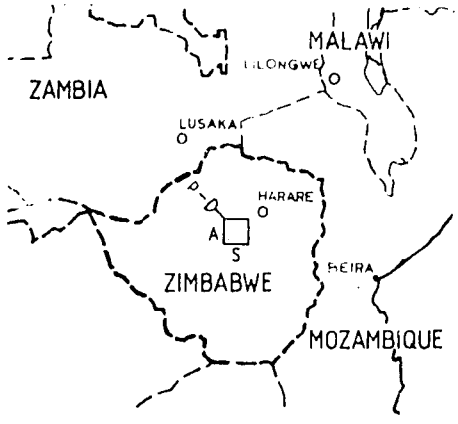
Installation, commissioning, training of local staff and initial maintenance supervision are also contained.

Status The work is underway financed by a SIDA grant.

Action Completion of project execution.

August 1984

5.5.2 EARTH STATION, STANDARD A IN MAZOWE



Estimated Costs:
USD 13.8 million (1983 prices)
USD 14.4 million (current prices)

Financing:
Secured : USD 14.4 million
Foreign currency part: 60%

Executing Agency:
Posts and Telecommunications Corporation
Zimbabwe

Start:
1981

Duration:
RFS June 1985

Scope: Provision of a satellite earth station, standard A in Mazowe, Zimbabwe.

Contents: Provision of an access link to the ITSC of Gweru.

Installation, commissioning and training of local staff.

Status: Tender awarded to Suitomo Corporation of Japan with NEC as supplier of equipment. Project financed by Japanese YEN Credit Loan

Action: Implementation of the project.

August 1984