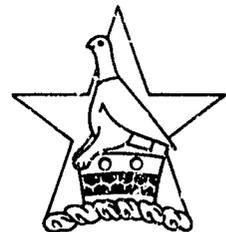


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TRANSPORT AND COMMUNICATIONS

SOUTHERN AFRICAN DEVELOPMENT COORDINATION CONFERENCE



Harare, Republic of Zimbabwe
30th — 31st January 1986

Section One:

STRATEGIES FOR THE NEXT FIVE YEARS

7)

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TRANSPORT AND COMMUNICATIONS

Chapter 1. PREAMBLE

The objectives of the Southern Africa Transport and Communications Commission (SATCC) are included in the Convention on the Establishment of the Commission of 1980. At the same time priorities concerning capital investment projects were defined.

On that basis, during the first years of SATCC activities the emphasis was on defining capital investment projects to be included in the regional programme. Most of the present capital investment projects were defined by the end of 1981.

From 1982 onwards strong efforts have been made to improve operational co-ordination. Representatives of various modes of transport and telecommunications have convened regularly to discuss various studies or background documentation aimed at improved operational co-ordination, and to make proposals for regional action in this respect.

Training is one important aspect of SATCC activities. These efforts have been co-ordinated with the Regional Training Council in Swaziland.

Recently postal services and meteorology have been added to the programme.

The number of completed capital investment projects is 17, and 24 projects are being implemented. Altogether 16 studies for capital investment projects have been completed. The number of completed general studies is 5 and ongoing studies 12.

Out of the 111 projects included in the programme, 28 are fully financed, 30 partly financed and financing of 40 projects is being discussed. For the remaining 13 financing is being sought.

The planning process being used includes project identification and analysis, identification of objectives, transport demand and traffic flows, regional plan, and strategy for development and implementation programme.

In the strategy adopted in the preparation of this five year development plan the projects are scheduled in their order of priority compared with each other and with the national development plans using the available data for background information.

In the future the following guide lines shall be followed:

- (i) Before any projects are included in the SATCC Regional Programme of Projects, approval of the relevant Government Authorities and an overall national priority ranking of such projects shall be sought;
- (ii) Consideration shall be given to project management as well as operation, maintenance and management after the completion of the project;
- (iii) Financiers shall be approached to finance feasibility and/or engineering studies only if they are prepared to participate in the financing of the implementation or in the mobilization of financing from other sources.

Operational co-ordination work by means of meetings of representatives of various modes of transport has been going on for about two years. Considerable progress towards harmonization of transport and communications activities has been achieved. Especially important in this respect have been the efforts to harmonize the provisions of the law affecting international operations.

The strategy to be applied during the coming five years in operational co-ordination aims at:

- (i) elimination of institutional obstacles to regional co-operation and includes harmonization of rules and regulations;
- (ii) promotion of bilateral and multilateral agreements for operations;
- (iii) actions related to routing of traffic to regional ports and co-operation between air lines; and
- (iv) increasing utilization of regional resources and know how.

Efforts have been made to improve the existing training facilities in Member States. The needs for regional surveys on training for all modes of transport have been identified. A Study on Port Staff Training is going on. Other regional studies are expected to be initiated in 1985.

Since the progress in training activities has been slow, it has been decided that meetings of representatives of the existing training institutes shall be organized regularly to speed up the development of training facilities and activities. A training expert is being employed in the Technical Unit of SATCC on a part time basis to assist in this development.

The above experiences and decisions have been used as guide lines for the preparation of "SATCC Strategies for the Next Five Years".

Chapter 2. SUMMARY

"SATCC Strategies for the Next Five Years" 1986-1990, will be devoted towards implementation of programmes developed during the first five year period of SATCC's existence.

2.1. Objectives and Policies

The basic objectives are listed in the Convention on the Establishment of the Southern Africa Transport and Communications Commission (SATCC) of 1980 (see chapter 3, Objectives and Policies). One of the key objectives is to reduce economic dependency, particularly, but not only, on the Republic of South Africa.

Of first priority towards that end is the rehabilitation and upgrading of the existing facilities and provision of adequate telecommunications and civil aviation services.

In addition to capital investment projects operational co-ordination and training shall be included in the strategic planning of future activities.

The programme is divided into three main activities:

- (i) Operational Co-ordination;
- (ii) Training; and
- (iii) Capital Investment Projects.

Programmes have been prepared separately for surface transport civil aviation and telecommunications.

2.2. Operational Co-ordination

The general objectives within the Operational Co-ordination activity are:

- (i) Improvement of intra-regional transport and co-operation in operations through establishment of bilateral and multilateral transport agreements and by joining international conventions;
- (ii) Promoting regional co-ordination and co-operation on maintenance of infrastructure and equipment;

- (iii) Regional harmonization of standards and specifications;
- (iv) Harmonization of rules, regulations and practices related to operations and maintenance of the infrastructure and facilities for services.

Specific objectives and detailed programmes for implementation have been prepared for each transport sector.

The implementation is carried out through meetings of representatives of all transport and communications sectors. In telecommunications these goals are achieved through SATA (Southern African Telecommunications Administrations) Conferences.

It is envisaged that these groups will be working through out the coming five year period with the exception of the Wagon Standardization and Spare Parts Task Group which is expected to complete their work in 2-3 years.

The work programmes (see Chapters 4.2, 5.1, 6.2 and Annexes 1-5) are aimed at such co-ordination of activities which make it possible to reach SADCC policy goals.

During 1985 it was decided that Meteorology and Postal Services shall be included in the tasks of SATCC.

It is foreseen that meetings will be organized within these two new sectors to deal with the regional operation and co-ordination matters.

2.3. Training

The training projects of SATCC are closely co-ordinated with the activities of the Regional Training Council for SADCC in Swaziland.

The main objectives adopted for training are:

- (i) Existing institutions shall be used and if necessary be expanded to meet the total regional needs;
- (ii) Training facilities shall be established throughout all Member States;
- (iii) Capital investment projects shall include training programmes;
- (iv) Possibilities for regional training facilities shall be investigated and implemented when feasible.

The training activities within SATCC are also dealt with by sectoral meetings described in Chapter 2.2. above.

Action programmes have been prepared for each sector and studies on training needs will be carried out on a regional basis within the coming five years (see chapters 4.3, 5.2 and 6.3).

2.4. Capital Investment Projects

The implementation programme for the Capital Investment Projects (see chapters 4.4, 5.3 and 6.4) is mainly based on the following principles, that highest priority shall be given to:

- Rehabilitation of existing facilities and
- Projects reducing economic dependence, and promoting regional trade.

The capital investment projects are divided into five main groups:

- Surface Transport Systems
- Civil Aviation
- Telecommunications
- Meteorology
- Postal Services

In the preparation of the five year plan the technical and economic feasibilities of the projects have been assessed on the basis of studies carried out within and outside SATCC and on the Traffic Forecast prepared by SATCC.

The likelihood of attracting local and/or external resources has also been considered.

Most of the Projects within the Port Transport Systems have been scheduled for implementation or initiation of implementation during 1986-90. Other projects have been regarded as less important for the fulfillment of the two main objectives and thus been scheduled for the period 1991-95. Such projects are mainly projects not included in the Port Systems or the regional railways or trunk road network. See Tables 1-8.

Other projects are aiming at facilitating the planned export of e.g. coal and minerals in the future. The projects have been scheduled in accordance with the national plans in this respect.

A large number of projects included for implementation in the five year plan are financed or financiers have shown firm interest in giving support.

Within the Telecommunication sector a large number of projects are currently being implemented. Projects proposed for implementation during the five year period lacking financing are the ITSC and Earth Station in Tanzania, a Troposcatter link between Zambia and Angola and the second and third phase of the National Telecommunications Development Projects in Mozambique with connections to Neighbouring countries.

The international financing of the projects during 1985 was in the order of USD 250 million. Commitments and firm interests shown indicate that at least the same amount will be available for 1986 and 1987.

Assuming that financing of this level will be made available also during the coming years the costs for the proposed five year implementation programme will be almost fully covered for:

- Nacala Port Transport System
- Dar es Salaam Port Transport System
- Intra Regional Transport System
- Civil Aviation and
- Telecommunications

The most urgent rehabilitation works will also be possible to carry out in Maputo, Beira and Lobito Port Transport Systems. In order to cover all the Projects within these systems additional funds in the order of USD 150 million p.a. will be needed from 1987.

2.5. Meteorological Services

Meteorological Services have been added to the SATCC Programme only in January, 1985. Details concerning the development strategy are being prepared.

A survey of the existing conditions will be carried out in 1985 in co-operation with the World Meteorological Organization.

2.6. Postal Services

Postal Services were added to the SATCC Programme in January, 1985.

A programme of action for postal services is being prepared (see chapter 8).

2.7. Financing and Implementation

To facilitate the interpretation of the projects included in the SATCC Programme of Projects Implementation Schedules for Capital Investment Projects are given in Tables 1-8.

Detailed information on the status of financing and implementation of various projects with project descriptions are presented in the Transport and Communications Report for the SADCC Harare Conference. (Status of SATCC projects).

Chapter 3 OBJECTIVES AND POLICIES

In the Lusaka Declaration : "Southern Africa : Toward Economic Liberation", signed by the Heads of State and Government of Independent States of Southern Africa at Lusaka, 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 on the Establishment 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.

Since the establishment of SATCC in 1980 the Commission has been working to achieve the above objectives.

At the Ministerial Meeting in Harare, September 1980, priorities related to capital investment projects were defined in the following way :

- (i) Rehabilitation/upgrading of all existing facilities;
- (ii) Establishment of telecommunications links and civil aviation infrastructures;
- (iii) New road, rail, air and lake transport systems where feasibility studies have already been concluded;
- (iv) Feasibility studies for further additions to the infrastructure of the region.

Rehabilitation/upgrading, which is given the highest priority, can only be a really efficient measure, if subsequent maintenance and operational efficiency also are improved, and if training is emphasized.

The policies of action approved by the SATCC 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 policy 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 strategic emphasis should be given to matters to obtain optimum utilization of the existing transport and communications facilities.

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

Consequently the SATCC Committee of Ministers has decided that in order to achieve better co-ordination in operation, training and implementation of projects, meetings of representatives of various modes of transport and communications shall be organized (see figure). These meetings report to the SATCC Co-ordinating Committee.

The Technical Unit of SATCC is responsible to the Chairman of the Co-ordinating Committee.

The Technical Unit has since 1980 been manned by the Mozambican representative and experts from the Nordic Countries and Italy. This manning of the Technical Unit is planned to change gradually during the forthcoming five years primarily due to recruitment of experts from the SADCC Member States to substitute the expatriates. The objective is that the Technical Unit be manned only by experts from the Member States in the future.

SATCC-ORGANISATION CHART

SATCC

COMMITTEE OF MINISTERS
CO-ORDINATING COMMITTEE
TECHNICAL UNIT

Meetings on :

- . ROAD INFRASTRUCTURE
- . ROAD TRAFFIC AND TRANSPORT
- . RAILWAY ADMINISTRATION
 - SPARE PARTS TASK GROUP
- . PORT ADMINISTRATION
 - SHIPPING DEVELOPMENT
- . TELECOMMUNICATIONS
- . CIVIL AVIATION
 - AIRWORTHINESS ADVISORY COMMITTEE
- . NATIONAL AIRLINES
 - MAINTENANCE SUBGROUP
 - AIRLINES SCHEDULES SUBGROUP
- . POSTAL SERVICES
- . METEOROLOGY

Chapter 4 STRATEGIES AND PROGRAMMES FOR SURFACE TRANSPORT

4.1. Goods Traffic Forecast

4.1.1. Introduction

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 SADC Member States and on future international traffic in regional ports and on regional roads and railways.

4.1.2. Total Traffic Flows

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

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 in accordance with the regional economic principles adopted by SATCC. No major additions are needed to the regional transport system to handle the forecast commodity flow but the existing infrastructure needs considerable rehabilitation and upgrading.

It is assumed that the ports of Beira and Maputo/Matola will be improved to allow for large scale exports of coal by the end of the century.

Estimated future cargo traffic through the regional ports is presented in the Table below.

TRAFFIC DEMAND IN REGIONAL PORTS 1984, 1990 AND 2000

Million port tonnes

	1984 Present demand	1990 Estimated demand	2000 Estimated demand
Maputo/Matola -----			
Containers (TEU)	8 100	90 000	170 000
General Cargo 1)	1.8	4.0	4.8
Dry Bulk	0.9	6.2	16.9
Liquid Bulk	0.4	2.5	2.5
Beira -----			
Containers (TEU)	4 100	48 000	100 000
General Cargo, RO/RO	0.5	2.6	2.9
Dry Bulk	0.2	3.2	10.5
Liquid Bulk	0.7	1.7	1.7
Nacala -----			
Containers (TEU)	5 300	36 000	50 000
General Cargo 2)	0.3	1.1	1.6
Dry Bulk	0.1	0.2	0.2
Liquid Bulk	0.1	0.2	0.2
Dar es Salaam -----			
Containers (TEU)	32 600	60 000	120 000
General Cargo 2)	1.8	2.6	3.6
Dry Bulk	0.4	0.5	0.5
Liquid Bulk	1.6	0.9	1.3
Lobito -----			
Containers (TEU)		19 200	60 000
General Cargo	0.4 3)	0.4	0.8
Dry Bulk		0.4	0.5
Liquid Bulk	0.2 3)	0.3	0.4

- 1) General cargo includes the tonnage over container and steel wharfs
- 2) General cargo includes the tonnage in containers
- 3) Estimates

4.1.3. Updating and Revision of the Goods Traffic Forecast

The Goods Traffic Forecast Study was compiled on the basis of the forecasts and information available in the Member States in 1983, which means that the key figures and basic socio-economic data are related to the late seventies or the first years in the eighties.

In the Goods Traffic Forecast Study it has been assumed that the SATCC plans for rehabilitation of ports and railways be implemented generally before 1990 and not later than 1995 and especially that the capacity of the Ports of Beira and Maputo/Matola would be increased to allow for large scale exports of coal. The implementation of the original plans has been more slow than anticipated. Therefore the forecasts have to be amended accordingly.

In addition there is a need to co-ordinate the goods traffic forecast with the work being initiated in the other sectors of importance to SADCC.

For these reasons an updating and revision of the original SATCC Goods Traffic Forecast is needed and expected to be carried out during 1986/87.

4.2. Operational Co-ordination

4.2.1. Road Infrastructure

The operational co-ordination related to road infrastructure aims at promoting regional co-ordination and co-operation with a view to improving and rationalizing road construction, rehabilitation and maintenance in the Member States. It is thus intended to provide an essential support for the performance of the roads sector in the Region in general and for the implementation of the SATCC Regional Programme of Projects in particular.

The specific main items dealt with are regional harmonization of design standards and work specifications for roads and bridges, improvement of efficiency of road maintenance in the Member States by reviewing and rationalizing criteria, guidelines and methods for planning, management and execution of maintenance works, as well as follow-up and review of the status and implementation of the Regional Trunk Road Network.

The strategic importance of improving the efficiency in the use of the limited resources, both funding and qualified manpower, available in the roads sector in the Region, is

shown by the fact that the major part of the road projects in the SATCC Regional Programme consists of rehabilitation works rendered necessary by deficiencies in road maintenance over an extended period in the past. Losses thus incurred include not only the financial outlays for rehabilitation but also the increased vehicle operating costs due to poor road conditions.

The operational co-ordination is mainly implemented through the meetings of officials responsible for road infrastructure.

For detailed work programme see Annex 1.

4.2.2. Road Traffic and Road Transport

In this field, the operational co-ordination is basically concerned with improvement of efficiency and safety of road traffic and transport, including in particular the facilitation of international road transport operations in the Region.

The harmonization is expected to include all basic provisions of the law and 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 implemented through meetings of officials responsible for road traffic and transport.

A detailed work programme is presented in Annex 1.

4.2.3. 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 purchase, 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, P. 2.0.1, has been carried out and a study on Regional Wagon Manufacture, P. 2.0.5, is in the programme.

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;
- 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, including routing of traffic to regional ports.

These policies are implemented through the Meetings of Railway Administrations. In addition a Spare Parts Task Group is included in the Programme. A detailed work programme is presented in Annex 2.

4.2.4. Ports and Water Transport

The regional ports 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 practices, and introduction of cost based tariffs under harmonized conditions.

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, two types of meetings have been organized:

- Meetings of Port Administrations which will deal with particular port matters; and
- Meetings on Shipping Development with representatives of ports, shippers and forwarders as well as shipping side in the region. This group will deal with subjects under shipping development and transit traffic flows.

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 Cooperation on Shipping has been initiated.

A detailed work programme is presented in Annex 3.

4.3. Training

4.3.1. Introduction

The main guidelines of the SATCC training activities are :

- Training should take place inside the SADCC Region when possible;
- Existing institutions should be used to the maximum extent and if necessary expanded to meet needs;

- Training of nationals as instructors in all priority areas is a matter of urgency and should take place without disrupting other essential training, which may have to be undertaken for the time being in some fields, using expatriate instructors;
- Training facilities should be spread as widely as possible throughout all member countries;
- Some training facilities can only be provided on a regional level. The criterias for provision of such facilities should be clearly defined;
- All capital investment projects should include assessment of the manpower requirements needed to operate and maintain the facilities and equipment being provided;
- Capital investment projects should include training programmes for the staff appointed to operate and maintain the facilities being provided; and
- The training projects of SATCC should be co-ordinated closely with the activities of the Regional Training Council responsible for the overall manpower development of SADCC.

Training has a high priority in the SATCC Regional Programme of Projects.

Before actual training activities can be initiated on a regional level it is necessary to analyse the training needs and capacities of existing training institutions in the different sectors. An inventory in this respect is being made. Several studies on training have also been included in the Programme.

The studies and the implementation of the recommended training activities will be carried out in close cooperation with the existing training institutions in the different sectors.

4.3.2. Roads and Road Transport

The training strategies in roads and road transport include the strengthening of existing training facilities and capabilities serving the Region both at national and regional levels, promotion of regional cooperation in training, and inclusion of training components in capital investment and other projects where feasible.

The action envisaged for the period 1985-1990 include:

- (i) Study on Road Traffic and Transport Training. The study will cover the following crucial functions serving road traffic and transport:
 - vehicle servicing and repair (workshop personnel)
 - management and other functions within road transport enterprises
 - public services in charge of planning, management and control of road traffic and transport.

It will assess the manpower needs and training capacities in the above fields with the aim of arriving at concrete proposals and programmes for improving the existing manpower situation;
- (ii) Preparation and implementation of road safety programmes including education and training of road users (see Operational Coordination);
- (iii) Formulation and implementation of training projects based on the results of the Study on Road Traffic and Transport Training and securing of financing;
- (iv) Formulation and implementation of training projects in the field of road infrastructure e.g. in support of regional action on design standards, work specifications and road maintenance.

4.3.3. Railways and Rail Transport

The strategies and programmes for 1985-1990 include strengthening of the existing training facilities.

In addition to the efforts already being made an overall regional review of manpower requirements and training is needed. To that effect a Study on Railway Training Programmes, P. 2.0.2, is included in the SATCC Regional Programme of Projects. The Study is being carried out and will give recommendations on:

- (i) overall manpower requirements;
- (ii) improvement of training facilities and courses with a view of raising both quality and capacity;
- (iii) introduction of new courses for new technologies and procedures;
- (iv) improvements to facilities, buildings, training materials, models etc.;
- (v) training measures on bilateral and multilateral levels including development of facilities;
- (vi) formulation of national programmes on the same basis; and
- (vii) demand for technical assistance and possible training abroad.

4.3.4. Ports and Water Transport

The overall goals of the training strategies in the ports and water transport sector is to provide the ports of the region with adequately trained personnel for all port functions and levels, and - in the longer term perspective - to make the region self sufficient as to training institutions and trainers. In addition to the continuous on the job training which takes place in all the regional ports, either as part of capital investments in new facilities and equipment or as part of technical and/or management assistance projects, formal training is also in dire need of upgrading.

In order to define necessary actions to attain these goals SATCC has initiated a regional study, P. 3.0.2, Port Staff Training Programmes, on which work started in September 1983. Inter alia the study includes:

- (i) Inventory and assessment of existing training facilities;
- (ii) availability of qualified staff;
- (iii) quantification of needs for qualified personnel on the different levels;
- (iv) recommendation on measures to be taken; and
- (v) time schedules for implementation of proposed programmes.

Tanzania has a port staff training institute, the Bandari College. The College was built some years ago but is not completed and needs already extensive upgrading. At present mainly clerical courses on different levels are given.

Neither Angola nor Mozambique have any national training institute. However, in Mozambique there is some institutionalized training for the middle management staff of the operations and maintenance departments. The training takes place in provisional localities.

Actions envisaged for the period 1985 - 1990 include:

- (i) Rehabilitation, upgrading and staffing of Bandari College (P. 3.7.2(10));
- (ii) Establishment of a Port Staff Training Institute for Mozambique. A pre-project (P.3.5.5) to commence in 1985;
- (iii) Establishment of a Port Staff Training Institute for Angola. A pre-project will be started as soon as the necessary output has been defined by the ongoing study;
- (iv) Support to interim training facilities and staff in provisional accommodations for use prior to permanent school facilities can be provided in Mozambique and Angola;
- (v) Continuation of the on the job training activities in all the ports. Where an expatriate expert is used to fill the position the assessed time span, needed until the local counterpart will be able to take over the job, shall be defined; and
- (vi) Training, either formalized or on the job, shall as far as possible take place inside the region. It is however envisaged that during the period in question the training of senior managers and specialists must be supplemented by training outside the region.

4.4. Capital Investment Projects

4.4.1. Introduction

This section outlines the strategies and implementation programmes for capital investment projects within the six surface transport systems. 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.

To achieve the goals of SADCC, the basic strategy is to rehabilitate and in part upgrade the existing infrastructure to cope with the traffic demand. Main emphasis will be on the rehabilitation of regional railways and ports.

The following criteria have been considered in order to establish priorities and in scheduling of the implementation of projects:

- (i) their contribution to the reduction of the dependence on the Republic of South Africa;
- (ii) the regional importance and impact of the projects, especially for the land locked Member States;
- (iii) the effect of the projects on reduction of transport costs and improvement of services compared with the expected traffic flows;
- (iv) the national evaluation of the projects within the framework of national development plans;
- (v) relationship with other projects; and
- (vi) promoting trade between Member States.

The implementation of infrastructure projects frequently covers a fairly long period. Therefore the programmes are scheduled for the periods 1985 - 1990 and 1991 - 1995 and to some extent for the period beyond 1995.

The strategy takes into account that the development of regional ports, railways and road network shall progress in a harmonized manner to avoid bottlenecks in the future. Similarly it has been realized that operational co-ordination and development of manpower have to be promoted at the same time.

4.4.2. Maputo Port Transport System

General

The Maputo Port Transport System is serving Southern Mozambique, Swaziland, Southern and Western Zimbabwe, and to some extent Zambia and Botswana. The port is the main alternative to South African Ports for overseas traffic. It is also a possible alternative to South African Ports for Lesotho traffic.

The projects included in the system aim at improving the services and reducing the transport costs. This is especially valid for the port and railway projects.

The Lesotho road projects included in the system are all parts of the Lesotho main road network. The projects are aiming at promoting national integration and eliminating the need of using South African roads for traffic from one place to another within Lesotho.

It is foreseen that Maputo/Matola Port towards the end of the century, shall be the main coal and mineral port for the SADCC countries. To meet this demand the entrance channel has to be deepened and the mineral and coal handling capacities increased considerably.

The transport system includes three port subprojects, 11 railway projects and 8 road projects. See Table 1.

Project implementation during the period 1985 - 1990

Within Maputo/Matola Port System two projects of high priority are currently being implemented, rehabilitation of the coal terminal (P. 3.5.1(2)), and the construction of Container Terminal including management assistance (P. 3.5.1(3)). Towards the end of the period additional handling capacity has to be made available. Financing for the implementation of the expansion of handling capacity is being sought.

A study on the dredging of the entrance channel to Maputo/Matola will start in 1985 and the implementation is foreseen to commence in the end of the period (P. 3.5.1).

Within the railway sector high priority is given to emergency repairs of the Maputo Chicualacuala railway line. Implementation is scheduled to start in 1985. The emergency repairs have to be followed by rehabilitation of the rest of the line, which should start in this period and continue in the second five year period (P. 2.5.6).

TABLE 1 MAPUTO PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project title	Total cost USD mill.	Implementation schedule													
			-85	86	87	88	89	90	91	92	93	94	95			
PORTS AND WATER TRANSPORT																
0.51	Maputo Port. MOZAMBIQUE	45	●●●●●●●●													
(1)	Feasibility Study on Improvement of the Entrance Channel		●●●●●●●●													
(2)	Coal Terminal at Matola		■													
	phase 1	1.8		■												
	phase 2	9.0			■											
	phase 3	80.0				■										
(3)	Container Terminal Equipment and Management Assistance	22.3	■													
RAILWAYS																
2.21	Rehabilitation of the Main Railway Line. BOTSWANA			■												
(1)	Gaborone-Southern Border	19.0		■												
(2)	Francistown-Northern Border	15.0			■											
(3)	Gaborone-Francistown	80.0				■										
2.22	Rehabilitation of Railway Telecommunications Facilities. BOTSWANA	0.5		■												
2.24	Renewal of Train Working System. BOTSWANA	5.0		■												
2.25	Maintenance Depot for Botswana Railway. BOTSWANA	5.0		■												
2.31	Container Terminal with Customs Facilities. LESOTHO	1.4		○												
2.32	Expansion of Oil Storage Facilities. LESOTHO	5.8		○												
2.51	Rehabilitation of the Mozambique-Swaziland Railway.	24	●●●●●●●●													
	Technical and Economic Study and Engineering Design. MOZAMBIQUE			■												
2.56	Railways in Southern Mozambique and Swaziland Railway. MOZAMBIQUE			■												
(2)	Study on Engineering for Bridges on Railways in Southern Mozambique	0.2		●●●●●●●●												
(3)	Rehabilitation of the Maputo Chicualcuala Railway phase 1 Emergency Programme for 80 km and Technical Assistance	20.0		■												
	phase 2 Rehabilitation of remaining 444 km	86.0			■											
2.57	Feasibility Study on the Reorganization of Maputo and Matola Yards. MOZAMBIQUE	1.3	●●●													
2.510	Wagon Rehabilitation CFM (SUL). MOZAMBIQUE	3.3		■												
2.61	Modification of Wagons and Wagon Maintenance, Swaziland Railway. SWAZILAND	1.2		■												
ROADS																
1.31	Upgrading of the Road Mochales Hoek - Outhing-Qachas Nek. LESOTHO	84.5	■													
1.32	Upgrading and Reconstruction of the Road Taung-Mokhotlong-Sani Top. LESOTHO	45.0			■											
1.33	Upgrading of the Road Thaba Tseka-Taung-Mpiti. LESOTHO	33.5			■									■		
1.34	Construction of a New Road Ramabanta-Semonkong-Sekate. LESOTHO	32.0								■				■		
1.35	Upgrading of the Road Mokhotlong-Oxbow. LESTHOTO	23.0								■				■		
1.54	Rehabilitation of the Road Connection to Swaziland. MOZAMBIQUE	19.5		■										■		
1.56	Study of a New Road Linking Southern Zimbabwe with the Maputo Area. MOZAMBIQUE	0.4						○	○	○						
1.61	Rehabilitation and Upgrading of the Road Section Lomahasha Siteki-Big Bend. SWAZILAND	22.0	■											■		
	Total	686														

●●●●● Feasibility study (financed)
 ○○○ Ditto not financed
 ■ Implementation (financed)
 ■ Ditto not financed

Rehabilitation of the Machava - Swaziland Railway should start in the end of the period. Study and design work is being carried out in 1985/86 (P. 2.5.1). Within Swaziland Railway modification of wagons and wagon maintenance is urgently needed (P. 2.6.1). The same applies to the Mozambican Railways (CFM-Sul) (P. 2.5.10). Financing for these projects is being sought.

The Botswana Railways will be fully operated by Botswana from January 1987.

An agreement to construct a maintenance depot (P. 2.2.5) has been signed with DANIDA. Regarding the main line a track rehabilitation scheme has commenced on the section Gaborone - Southern Border. The rehabilitation project is foreseen to be fully implemented in 1995. Additional funds are needed. Rehabilitation of railway telecommunications facilities (P. 2.2.2) and renewal of the train working system (P. 2.2.4) will be implemented soon.

Within Lesotho a container terminal with customs facilities (P. 2.3.1) and expansion of oil storage facilities (P. 2.3.2) are scheduled to be implemented.

In Zimbabwe there are no railway projects within the Maputo Port System. The Zimbabwe National Transport Study proposes electrification of the railway section Dabuka-Bulawayo. NRZ is capable of handling all traffic routed to and from Maputo without any major new investments.

A road project of high priority is the link between Maputo and Swaziland (P. 1.5.4 and P. 1.6.1). This project is foreseen to be implemented before 1990.

Regarding the main roads in Lesotho, upgrading projects are currently being implemented. In order to continue this work to cover all projects additional financing is needed (Projects 1.3.1 through 1.3.5). The work is foreseen to continue also during the 1991-95 period.

Project implementation during the period 1991-95 and beyond

Within the railway sector rehabilitation work will continue on the Maputo-Chicualacuala railway line and the main line in Botswana.

Additional projects to be implemented during this period include rehabilitation of bridges on railways in southern Mozambique (P. 2.5.6(2)). A study on this will be made during the 1985 - 90 period. Reorganization of Maputo/Matola yards is necessary in the long run. A study for this project has been made (P. 2.5.7).

Financing of implementation is needed for all the above projects. The rehabilitation and upgrading of the main road network in Lesotho will also continue during this period. Additional financing is needed.

4.4.3. Beira Port Transport System

General

Beira Port Transport System is serving Central Mozambique, Northern Zimbabwe, Southern Malawi and to some extent Zambia.

For Northern Zimbabwe Beira Port is the nearest and cheapest alternative for overseas traffic. This is also the case for Zambian goods transported by road. For Malawi, Beira is an alternative to Nacala Port.

The port projects aim primarily at improving the service of the port, and making it possible to accommodate larger cargo vessels in order to increase the coal handling capacity. The use of larger tank ships will also reduce the cost of mineral oil products for Central Mozambique and Zimbabwe. The transport system includes 16 port sub-projects, four railway projects and four road projects. See Table 2.

A comprehensive 10-year plan is being prepared for the Beira Port System. A technical co-ordination conference is scheduled for 1986.

Project implementation during the period 1985 - 90

The port projects to be implemented during the period 1985-90 are those which primarily aim at increasing the bulk and unit loads handling capacity.

On the railway side repairs on the Dondo-Zimbabwe Railway are urgently needed and the rehabilitation of the line is of high priority (P. 2.5.3).

It is as important to rehabilitate the Beira Malawi railway line. Rehabilitation work is partly going on between Dondo and Dona Ana. Financing is being sought. (P. 2.5.4(2)).

TABLE 2 BEIRA PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project title	Total cost USD mill.	Implementation schedule												
			'85	'88	'87	'88	'89	'90	'91	'92	'93	'94	'95		
352	PORTS AND WATER TRANSPORT	365													
(1)	Increase in Capacity of the Port of Beira MOZAMBIQUE	(211)	■	■	■	■	■	■	■	■	■	■	■	■	
(2)	Rehabilitation and Short Term Improvements Entrance Channel Study completed	(34)	■	■	■	■	■	■	■	■	■	■	■	■	
(3)	Masterplan Study completed	(12)	■	■	■	■	■	■	■	■	■	■	■	■	
	Masterplan projects														
(4)	Port Service Facility	(36)		■	■	■	■	■	■	■	■	■	■	■	
(5)	Oil Terminal	(92)		■	■	■	■	■	■	■	■	■	■	■	
(6)	Sugar, Cereals Terminal	(313)		■	■	■	■	■	■	■	■	■	■	■	
(7)	Multi purpose berths 2-5	(631)		■	■	■	■	■	■	■	■	■	■	■	
(8)	Dredging to CD 8	(95)		■	■	■	■	■	■	■	■	■	■	■	
(9)	Reclamation Coal Terminal	(403)		■	■	■	■	■	■	■	■	■	■	■	
(10)	Railways Non Coal Traffic	(178)		■	■	■	■	■	■	■	■	■	■	■	
(11)	Roads	(37)		■	■	■	■	■	■	■	■	■	■	■	
(12)	Containers multi purpose Berth 23	(178)		■	■	■	■	■	■	■	■	■	■	■	
(13)	Channel Dredging CD 10	(216)		■	■	■	■	■	■	■	■	■	■	■	
(14)	Coal Terminal Phase 1,2	(818)								■	■	■	■	■	
(15)	Coal Terminal Phase 3	(398)												■	
	RAILWAYS														
2.4.1	Track Rehabilitation Malawi Railways MALAWI	200	■	■	■	■	■	■	■	■	■	■	■	■	
2.4.2	Supply of Railway Rolling Stock MALAWI	90	■	■	■	■	■	■	■	■	■	■	■	■	
2.5.3	Rehabilitation of the Beira Zimbabwe Railway, Dondo Zimbabwe Border MOZAMBIQUE	200	■	■	■	■	■	■	■	■	■	■	■	■	
2.5.4	Rehabilitation of the Beira Malawi Railway MOZAMBIQUE														
(1)	Section Beira Dondo	210	■	■	■	■	■	■	■	■	■	■	■	■	
2.	Section Dondo Malawi Border	1120	■	■	■	■	■	■	■	■	■	■	■	■	
2.5.11	Rehabilitation of Steam and Diesel Locomotives and Conversion of Beira Workshop CFM (CENTRO) MOZAMBIQUE	47	■	■	■	■	■	■	■	■	■	■	■	■	
	ROADS														
1.4.2	Study on the Upgrading of the Road Blantyre Mutema Mutema Mocuba MALAWI MOZAMBIQUE	70		○	○	○	○	■	■	■	■	■	■	■	
1.5.1	Rehabilitation of the Tele Cassacatiza Road Section Matundo Chuta MOZAMBIQUE	65			■	■	■	■	■	■	■	■	■	■	
1.5.3	Study on the Rehabilitation of the Road Beira Chumbe Zimbabwe Border MOZAMBIQUE	21	●	●	■	■	■	■	■	■	■	■	■	■	
1.9.3	Study on the Upgrading of the Eastern End of the Road Harare Mutema Mozambique Border ZIMBABWE	01			○	○	■	■	■	■	■	■	■	■	
	Total	649													

■■■■ Implementation (financed) ●●●● Feasibility study (financed)
 ■■■■ Ditto not financed ○○○○ Ditto not financed

Rehabilitation of the Beira-Dondo section, (P. 2.5.4(1)) which serves the needs of both Malawi and Zimbabwe traffic is also of high priority.

Additional motive power is needed and conversion of Beira Workshop to handle repair of diesel locomotives (P. 2.5.11) has also to be made.

Additional rolling stock is needed in Malawi (P. 2.4.2). The project is partly financed. Additional funds are needed for the remaining part.

The rehabilitation of the road Beira - Chimoio - Zimbabwe Border (P. 1.5.3) is essential in order to obtain an adequate road connection between Beira, Northern Zimbabwe and Central Zambia. A feasibility study for this project has been finalized in 1985. Financing is being sought for the implementation which should start soonest.

Project implementation during the period 1991-95 and beyond

The improvement of Beira Port will continue during this period. In the end of the century there will be a need of further extension of the Coal Terminal to handle large volumes of coal to be exported from Mozambique.

Further improvements of the railway line Dondo-Zimbabwe Border are needed in order to reduce the ruling gradients and to increase the minimum radius. This work should latest be carried out during the period 1990-95.

Upgrading of the Road Blantyre-Mulanje/Milange--Mocuba (P. 1.4.2) is expected to be completed at the beginning of the period.

The rehabilitation of the Tete-Cassacatiza Road in Mozambique (P. 1.5.1) is proposed to be made within this period. Financing for this will be needed.

4.4.4. Nacala Port Transport System

General -----

Nacala Port Transport System is serving Northern Mozambique, Malawi and to some extent Zambia. Especially for Malawi the port of Nacala is of vital importance.

The projects aim at providing modern container handling facilities at the port and rehabilitation and upgrading of the overland transport links serving the port. See Table 3.

Project implementation during the period 1985-90

The container handling facilities of Nacala Port are currently being implemented (P. 3.5.3). When this project is finalized the port will have sufficient capacity for the envisaged traffic needs during the next 10 to 15 years.

Rehabilitation of the Nacala - Malawi border railway is currently being carried out on the section Nacala-Nampula. The rehabilitation of the remaining section, Nampula-Malawi Border, should start immediately after the first phase has been finalized. Additional funds are needed for the second phase (P. 2.5.5).

The Lusaka-Chipata Road connects Zambia with Nacala through the Malawi railway system (P. 1.8.6). The road is in urgent need of rehabilitation. Financing is needed.

One more route to the Port of Nacala may be provided by the road link Karonga-Mbeya (P. 1.4.3).

TABLE 3 NACALA PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project title	Total cost USD mill.	Implementation schedule												
			85	86	87	88	89	90	91	92	93	94	95		
353	PORTS AND WATER TRANSPORT Design and Construction of Container Terminal for the Port of Nacala MOZAMBIQUE	12	■												
255	RAILWAYS Rehabilitation of the Nacala-Quaiua Railway 538 km MOZAMBIQUE	235	■												
141	ROADS Upgrading of the Road Mangochi-Chiponde-Mandimba-Mitande MALAWI MOZAMBIQUE	0.2					○ ○								
186	Rehabilitation of the Road Lusaka-Chipata ZAMBIA	120	● ● ● ●			■	■								
	Total	280													

■ ■ ■ ■ ■ Implementation (financed) ● ● ● ● Feasibility study (financed)
 — — — — — Ditto not financed ○ ○ ○ Ditto not financed

Project implementation during the period 1991-95

Most of the projects within Nacala Port transport system are planned to be implemented during the first five year period.

Apart from this, only the upgrading of the road Mangochi-Chiponde/Mandimba-Mitande is expected to be implemented during this period. At present financing of a feasibility study is being sought.

Reference is also made to the possibility of building a new rail link Lusaka-Chipata to connect with the Malawi Railways (P. 2.8.1).

4.4.5. Dar es Salaam Port Transport System

General

The Dar es Salaam Port transport System serves Tanzania and is the principal outlet for Zambia. It also serves to some extent Malawi through a road link Chilumba-Karonga-Mbeya.

The transport system includes 14 port subprojects, 22 sub-projects for improvement of TAZARA and one project regarding Zambia Railways and three road projects. See Table 4.

TABLE 4 DAR ES SALAAM PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project title	Total cost USD mill.	Implementation schedule											
			85	86	87	88	89	90	91	92	93	94	95	
3.7.2	PORTS AND WATER TRANSPORT Development of the Port of Dar-es-Salaam TANZANIA	155.2												
(1)	Kurasini Oil Terminal Rehabilitation	(2.3)	■	■	■	■	■	■	■	■	■	■	■	■
(2)	Improvement of Harbour Entrance Channel	(45.4)												
(3)	Construction of Container Terminal Berths 10 and 11	(17.6)												
(4)	Berth 9 Rehabilitations	(5.0)												
(5)	Construction of Grain Facility	(16.7)	■	■	■	■	■	■	■	■	■	■	■	■
(6)	Ubungu Container Depot	(3.7)												
(7)	Lighterage Quay and Belgian Wharf	(6.7)												
(8)	Construction of a Tug Berth	(5.2)												
(9)	Purchase of Shore-based Container and General Cargo Handling Equipment	(22.4)												
(10)	Purchase of Floating Craft	(3.5)												
(11)	Technical Assistance to THA and Improvement of Bandari Coliege	(2.5)	■	■	■	■	■	■	■	■	■	■	■	■
(12)	Rehabilitation of Berths 18	(16.7)	■	■	■	■	■	■	■	○	○	○		
(13)	Study on New Oil Terminal	(0.2)												
(14)	Study on Transit Warehouse for Zaire, Burundi and Ruanda Cargo	(3.6)	○	○	○	○	○	○	○	○	○	○	○	○
(14)	Study on Container Handling in Tanzania	(0.5)	●	●	●	●	●	●	●	●	●	●	●	●
2.7.1	RAILWAYS TAZARA 10-YEAR Development Plan Projects TANZANIA/ZAMBIA													
CE.1	Rehabilitation of Quarries	3.2												
CE.2	Permanent Rectification of Landslides	12.0												
CE.3	Mechanized Track Maintenance	14.9												
CE.4	Rail Welding	16.4												
CE.5	Rail Burn Repairs	0.5												
CE.6	Terminal Facilities at New Kapiri Mposhi	0.3												
CE.7	Railway Link TAZARA Mpulungu Port, Zambia	0.4												
ST.1	Solar Power Panels	0.8	○	○	○	○	○	○	○	○	○	○	○	○
ST.2	Back-up HF Radio Link	0.3												
ST.3	Teleprinters	0.1												
ST.4	Feasibility Study of Future Telecommunications System	0.2												
ST.5	Automatic Train Stops	4.5												
ST.6	Track Circuting	1.6												
ME.1	Locomotives	46.0												
ME.2	Goods Wagons	43.8												
ME.3	Trolleys and Trailers	1.6												
ME.4	Handling Equipment for Goods Depots	0.8												
ME.5	Rescue Crane and Rerailing Equipment	1.8												
ME.6	Wheel Lathes	2.7												
ME.7	Mechanical Equipment for Workshops	1.0												
GM.1	Technical Assistance to the Head Office	2.7												
GM.2	Manpower Development Plan and Training Facilities	1.3												
2.8.2	Wagon Repair Tracks and Tools, Zambia Railways, ZAMBIA	1.2												
1.4.3	ROADS Road Link Karonga Mbeya, MALAWI/TANZANIA	14.5	■	■	■	■	■	■	■	■	■	■	■	■
1.7.3	Rehabilitation/Strengthening of the TANZAM Highway TANZANIA	62.0												
1.8.8	Study on Rehabilitation of the TANZAM Highway, ZAMBIA	58.0	●	●	●	●	●	●	●	●	●	●	●	●
	Total	447												

● ● ● ● Feasibility study (financed)

○ ○ ○ Ditto not financed

■ ■ ■ ■ implementation (financed)

▬ ▬ ▬ ▬ Ditto not financed

Project implementation during the period 1985-90

Considerable rehabilitation of Dar es Salaam Port is foreseen to take place during this period. It is expected that all subprojects already financed will be implemented during this period.

A 10 Year Development Plan on TAZARA Projects has been prepared. It includes seven permanent way and construction projects (CE), six signalling and telecommunication projects (ST), seven motive power, rolling stock and mechanical equipment projects (ME) and two general management and training projects (GM). The projects are priority ranked from 1 to 3.

All Priority 1 projects are proposed to be implemented during the period 1985-90 and implementation of Priority 2 Projects is proposed to start during this period.

At a Technical Co-ordination Conference for financiers in Arusha, Tanzania, on 11-12 April 1985, preliminary pledging was made concerning 15 out of 22 TAZARA subprojects. The financiers will get organized and go straight ahead with preparations for implementation. Additional financing is sought.

The TANZAM Highway is in urgent need of rehabilitation (P. 1.7.3 and 1.8.8). The work should commence during the 1985-90 period and is expected to continue also during the 1990-95 period. Financing is being sought. The road link Karonga-Mbeya (P. 1.4.3) will make it possible for Malawi to use also the Dar es Salaam transport system. Recently completed emergency repairs enable a temporary use of the link while awaiting the implementation of a permanent link, which should start in the near future.

Project implementation during the period 1991-95 and beyond

The rehabilitation and upgrading of Dar es Salaam Port will continue during this period.

Financing is needed for all the sub-projects scheduled for implementation.

Implementation of Priority 3 Projects within the TAZARA 10-Year Development Plan will commence during this period. The rehabilitation of TANZAM highway is expected to continue.

4.4.6. Lobito Port Transport System

General

The Lobito Port Transport System serves Angola and normally Zambia. The transport system includes both Lobito and Luanda ports. Lobito port and Benguela Railway are important for trade between Zambia and countries in the western hemisphere due to shorter shipping distances than from east coast ports. See Table 5.

Project implementation during the period 1985-90

Development work is in progress in the port of Luanda (P. 3.1.2). Additional financing is needed in order to finalize the implementation of the project.

Rehabilitation of the Benguela Railway (P. 2.1.1) was initiated in 1981. The works have continued in a small scale.

Preparations for full scale rehabilitation to be carried out during the 1987 - 1994 period are being made and financing for implementation is being sought.

TABLE 5 LOBITO PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project title	Total cost USD mill.	Implementation schedule											
			-85	86	87	88	89	90	91	92	93	94	95	
3.1.1	PORT AND WATER TRANSPORT													
3.1.2	Master Plan for the Port of Lobito, Angola	85	●●●											
(1)	Development of the Port of Luanda, ANGOLA	31.8												
(2)	Design of a RO/RO Terminal	(2.0)	●●●	—	—									
(3)	Construction of a Grain Terminal and Silos	(13.0)	—	—	—									
(4)	Modernisation and Enlargement of Electrical System	(5.5)	—	—	—									
(5)	Earth Work	(7.5)	—	—	—									
	Construction of Canteen Facilities, ANGOLA	(3.8)	—	—	—									
2.1.1	RAILWAYS													
	Rehabilitation of the Benguela Railway, ANGOLA	182.0	—	—	—	—	—	—	—	—	—	—	—	—
1.8.1	ROADS													
	Angola-Zambia Road Link, ZAMBIA	0.2												
	Total	289												

— Implementation (financed)

●●●● Feasibility study (financed)

— Ditto not financed

○ ○ ○ Ditto not financed

Project implementation during the period 1991-95 and beyond

It is expected that the RO/RO terminal for Luanda Port will be constructed in the beginning of this period. Financing for the work is needed.

A Master Plan for Lobito Port (P. 3.1.1) is currently being prepared.

It is envisaged that the plan will include proposals for improvement of the Port and that the implementation will mainly be made during 1990 - 1995.

Rehabilitation of the Benguela Railway is expected to be completed during this period.

There are at present no regional roads of adequate standard connecting Angola with other SADCC countries. The construction of an all weather road between Kaoma in Zambia and Lumbala in Angola (P. 1.8.1) is aimed at providing one such link. The implementation of this project is foreseen to commence in the 1990's.

4.4.7. Intra-Regional Surface Transport System

General

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

The intra-regional surface transport system together with the port transport systems form a transport network which serves the trade within the region. The intra-regional system includes also links with Namibia.

Inland waterways and coastal transport systems are also parts of the intra-regional system. See Table 6.

Project implementation during the period 1985-90

Navigational Aids need to be installed along the Mozambique Coast, (P. 3.5.4). Implementation is expected during this period. A Buoy Handling and Maintenance Vessel is needed for the same project (P. 3.5.4(1)).

A study on development of navigation on Lake Malawi/Niassa is proposed to be carried out by SATCC (P. 3.7.1). Financing is however depending on the outcome of the ongoing study on the Blantyre - Dar es Salaam, Northern Corridor, which to some extent is expected to overlap the original scope of the SATCC study.

Also the Study on the Navigability of the Zambezi and Shire Rivers (P. 3.8.1) should be carried out during this period.

Within the railway sector a number of projects have been identified in the Railway Rolling Stock Study (P. 2.0.1) and are proposed to be implemented during the 1985-90 period.

TABLE 6 INTRA-REGIONAL SURFACE TRANSPORT SYSTEM PROJECTS

Project No.	Project title	Total cost USD mill.	Implementation schedule										
			85	86	87	88	89	90	91	92	93	94	95
PORTS AND WATER TRANSPORT													
354	Navigational Aids	10.2			■	■	■	■	■				
	Buoy Handling and Maintenance Vessel MOZAMBIQUE	4.0			■	■	■	■	■				
355	Port Staff Training Institute MOZAMBIQUE	6.8	●	●	●	●	●	●	●				
371	Development of Navigation on Lake Malawi/Niassa MALAWI	0.4	●	●	○	○	○	○					
381	Navigability of the Zambezi and shire Rivers ZAMBIA	0.3			○	○	○						
RAILWAY													
258	Change over to Roller Bearings and Reconditioning of Wagons (CFM) MOZAMBIQUE	14.0		■	■	■	■	■	■				
259	Facilities Materials Spares and Equipment for Workshops Repair Tracks and Wagon Maintenance MOZAMBIQUE	16.0		■	■	■	■	■	■				
281	Feasibility Study for New Rail Links Connecting Zambia with Neighbouring Countries and with Ports ZAMBIA	0.8			○	○	○				■	■	■
291	Repair Tracks and Wagon Maintenance Equipment National Railways of Zimbabwe ZIMBABWE	1.1			■	■	■	■	■				
ROADS													
111	Study of the Road N'Zeto-Soyo ANGOLA	1.1			○	○	○				■	■	■
122	Study on Jwaneng Mamuno Road Link BOTSWANA	0.6			○	○	○				■	■	■
152	Rehabilitation of the Zimbabwe Tete Malawi Road MOZAMBIQUE	20.0	■	■	■	■	■	■	■	■	■	■	■
155	Study of Unity Bridge and Access Roads MOZAMBIQUE/TANZANIA	0.9						○	○	○			■
171	Study on Rehabilitation and Upgrading of the Mtwara Songoa Mbamba Road TANZANIA	44.0			○	○	○	■	■	■	■	■	■
180	Study on Kazungula Bridge and the Pandamatenga Victoria Falls Road ZAMBIA	0.4			○	○						■	■
183	Rehabilitation of the Lusaka Kafue Livingstone Kazungula Road ZAMBIA	0.6	■	■	■	■	■	■	■	■	■	■	■
184	Rehabilitation of the Road Kafue Chirundu ZAMBIA	16.5	■	■	■	■	■	■	■	■	■	■	■
185	Rehabilitation of the Road Ndola Lusaka Road ZAMBIA	28.0	■	■	■	■	■	■	■	■	■	■	■
187	Improvement of the Road Lusaka Mongu ZAMBIA	30.0	○	○	○	○					■	■	■
192	Upgrading of the Road Plumtree Botswana Border ZIMBABWE	2.5	■	■	■	■	■	■	■	■	■	■	■
Total		238											

Implementation (financed) ●●●● Feasibility study (financed)
 Ditto not financed ○○○○ Ditto not financed

Regarding the road network high priority is given to rehabilitation of road sections which are parts of the regional trunk road network.

The Ndola - Lusaka Road (P. 1.8.5) and Lusaka - Mongu Road (P. 1.8.7) in Zambia are in need of rehabilitation. Engineering studies will be made within this period and rehabilitation work should start towards the end of the period. Financing for the implementation is being sought.

Project implementation during the period 1991-95 and beyond

A feasibility study on the Trans-Kalahari Railway has been completed. Further action depends on the development of the exploitation of Botswana coal fields.

Within the roads sector the rehabilitation of the Zambian main roads will continue during this period.

Implementation of the findings of the road studies made during the preceding period is expected during this period.

Chapter 5 CIVIL AVIATION

5.1. Operational Co-ordination

The policies in civil aviation aim at improving the services and operation of the national airlines and civil aviation departments through an extended co-ordination 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:

- (i) co-ordination and integration of the regional flight schedules;
- (ii) preferential treatment to each other in connection of granting of air traffic rights and other facilities with a view of increasing the efficiency and decreasing the dependence on outside sources;
- (iii) taking measures directed towards aircraft standardization including co-operation in the preparation of technical specifications for the type of aircraft to be operated;
- (iv) granting each other preferential treatment in the use of maintenance and overhaul facilities and other services for aircraft, ground equipment and other facilities;
- (v) co-ordination of the plans for rehabilitation and maintenance of navigational, communication and meteorological facilities for the provision of safe air navigation;
- (vi) standardization of civil aviation rules and regulations and fundamental improvement of airport facilities through mutual information exchange.

The target for air traffic co-ordination is a traffic system that makes it possible to reach any capital within the region in one day with a weekly frequency justified by actual demand. With limited resources such a system can be best achieved by establishing a traffic hub where flights from all capitals assemble at the same time.

For passenger convenience regional routes should be operated by through-going aircraft from the origin to the turn-around destination, and with full traffic rights on each leg.

Regarding joint utilization of maintenance facilities co-operation is justified only for same type of flight equipment. Thus the maintenance co-operation is entirely dependent on the flight equipment standardization schedule.

There are a number of reasonably standardized components, e.g. engines and avionic equipment, suitable for overhaul within the region. The strategy is to establish a development plan expressed in maintenance manhours spent within the region compared with manhours spent outside the region.

The responsibility for the implementation of these strategies rests with the participants to the regular civil aviation meetings.

A detailed work programme is presented in Annex 4.

5.2. Training Activities

The SATCC Regional Programme of Projects includes a Study on Civil Aviation Manpower and Training Requirements (P. 4.0.6). Financing is being sought for the study.

While waiting for financing of the study it has been decided that some preparatory work including up-dating of manpower requirements should be performed by the regional civil aviation and national airlines personnel in co-operation with SATCC Technical Unit and the ICAO Office in Nairobi.

The advise of the existing training institutions will be sought in connection with the Study. Meetings of representatives of the existing institutions will be organized to that effect.

There are various civil aviation training institutions in the Region. The ZASTI Institute in Lusaka offers a comprehensive programme of courses in civil aviation disciplines. A project regarding an extension of the institute has been included in the SATCC Regional Programme (P. 4.8.5). Financing for the project is being sought.

5.3. Capital Investment Projects

Capital investments in civil aviation are almost entirely related to the building of new airports or rehabilitation of old airports and airport facilities. See Table 7.

The new airports at Lilongwe and Gaborone have already been completed.

TABLE 7 CIVIL AVIATION PROJECTS

Project No.	Project title	Total cost USD mill.	Implementation schedule												
			85	86	87	88	89	90	91	92	93	94	95		
4.3.1	New Airport at Maseru. LESOTHO	42.0	■	■											
4.3.2	Acquisition of New Aircraft for Air Lesotho. LESOTHO	7.0	■												
4.6.1	Development of Matsapha Airport. SWAZILAND	38.0	■	■	■										
4.8.1	Improvement of Livingstone Airport. ZAMBIA	0.2				○	○	○							
4.8.2	Improvement of Ndola Airport. ZAMBIA	0.3				○	○	○							
4.8.3	Improvement of Southdowns Airport. ZAMBIA	0.2				○	○	○							
4.8.4	New Hangar at Lusaka International Airport. ZAMBIA	16.	○	○	○	■	■	■							
4.8.5	Extension of Zambia Air Service Institute (ZASTI). ZAMBIA	1.6	○	○	○	■	■	■							
4.9.2	New Harare Airport Terminal. ZIMBABWE	3	○	○	○	■	■	■							
	Total	106													

■ Implementation (financed) ●●●● Feasibility study (financed)
 ■■■■ Ditto not financed ○○○○ Ditto not financed

The new airport at Maseru was opened on the 30th September 1985 and will be completed in 1986 (P. 4.3.1).

The development of the Matsapha airport in Swaziland will go on until the end of 1987 (P. 4.6.1).

Rehabilitation of airport lights and navigation, and approach and landing aids at the airports of Maputo and Beira have been completed in 1985 (P. 4.5.1/2).

The study on improvement of some Zambian airports (Livingstone, Ndola and Southdowns) has not yet been financed (P. 4.8.1/2/3).

The new maintenance hangar in Lusaka (for wide-body aircraft) has to be studied (P. 4.8.4). Financing of the study is being sought.

A master plan study on the development of Harare airport will be prepared in 1986. The outcome of this study will show if there is a need of constructing a new terminal building or if the reconstruction of the existing terminal will be sufficient for the near future.

This project must be given high priority in the context of the co-ordinated and integrated traffic system in the SATCC region, as Harare will be the natural traffic hub. Therefore it must have a high capacity of transit handling.

Rehabilitation of the Aeronautical Telecommunications and Radio Navigational Aids in Angola, Mozambique, Tanzania and Zambia is required.

Chapter 6 TELECOMMUNICATIONS

6.1. Policies

SARCC has adopted the following general guidelines to promote and substantially improve the telecommunications in the Region, to the benefit of joint economic development:

- (i) restoration and improvement of basic telecommunication services between the countries and areas experiencing low grade of services;
- (ii) complementing the improvement of transport services with proper telecommunication services;
- (iii) establishment of efficient communications between the landlocked countries and the ports of the region;
- (iv) introduction in a large scale of the International Subscriber Dialling in the region and with the majority of the overseas countries;
- (v) reinforcement of self reliance in respect of the regional traffic by the completion of the terrestrial link network, whenever possible, and with improvement of the interconnectivity of the satellite earth stations;
- (vi) provision of transit facilities within the region so that calls within the area need not to be routed via distant transit centres;
- (vii) improvement of the reliability and grade of services to acceptable international level on all traffic relations;
- (viii) minimisation of investment through efficient use of shared facilities by joint planning and by removal of obstacles like unduly high transit charges.

This policy is mainly implemented through:

- (i) investment projects aiming at the establishment of the terrestrial PANAFTEL network, installation of satellite earth stations and international switching centers in all countries;

- (ii) operational co-ordination aiming at co-ordination of operational matters, joint planning and common preparation for the new services; and
- (iii) training programmes aiming at self-sufficiency of the Region in the various telecommunication sectors on planning, operation and maintenance.

6.2. Operational Co-ordination

Due to the very nature of the worldwide telecommunications systems, extensive international co-operation is a pre-requisite for efficient service.

Co-operation in operational matters aims at efficiency of the 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;
- radio frequency co-ordination; and
- regional training facilities.

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

The implementation of the operational co-ordination policy of SATCC is being undertaken under SATA (Southern Africa Telecommunications Administrations) covering the entire SADCC region.

For detailed work programme see Annex 5.

6.3. Training

Training still remains one of the basic needs of the region for a correct operation and maintenance of telecommunications facilities.

On the national level training centres are operating in every country.

The need of fellowships for the training centres continues to be an important problem. Also the possibility of joint utilization of regional training facilities requires scholarship assistance.

Self sufficiency in planning and design of telecommunications plant is one of the basic needs of the region. To contribute to the solution of this problem a Training Course in National Telecommunication Network Planning (P.0.0.3(4)) has been defined. The programme comprises a course in general planning, to be arranged in Europe and courses in the design of the various sectors of telecommunications plant to be arranged in one of the training centres of the region.

6.4. Capital Investment Projects

The projects in the Regional Programme of SATCC fall mainly into the following categories:

- regional microwave radio relay system;
- satellite earth stations; and
- international telephone switching centres and telex exchanges.

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 the international subscriber dialling, and especially to the Mozambique National Telecommunication Development Project (P. 5.5.3), which is not technically viable without extensive rehabilitation of the present troposcatter links, switching equipment and to some extent even local plant.

The implementation schedule for the telecommunication projects is shown in Table 8.

6.4.1. Regional Microwave Radio Relay System

The establishment of the PANAFTEL terrestrial network in the SADCC region is progressing satisfactorily. A terrestrial large capacity microwave system is now operational from Gaborone to Dar es Salaam, and connecting the SADCC Countries with the East African Countries. A substantial improvement in the number of circuits that will be possible to set up via terrestrial system will take place in 1986/1990 with the completion of the projects which are ongoing.

TABLE 8 TELECOMMUNICATION PROJECTS

Project No.	Project title	Total cost USD mill.	Implementation schedule													
			-85	86	87	88	89	90	91	92	93	94	95			
5.11	Satellite Earth Station Standard A ANGOLA	14.3		○	○	○										
5.12	Expansion of the International Telecommunications System ANGOLA	38.0		■	■	■	■	■	■							
5.13	Microwave Link Luanda-Cabinda ANGOLA	5.0		○	○	○										
5.22	ITSC Gaborone BOTSWANA	5.1		■	■	■	■	■	■							
5.42	Digitalization of the Trunk Network MALAWI	10.0		■	■	■	■	■	■							
5.51	National/Regional Satellite Communications System MOZAMBIQUE	19.8		■	■	■	■	■	■							
5.53	National Telecommunication Development Project with Connections to Neighbouring Countries (Regional Part) MOZAMBIQUE	100		■	■	■	■	■	■	■	■	■	■	■	■	■
(1)	ITSC in Beira	(3.7)		■	■	■	■	■	■							
(2)	New Telex Exchange in Beira	(2.5)	●	●	●	●	●	●	●							
(3)	Microwave Link Tete-Blantyre	(8.1)	●	●	●	●	●	●	●							
(4)	Microwave Link Tete-Katete	(11.0)		■	■	■	■	■	■	○	○	○				
(5)	Microwave Link Beira-Mutare	(3.4)		■	■	■	■	■	■							
(6)	Microwave Link Namputo-Mutare	(18.0)		■	■	■	■	■	■							
(7)	ITSC at Maputo	(2.2)		■	■	■	■	■	■	○	○	○				
5.62	ITSC at Nicodze SWAZILAND	4.7		■	■	■	■	■	■							
5.63	Expansion of the National Microwave Trunk Network SWAZILAND	4.7		■	■	■	■	■	■							
5.64	Provision of Group and Channel Translating Equipment for 20 Supergroups at Nicodze for the Combined national and International Telephone Switching Centre (ITSC) SWAZILAND	1.4		■	■	■	■	■	■							
5.71	Microwave Link Mbeya-Karonga-Mzuzu TANZANIA MALAWI	9.9		■	■	■	■	■	■							
5.72	Extension of ITSC Capacity TANZANIA	4.3		■	■	■	■	■	■							
5.73	Standard A Earth Satellite Station at Dar Es Salaam TANZANIA	10		○	○	○	○	○	○							
5.82	Expansion of the Earth Station at Mwembeshi ZAMBIA	21		■	■	■	■	■	■							
5.83	Microwave Terminal at Chingota to complete the Link Zambia-Zaire ZAMBIA	2.2		■	■	■	■	■	■							
5.84	Microwave Link Zambezi-Lusaka	4		○	○	○	○	○	○							
5.85	Microwave Link Kariba-Siavonga-Lusaka ZAMBIA	2		○	○	○	○	○	○							
	Total	254														

■ ■ ■ ■ Implementation (financed) ● ● ● ● Feasibility study (financed)
 — — — — Ditto not financed ○ ○ ○ ○ Ditto not financed

During the period after 1990, implementation of the microwave backbone system of Mozambique (P. 5.5.3), including the link to Katete (Zambia), will drastically reduce the difficulties in telecommunications with the ports.

6.4.2. Satellite Earth Stations

The satellite earth station programme extends at present only up to 1987. The programme has been progressing well during the last years. The station in Zimbabwe (P. 5.9.2) is expected to be commissioned by mid 1985, and the National/Regional Satellite Communication System of Mozambique, (P. 5.5.1) part I, early in 1986.

In Angola the project on expansion of the international telecommunication services (P. 5.1.2) will increase the number of circuits on the existing Standard A Antenna and will provide equipment for the Standard B Antenna already installed. This project will be completed in 1987, and will permit also the establishment of regional connections with Tanzania, Zambia and Zimbabwe in addition to the already established circuits with Mozambique.

It is also important to note the expansion of the satellite communications in Zambia (P. 5.8.2). The system will provide an important transit centre for the region, in accordance with the routing plan of Africa, to avoid traffic through transit points outside the region and even Europe.

Tanzania has planned a new Standard A Antenna (P. 5.7.3), for which the implementation schedule has to be co-ordinated with the international switching centre (P. 5.7.2).

In order to achieve improved interconnectivity amongst the different types of stations, the extensions should be carefully harmonized and shared use of the existing stations examined. In the field of satellite communications the new development in the space segments has to be carefully considered. Because of the complexity of the problem SATCC has initiated a study (P. 5.0.2) the first phase of which is now being implemented.

6.4.3. International telephone switching centres and telex exchanges

International switching centres or facilities are available in all Member States.

New digital centres are now operating in Lesotho, Zambia and Malawi. The ITSC in Zimbabwe will be operational shortly. In the first part of the period 86/90 new centres will be implemented in Angola, Botswana, Mozambique and Swaziland.

The provision of these facilities opens a comprehensive international subscriber dialling system at least between the capital cities by 86/87 and at large scale in the region and with overseas countries by the end of the eighties. The implementation of ISD requires co-ordination. For this purpose, a study is proposed with the aim to individualize the systems and to remove obstacles.

Telex is mostly operating in automatic mode already. A new telex centre will be implemented in Angola as a part of P. 5.1.2. In Mozambique a feasibility study on a New Telex Exchange in Beira is ongoing and it is expected that the Federal Republic of Germany will financing the implementation. P. 5.5.3(2).

Chapter 7 METEOROLOGICAL SERVICES

Meteorology was included in the activities of SATCC in January, 1985.

Meteorology is well suited for regional co-operation, particularly in respect of equipment for data collection, exchange of meteorological data, analyses and forecasts.

Meteorological services are of vital importance for civil aviation and navigation and also essential for agriculture.

At present SADCC Member States are heavily dependant on the Republic of South Africa on meteorological information and communications. Establishment of SADCC regional co-operation on meteorological services will reduce this dependency.

SATCC has been approached by international co-operating partners who have shown interest in financing regional meteorological projects. Inclusion of such projects in SATCC Regional Programme of Projects has been proposed.

On the above grounds a programme of action is being prepared including project ideas concerning meteorological services related to all branches of meteorology and covering telecommunications and training aspects as well.

The overall objectives of the planned regional co-operation on meteorological services shall be in accordance with the policies and objectives indicated in Chapter 3, Overall SATCC Objectives and Policies, above.

In respect of meteorology it is worthwhile to note that the international co-operation in this field is already well advanced. This co-operation is mainly carried out within the World Meteorological Organization (WMO). In addition co-operation is promoted by various United Nations and other organizations.

Contacts are maintained also on a country-to-country basis.

Deficiencies in this respect exist in the SADCC Region. Therefore co-operation should be promoted and adequate facilities provided for regional and national meteorological services.

A survey on the existing conditions in the region will be carried out in 1985 in co-operation with WMO. Based on the survey a programme for co-operative actions, training and project identification will be launched in 1986 for implementation in the period up to 1990. A Regional Centre for meteorological services and rehabilitation and upgrading of National Meteorological Centres are foreseen to be included in the programme.

Chapter 8 POSTAL SERVICES

Postal Services was included in the SATCC Programme in January, 1985.

Postal services are a natural sector for regional co-operation. Proper functioning of the regional postal services is essential for the SADCC work in all sectors.

Postal services are closely related to the other sectors of transport and communications and thus it has been decided to consider postal services as a new sector within SATCC.

The overall objectives and policies for the regional co-operation on postal services corresponds closely to the general policies of SATCC as presented above in Chapter 3, Overall SATCC Objectives and Policies.

In particular the need of an efficient regional postal system as a measure to implement a close regional co-operation in the SADCC Region is emphasized.

International co-operation on postal services takes place within the Universal Postal Union. The regional co-operation on postal services among the SADCC Member States is carried out within this international co-operation combined with specific agreements among the SADCC Member States.

A programme of action on regional co-operation in postal services is needed and preparations for such a programme has been initiated in June 1985.

Short term experts have been recruited to prepare such a programme. The objectives of the work are:

- identification and evaluation of the existing postal services and of the most promising areas for co-operation among the SADCC Member States; and
- recommendations for projects, procedures and policies aiming at improvements in the postal services in the SADCC Region.

Section Two:

STATUS OF PROJECTS

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. Substantial pledges were made at the SADCC Maputo Conference in November 1980 for financing of transport and communications projects and new pledges were made at the following SADCC Conferences.

This report has been prepared for the SADCC Harare Conference. It gives an up-to-date picture of all projects included in the regional programme inclusive of financial status.

Chapter 1 INTRODUCTION

SATCC is now for the sixth time presenting a comprehensive report on project financing and implementation giving status in September 1985.

The SATCC Strategies for the Next Five Years are presented in a separate document. A summary of the Strategies is included in this report as Chapter 2. A summary of Project costs and financing is presented in Chapter 3 the Implementation Status in Chapter 4 and the Financial Status in Chapter 5. Tables showing the project costs and status of financing and implementation for each project is presented in Annex 1 and Project briefs in Annex 2.

Chapter 2. SUMMARY OF SATCC STRATEGIES FOR THE NEXT FIVE YEARS

"SATCC Strategies for the Next Five Years" 1986-1990, will be devoted towards implementation of programmes developed during the first five year period of SATCC's existence.

2.1. Objectives and Policies

The basic objectives are listed in the Convention on the Establishment of the Southern Africa Transport and Communications Commission (SATCC) of 1980. One of the key objectives is to reduce economic dependency, particularly, but not only, on the Republic of South Africa.

Of first priority towards that end is the rehabilitation and upgrading of the existing facilities and provision of adequate telecommunications and civil aviation services.

In addition to capital investment projects operational co-ordination and training shall be included in the strategic planning of future activities.

The programme is divided into three main activities:

- (i) Operational Co-ordination;
- (ii) Training; and
- (iii) Capital Investment Projects.

Programmes have been prepared separately for surface transport civil aviation and telecommunications.

2.2. Operational Co-ordination

The general objectives within the Operational Co-ordination activity are :

- (i) Improvement of intra-regional transport and co-operation in operations through establishment of bilateral and multilateral transport agreements and by joining international conventions;
- (ii) Promoting regional co-ordination and co-operation on maintenance of infrastructure and equipment;
- (iii) Regional harmonization of standards and specifications;
- (iv) Harmonization of rules, regulations and practices related to operations and maintenance of the infrastructure and facilities for services.

Specific objectives and detailed programmes for implementation have been prepared for each transport sector.

The implementation is carried out through meetings of representatives of all transport and communications sectors. In telecommunications these goals are achieved through SATA (Southern African Telecommunications Administrations) Conferences.

It is envisaged that these groups will be working through out the coming five year period with the exception of the Wagon Standardization and Spare Parts Task Group which is expected to complete their work in 2-3 years.

During 1985 it was decided that Meteorology and Postal Services shall be included in the tasks of SATCC.

It is foreseen that meetings will be organized within these two new sectors to deal with the regional operation and co-ordination matters.

2.3. Training

The training projects of SATCC are closely co-ordinated with the activities of the Regional Training Council for SADCC in Swaziland.

The main objectives adopted for training are :

- (i) Existing institutions shall be used and if necessary be expanded to meet the total regional needs;
- (ii) Training facilities shall be established throughout all Member States;

(iii) Capital investment projects shall include training programmes;

(iv) Possibilities for regional training facilities shall be investigated and implemented when feasible.

The training activities within SATCC are also dealt with by sectoral meetings described in Chapter 2.2. above.

Action programmes have been prepared for each sector and studies on training needs will be carried out on a regional basis within the coming years.

2.4. Capital Investment Projects

The implementation programme for the Capital Investment Projects is mainly based on the following principles, that highest priority shall be given to :

- Rehabilitation of existing facilities and
- Projects reducing economic dependence, and promoting regional trade.

The capital investment projects are divided into five main groups :

- Surface Transport Systems
- Civil Aviation
- Telecommunications
- Meteorology
- Postal Services

In the preparation of the five year plan the technical and economic feasibilities of the projects have been assessed on the basis of studies carried out within and outside SATCC and on the Traffic Forecast prepared by SATCC.

The likelihood of attracting local and/or external resources has also been considered.

Most of the Projects within the Port Transport Systems have been scheduled for implementation or initiation of implementation during 1986-90. Other projects have been regarded as less important for the fulfillment of the two main objectives and thus been scheduled for the period 1991-95. Such projects are mainly projects not included in the Port Systems or the regional railways or trunk road network.

Other projects are aiming at facilitating the planned export of e.g. coal and minerals in the future. The projects have been scheduled in accordance with the national plans in this respect.

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A large number of projects included for implementation in the five year plan are financed or financiers have been shown firm interest in giving support.

Within the Telcommunication sector a large number of projects are currently being implemented. Projects proposed for implementation during the five year period lacking financing are the ITSC and Earth Station in Tanzania, a Troposcatter link between Zambia and Angola and the second and third phase of the National Telecommunications Development Projects in Mozambique with connections to Neighbouring countries.

The international financing of the projects during 1985 was in the order of USD 250 million. Commitments and firm interests shown indicated that at least the same amount will be available for 1986 and 1987.

Assuming that financing of this level will be made available also during the coming years the costs for the proposed five year implementation programme will be almost fully covered for:

- Nacala Port Transport System
- Dar es Salaam Port Transport System
- Intra Regional Transport System
- Civil Aviation and
- Telecommunications

The most urgent rehabilitation works will also be possible to carry out in Maputo, Beira and Lobito Port Transport Systems. In order to cover all the Projects within these systems additional funds in the order of USD 150 million p.a. will be needed from 1987.

2.5. Meteorological Services

Meteorological Services have been added to the SATCC Programme only in January, 1985. Details concerning the development strategy are being prepared.

A survey of the existing conditions will be carried out in 1985 in co-operation with the World Meteorological Organization.

2.6. Postal Services

Postal Services were added to the SATCC Programme in January, 1985.

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Chapter 3. COSTS AND FINANCING

The financial status of the projects included in the regional programme has been updated to August 1985. 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.

The total costs of the 111 projects are at present estimated to US dollars 2742 million. Financing is fully secured for 28 projects and partly secured for 30 projects. This financing amounts to US dollars 720 million or 26 per cent of total costs for all the projects of the regional programme. Discussions with financiers are in progress regarding 40 projects. The financing being discussed amounts to US dollars 662 million or 24 per cent of total costs.

Compared with the situation just before the SADCC Mbabane Conference the number of projects being fully financed has changed from 33 to 28 and the amount secured has changed from 749 million to 662 million mainly due to changes to cost estimates and completion of projects.

The number of projects now being discussed with financiers has changed from 44 projects to 40 and the amount being discussed from US dollars 642 million to 662 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

	Estimated Costs current prices		Financing			
	Total	Foreign currency	Secured amount	%	Under discussion amount	%
Operational coordination and training	13,6	13,6	6,8	50	3,2	24
Maputo port transport system	617	513	149	24	190	31
Beira port transport system	581	496	77	13	79	14
Nacala port transport system	281	221	105	37	20	7
Dar es Salaam port tran- sport system	444	353	93	21	109	25
Lobito port transport system	211	206	29	14	163	77
Intra-regional surface transport system	240	176	53	22	57	24
Civil aviation	84	68	69	82	0	0
Telecommunication	270	235	139	51	41	15
Total	2742	2282	721	26	662	24

Operational coordination and training projects are financed to 50%.

The Maputo port transport system is financed to 24 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 31% of the total costs (see Annex 1 - Table 2).

The Beira port transport system is financed to 13 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 21 per cent. Financing has during the last year been secured for the major parts of the Dar es Salaam port projects. Financing is being discussed for another 25 percent of the total costs. A Donors Conference on TAZARA projects was held in Arusha in April 1985. Preliminary pledges were made for 15 out of 22 TAZARA subprojects.

The Lobito port transport system projects are financed to 14 per cent of the total costs. The development of the Luanda port is in progress financed by local funds.

The costs of the rehabilitation of the Benguela railway are estimated to about US dollars 182 million. Only minor parts of the project (US dollars 14 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 22 per cent of the total costs. The majority of these are road rehabilitation projects. Six projects are fully financed four projects are partly financed and financing for seven projects is under discussion (see Annex 1 and Table 7).

The implementation costs for civil aviation and telecommunication projects are comparatively well covered by funds, 82 per cent and 51 per cent respectively (see Annex 1, Tables 8 and 9).

Chapter 4. IMPLEMENTATION STATUS

Substantial progress in the implementation of the regional programme has taken place since the SADCC Mbabane Conference January/February 1985. Below follows an analysis of the progress in respect of the various categories of projects.

4.1. Operational Co-ordination and Training Programmes

The Operational Co-ordination Development Programme, Project No. 0.0.2, is now ongoing in the following sectors :

- (1) Road Infrastructure
- (2) Road Traffic and Transport
- (3) Railway Administration
- (4) Wagon Standardization and Spare Parts, Railways
- (5) Civil Aviation
- (6) National Airlines
- (7) Port Administration

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. 2.0.2, Study on Railway Training Programmes and Project No. 3.0.2, Port Staff Training Programme are now in progress.

4.2. Completed Capital Investment Projects

Since the Mbabane Conference the following projects have been completed :

- 1.9.1 Rehabilitation of the Harare - Chirundu Road, Zimbabwe
- 4.3.2 Acquisition of New Aircraft to Air Lesotho
- 4.5.1 Rehabilitation of Airport Lights, Mozambique
- 4.5.2 Navigation, Approach and Landing Aids, Mozambique
- 5.8.1 Extension of the International Switching Centre in Lusaka
- 5.9.1 ITSC at Gweru, Zimbabwe
- 5.9.2 Earth Station Standard A, Zimbabwe
(Expected to be in operation at the beginning of 1986)

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

- 1.2.1 Nata - Kazungula Road, Botswana.
- 2.5.2 Rehabilitation of the Border Station by Establishment of an Exchange Yard, Mozambique/Swaziland.
- 3.1.2 Purchase of Fork Lift Trucks, subproject of the Development of the Port of Luanda.

- 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.
- 5.6.1 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.
- 5.9.3 Microwave Link Bulawayo - Livingstone, Zimbabwe/Zambia.

The total costs of the completed capital investment projects amount to US dollars 133 million.

4.3. Capital Investment Projects Being Implemented

- 1.3.1 Mohale's Hoek - Quthing - Qachas Nek Road, Lesotho
- 1.5.2 Rehabilitation of the Zimbabwe - Tete - Malawi Road, Mozambique
- 1.6.1 Rehabilitation and Upgrading of the Road Lomahasha - Siteki - Big Bend, Swaziland
- 1.8.3 Upgrading of Lusaka - Kafue - Livingstone - Kazungula Road, Zambia
- 1.8.4 Rehabilitation of the Kafue - Chirundu Road, Zambia
- 1.9.2 Upgrading of the Road Plumtree - Botswana Border, Zimbabwe

- 2.1.1 Rehabilitation of the Benguela Railway, Angola
- 2.2.1 Rehabilitation of the Main Railway Line, Botswana
- 2.4.1 Track Rehabilitation of Malawi Railways, Malawi
- 2.5.4 Rehabilitation of the Beira - Malawi Railway
- 2.5.5 Rehabilitation of the Nacala - Malawi Border Railway

- 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 the Port of Nacala
- 3.7.2 Development of the Port of Dar es Salaam

- 4.3.1 New Airport at Maseru
- 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
- 5.5.3 National Telecommunication Development Project with Connections to Neighbouring Countries, Mozambique
- 5.7.1 Microwave Link Mbeya - Karanga - Mzuzu, Tanzania / Malawi
- 5.8.5 Microwave Link in the NW-Province, Zambia

4.4. Completed Studies for Capital Investment Projects

- 1.3.2 Upgrading and Reconstruction of the Road Taung Mokhotlong - Sani Top, Lesotho
- 1.3.4 Construction of a New Road Ramabanta - Semonkong, Lesotho
- 1.3.5 Upgrading of the Road Mokhotlong - Oxbow, Lesotho
- 1.5.3 Rehabilitation of the Road Beira - Chimoio - Zimbabwe Border
- 1.7.3 Rehabilitation of the Tanzam Highway in Tanzania

- 2.2.3 Trans Kalahari Railway Study, Botswana
- 2.3.1 Container Terminal with Customs Facilities, Lesotho
- 2.4.2 Supply of Railway Rolling Stock, Malawi
- 2.5.6 Study on Rehabilitation and Electrification of Railways in Southern Mozambique and Swaziland
- 2.5.7 Feasibility Study on Re-organization of Maputo - Matola Yards, Mozambique

- 3.1.1 Master Plan for the Port of Lobito
- 3.5.2 Increase in the Capacity of the Port of Beira.
 - (1) Rehabilitation Study
 - (2) Entrance Channel Study
 - (3) 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

4.5. Completed General Studies

- 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
- 4.0.8 Updating of 1980 Years ICAO Study on Aeronautical Telecommunications
- 4.0.9 Assessment of the Regional Airworthiness Certification and Surveillance Services

4.6. Ongoing Studies

- 1.4.3 Road Link Karonga - Mbeya, Malawi/Tanzania
- 1.8.3 Rehabilitation of the Lusaka - Kafue - Livingstone - Kazungula Road, Zambia
- 1.8.5 Rehabilitation of the Ndola - Lusaka Road, Zambia
- 1.8.6 Rehabilitation of the Lusaka - Chipata Road, Zambia
- 1.8.8 Rehabilitation of the Tanzam Highway in Zambia

- 2.0.2 Study on Railway Training Programmes
- 2.5.1 Rehabilitation of the Mozambique - Swaziland Railway
- 2.5.1.1 Rehabilitation of Steam and Diesel Locomotives and Conversion of Beira Workshop, Mozambique

- 3.0.1 Regional Co-operation on Shipping
- 3.0.2 Port Staff Training Programmes
- 3.7.1 Port of Dar es Salaam, Study on Container Handling in (14) Tanzania and on TAZARA

- 4.0.4 Commonality of Civil Aviation Legislation

- 5.0.2 Study on Harmonization of the Development of Satellite Communications.

Chapter 5. FINANCING STATUS

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

5.1. Fully Financed Projects:

- 0.0.1 Technical Assistance to SATCC Technical Unit
- 0.0.2 Operational Co-ordination Development Programme in the following sectors:
 - (1) Road Infrastructure
 - (2) Road Traffic and Transport
 - (3) Railway Administration
 - (4) Wagon Standardization and Spare Parts
 - (7) Port Administration
 - (9) Telecommunications
- 1.5.2 Rehabilitation of the Zimbabwe - Tete - Malawi Road, Mozambique
- 1.5.4 Rehabilitation of the Road Connection to Swaziland, Mozambique
- 1.8.1 Angola - Zambia Road Link, Zambia
- 1.8.4 Rehabilitation of the Road Kafue - Chirundu, Zambia
- 1.9.2 Upgrading of the Road Plumtree - Botswana Border, Zimbabwe
- 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
- 2.2.5 Maintenance Depot for Botswana Railway, Botswana
- 2.5.1 Rehabilitation of Machava - Swaziland Railway (Study)
- 2.5.11 Rehabilitation of Steam and Diesel Locomotives and Conversion of Beira Workshop, Mozambique
- 2.9.1 Repair Tracks and Wagon Maintenance Equipment, NRZ, Zimbabwe
- 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
- 4.3.1 New Airport at Maseru, Lesotho
- 5.0.2 Study on the Harmonization of the Development of Satellite Communications
- 5.1.2 Expansion of the International Telecommunications Services, Angola

- 5.2.2 International Telephone Switching Centre, Gaborone, Botswana
- 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
- 5.8.5 Microwave Link in the North - Western Province, Zambia

5.2. Partly Financed Projects:

Included among the projects indicated as partly financed are also studies regarding capital investment projects possibly leading to implementation.

- 0.0.2 Operational Co-ordination Development Programme
- 0.0.3 Training Development Programme
- 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 - Quthing - Qachas Nek, Lesotho
- 1.3.4 Construction of a New Road Ramabanta - Semonkong - Sekake, Lesotho
- 1.4.3 Road link Karonga - Mbeya, Malawi/Tanzania
- 1.6.1 Rehabilitation and Upgrading of the Road Sections Mozambique Border at Lomahasha - Siteki - Big Bend, Swaziland
- 1.8.2 Study on Kazungula Bridge and the Pandamatenga - Victoria Falls Road Botswana/Zambia/Zimbabwe
- 1.8.3 Rehabilitation of the Lusaka - Kafue - Livingstone - Kazungula Road, Zambia
- 1.8.5 Rehabilitation of the Ndola - Lusaka Road, Zambia
- 1.8.6 Rehabilitation of the Road Lusaka - Chipata, Zambia
- 1.8.8 Rehabilitation of the Tanzam Highway, Zambia

- 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 Track Rehabilitation of Malawi Railways, Malawi
- 2.4.2 Supply of Railway Rolling Stock, Malawi
- 2.5.3 Rehabilitation of the Beira - Zimbabwe Railway, Dondo, Zimbabwe Border
- 2.5.4 Rehabilitation of Beira - Malawi Railway, Mozambique
- 2.5.5 Rehabilitation of Nacala - Malawi Railway, Mozambique
- 2.5.6 Rehabilitation of Maputo - Chicualacuala (Limpopo) (3) Railway, Mozambique
- 2.7.1 TAZARA 10-Year Development Programme Projects

- 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
- 3.5.4 Navigational Aids, Mozambique
- 3.7.2 Development of the Port of Dar es Salaam, Tanzania

- 4.0.4 Commonality of Civil Aviation Legislation
- 4.6.1 Development of Matsapa Airport, Swaziland

- 5.5.1 National/Regional Satellite Communication System, Mozambique
- 5.5.3 National Telecommunications Development Project with Connections to Neighbouring Countries, Mozambique

5.3. Projects Without Financing

Projects where donors have been approached and projects, where financing is being discussed or negotiated without any final commitment or agreement, have been included in this group.

- 0.0.2 Operational Co-ordination within
 - (5) Civil Aviation
 - (6) National Airlines
 - (8) Shipping Development
- 0.0.3 Road Traffic and Transport Training
 - (1)
- 0.0.3 Satellite Communication Technology Course for SATA Member Countries
 - (5)

- 1.1.1 Study of the Road Soyo - N'Zeto, 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/ Milange - Mocuba, Malawi / Mozambique
- 1.5.1 Rehabilitation of the Tete - Cassacatiza Road, Section Matundo - Chiuta, Mozambique
- 1.5.3 Rehabilitation of the Road Beira - Chimoio - Zimbabwe Border, Mozambique
- 1.5.5 Study on Unity Bridge and Access Roads, Mozambique/Tanzania
- 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

- 1.8.7 Improvement of the Lusaka - Mongu Road, Zambia
- 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
- 2.3.2 Expansion of Oil Storage Facilities in Lesotho
- 2.5.8 Change Over to Roller Bearings, and Reconditioning of Wagons, CFM - Mozambique
- 2.5.9 Facilities, Materials, Spares and Equipment for Workshops and Repair Tracks, Wagon Maintenance, Mozambique
- 2.5.10 Wagon Rehabilitation (CFM-SUL), Mozambique
- 2.6.1 Modification of Wagons and Wagon Maintenance, Swaziland Railways
- 2.8.1 Feasibility Study for New Rail Link Connecting Zambia with Neighbouring Countries and Ports, Zambia
- 2.8.2 Wagon Repairs, Tracks and Tools, Zambia Railways

- 3.5.5 Port Staff Training Institute, Mozambique
- 3.8.1 Navigability of the Zambezi and Shire Rivers, Zambia

- 4.0.1 The Tanelec Flight Calibration Service, Arusha (2)
- 4.0.3 Study on Joint Utilization of Aircraft Maintenance Facilities
- 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
- 4.8.1 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
- 4.9.3 Modernization of AFTN - Message Switching Centre at Harare International Airport, Zimbabwe

- 5.0.1 African Domestic Satellite System
- 5.1.1 Satellite Earth Station A, Angola
- 5.1.3 Microwave Link Luanda - Cabinda
- 5.3.2 Pural Communication System, Lesotho
- 5.4.2 Digitalization of the Trunk Network, Malawi
- 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
- 5.8.4 Microwave Link Zambezi (Zambia) Luene (Angola) Zambia
- 5.8.6 Microwave Link Karib. (Zimbabwe) - Siavango (Zambia) - Lusaka

Programme for Operational Co-ordination of Railways

Under the Operational Co-ordination Development Programme (P. 0.0.2) two types of meetings have been organized within the railway sector:

a) Railway Administrations

The meetings were initiated in 1983.

The following activities are planned for 1985-86:

- (i) Introduction of new projects based on the Study of Railway Rolling Stock (P. 2.0.1). Such projects have already been included in the Regional Programme of Projects;
- (ii) Review of the work of and co-operation with the consulates for:
 - Study on Railway Training Programmes (P. 2.0.2);
 - Study on Railway Telecommunications and Signalling, Regional (P. 2.0.4); and
 - Study on Railway Wagon Manufacture, Regional (P. 2.0.5);
- (iii) Initiation of studies and projects related to containerized traffic and modal transfers of traffic;
- (iv) Preparation and initiation of follow-up actions based on the above studies (item (ii));
- (v) Review of recommendations made by the Wagon Standardization and Spare Parts task Group and initiation of follow-up actions;
- (vi) Investigations and initiation of actions concerning the routing of traffic and facilitation of the use of regional ports in accordance with SADCC goals;
- (vii) Annual review of track and locomotive maintenance;
- (viii) Study of railway tariffs and recommendations for improvements;
- (ix) Review of railway statistics and consideration of improvements;
- (x) Review of classification of goods for rate making and statistical purposes;

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- (xi) Initiation of a review of rules concerning packaging, marking, loading, and other conditions of transport;
- (xii) Initiation of investigations concerning possibilities of standardization of track materials and of their regional production;
- (xiii) Review of mechanized maintenance, preventive maintenance of track and attendance at accidents; and
- (xiv) Review of operating methods.

1987 - 1988

Activities listed for the period 1985 - 1986 are expected to continue to a large extent during the 1987 - 1988 period. The following activities are anticipated:

- (i) Activities leading to the implementation of the findings of:
 - Study on Railway Training Programmes (P. 2.0.2);
 - Study on Railway Telecommunications and Signalling, Regional (P. 2.0.4); and
 - Study on Railway Wagon Manufacture (P. 2.0.5);
- (ii) Preparation and implementation of projects related to containerized traffic and modal transfers of traffic;
- (iii) Finalization of implementation of the recommendations of the Wagon Standardization and Spare Parts Task Group;
- (iv) Continuation of efforts to direct traffic to the regional ports;
- (v) Annual review of track and locomotive maintenance;
- (vi) Revision of railway tariffs and classification of goods;
- (vii) Revision of railway statistics;
- (viii) Revision of rules concerning packaging, marking, loading and other conditions of transport, including transport of perishable food stuffs and dangerous substances;
- (ix) Action leading to the standardization of track materials;

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- (x) Simplifications of documentation related to commercial activities and operations;
- (xi) Review of signalling and train working methods;
- (xii) Introduction of programmes for mechanical maintenance and preventive maintenance of track and accident attendance;
- (xiii) Review of international conventions for possible adoption; and
- (xiv) Review of safety rules and regulations.

1989 - 1990

Completion of the implementation of the plans prepared during previous planning periods.

Preparation and initiation of implementation of further action based on experiences and findings gained during the previous planning periods.

b) Wagon Standardization and Spare Parts Task Group

The Task Group has been established in 1985 based on recommendations included in the Final Report of Railway Rolling Stock Study (P. 2.0.1).

The Task Group is expected to convene twice a year in connection with the Meetings of Railway Administrations to consider the following.

- (i) To find ways and means to overcome difficulties in maintaining adequate quantities of spare parts to keep the rolling stock operational and exploration of alternative ways by which spare parts might be exchanged. Initially consideration will be given to standardization of wagon components;
- (ii) The identification of those components requiring replacement at frequent intervals, resulting in the stabling of wagons for safety reasons and for lack of spares;
- (iii) Study of the specifications of the various components identified above, with particular reference to any inadequacy noted therein. The negotiation and agreement on behalf of Railway Administrations of the type and specifications for each component which is to be recommended for adoption as a "Regional Standard";

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- (iv) Study on the manufacturing capability and capacity within the SATCC Region for the manufacture of such componenets;
- (v) The promotion of the supply of components from sources within the Region, with a view to moderating the foreign exchange burden of member states, while propagating trade between one another;
- (vi) The consolidation of demands for items which have of necessity to be imported by Member States from sources outside the Region, with the resulted reduction in the foreign exchange element when seeking donor aid participation;
- (vii) The review of existing agreements which cover the holding of spare parts to maintain "foreign wagons", and to establish appropriate stock levels in relations to current consumption rates;
- (viii) Relating all activities to SADCC operations and resolutions;
- (xi) To identify and liaise the Consultants on areas requiring in depth study.

Programmes for Operational Co-ordination of Ports and Shipping and Shipping Development

a) Port Administration

These meetings were initiated in 1984.

The following activities are planned for 1985 - 1986 :

- (i) Review on the work done on simplification and standardization of maritime transport documents procedures with a view of adopting recommendations for implementation measures to be submitted to the relevant authorities in the region;
- (ii) Review of the work of the Consultant for Port Staff Training Programmes Study (P. 3.0.2);
- (iii) Initiation and preparation of follow up actions based on the Study (item (ii));
- (iv) Review of port regulations and procedures in the region, and evaluation of recommendations and if need be initiation of actions for joint modifications;
- (v) Review of port and maritime transport statistics in the region and initiation of measures for improvement (if needed);
- (vi) Study on port accounting practices including methods and procedures of cost accounting:
 - cost identification;
 - cost control and;
 - management information.

The meetings are expected to make recommendations;

- (vii) Studies and recommendations on charging practices and tariff structures.

1987 - 1988

Activities initiated in the period 1985/1986 will continue with implementation of agreed recommendations, and with in depth studies where needed and possibly seminars and workshops on specific subjects. The following activities are envisaged :

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- (i) Continuation of the work on simplification and standardisation of maritime transport documents procedure and extension of the work in co-operation with meetings for other modes of transport;
- (ii) Implementation of agreed recommendations on port staff training in particular as to co-operation on equipment maintenance training and spare parts stock management, specialists and senior managers training etc;
- (iii) Co-operation with other modes of transport on transport statistics in order to achieve a uniform transport statistics system for the region;
- (iv) Follow-up action on recommendations on port accounting, charging practices and tariff structures.

1989 - 1990

Completion of the implementation of plans prepared during previous periods, as well as initiation and preparation of further action based on gained experience.

b) Shipping Development

Terms of Reference for these meetings have been approved by the Co-ordinating Committee in May, 1985.

1985 - 1986

The work will at first be closely linked to the progress of the work of the Consultant for Project No. 3.0.1, Regional Co-operation in Shipping. The Group will act as a steering committee for the project. In that capacity it will evaluate the reports and recommendations submitted by the consultant, give guidelines for the progress of the work and initiate the implementation of agreed recommendations.

In addition to the items included in the study the meetings are expected to cover also other aspects related to international trade and routing of traffic through the regional ports.

In particular the following activities are envisaged for the period:

- (i) Guidance and review of the work of the Consultant for Project No. 3.0.1, Regional Co-operation in Shipping;

- (ii) Preparation and initiation of follow-up actions based on agreed recommendations from the above study;
- (iii) Initiation of bilateral transit agreements with introduction of related customs and transit regulations, procedures and documentation for transit cargo;
- (iv) Study of multi-modal operations and possibilities of establishment of indigenous multi-modal operators;
- (v) Preparation and initiation of establishment of port information centres in the port organisations with essential telecommunication facilities to/from inland countries and establishment of shipping information centres in these countries;
- (vi) Development of the Dry-Port concept and, if feasible, initiation of the establishment of this type of facilities in the non-coastal countries;
- (vii) Study and follow-up of the routing of cargo through regional and non-regional ports with the objective of promoting SADCC goals.

1987 - 1990

Activities initiated in the previous period will continue with implementation of agreed recommendations, initiation and preparation of further action based on gained experience.

It is specifically envisaged that the Group will co-operate closely with the Port Administrations, that joint meetings on mutual subjects will be held and that ultimately the two meetings will be combined.

Programme for Operational Co-ordination in Civil Aviation

The following work programme has been established for the next five years. This programme is co-ordinated, when relevant, with applicable international organizations, such as:

- the International Civil Aviation Organization (ICAO);
- the African Civil Aviation Commission (AFCAC);
- the International Air Transport Association (IATA); and
- the African Airlines Association (AFRAA).

The work programme for 1985-1986 includes the following :

- (i) Preparation of a joint co-ordinated time table including reasonable connection improvements for the National Airlines in the SATCC region;
- (ii) Preparation of a SATCC Airlines Maintenance Work Catalogue describing in detail the maintenance work each airline performs at its own facilities, also informing about work that is sub-contracted to maintenance organizations outside the SATCC region;
- (iii) Establishment of bilateral or multilateral maintenance agreements among those airlines where standardization of equipment already exists according to the SATCC Airlines Maintenance Work Catalogue;
- (iv) Establishment of procedures for revision of the air navigation regulations among the Member States in order to avoid different regulations in the region from preventing or retarding the technical or operational co-operat.on;
- (v) Review of the aeronautical information services based on a study report to be prepared by a short term expert;
- (vi) Preparation of recommended project descriptions and terms of reference for rehabilitation of the aeronautical telecommunications and radio navigational aids in Angola, Mozambique (Telecommunications only), Tanzania and Zambia;
- (vii) Adoption of principles for the Civil Aviation Authorities participation in accident investigations in the region;

- (viii) Initiation of procedures for procurement of new flight equipment to be acquired by the National Airlines with the aim at future standardization of aircraft;
- (xi) Initiation of Management Seminars or making of proposals for participation in seminars arranged by other international organizations such as IATA, ICAO, AFRAA and AFCAC etc;
- (x) Follow-up of the activities within the National and Airport Facilitation Committees and recommendations of further actions; and
- (xi) Preparation of up-dated manpower requirements based on the study performed by ICAO in 1974/75.

1987 - 1988

Activities listed for the period of 1985 - 1986 are expected to overlap following activities anticipated during 1987 - 1988 :

- (i) Continued co-ordination work within the traffic planning sector aiming at totally integrated operations, at least within some areas in the region;
- (ii) Preparatory work for establishment of a regional engine workshop and a joint structure overhaul organization in the region;
- (iii) Continued liquidation of sub-contracted maintenance work outside the region;
- (iv) Ratification of joint regulations for technical and operations requirements for commercial scheduled airlines;
- (v) Implementation of the organization for the aeronautical information services including training of personnel involved in the services;
- (vi) Completion of the rehabilitation of the aeronautical telecommunications and radio navigational aids in the countries concerned; and
- (vii) Review of differences or exceptions from ICAO recommended standards within the Member States and making recommendations for action.

1989 - 1990

Also during this period some overlapping of activities listed for previous periods are expected to occur in the following activities anticipated during 1989 - 1990:

- (i) More airlines to be included in the integrated regional operation. Final preparation for a joint SADCC Airlines Time Table;
- (ii) Implementation of a regional engine workshop for jet engines;
- (iii) Settlement of an aircraft structure and systems overhaul organization for those airlines that have a joint standardized jet aircraft type;
- (iv) Taking actions as required as a result of reported technical and operations statistics; and
- (v) Preparation and initiation of implementation of further actions based on experience and findings gained during the previous planning periods.

Programme for Operational Co-ordination within Telecommunications

The implementation of the Operational Co-ordination in Telecommunications will be carried out within SATA.

The following activities have been planned for 1985-86 :

- (i) Harmonization of the Development of Satellite Communication (P. 5.0.2). Implementation of the 1st phase of the Study which aims to define the measures to increase the interconnectivity of the regional earth stations and their harmonization with the terrestrial links;
- (ii) Carry out a Study on Traffic and Circuit Forecast, which aims to assess the adequacy of the current switching and transmission systems;
- (iii) A Study on Introduction at Large Scale of the International Subscriber Dialling, which aims to highlight the problems that are limiting the introduction of the ISD at large scale;
- (iv) Bilateral Technical Committee (Maintenance) Study which aims to define operational and maintenance arrangements for the intercountry Panaftel link; and
- (v) Reparation Centre for AXE 10 Switching System in the Region.

For the period 1987-88 the following activities are planned:

- (i) Harmonization of the Development of Satellite Communications;
- (ii) Traffic and circuit forecast; implementation of recommended measures from the study to be carried out in 1985-86;
- (iii) Introduction of large scale International Subscriber Dialling; study to be carried out in 1985 - 86;
- (iv) Bilateral Technical Committee; implementation of maintenance arrangements based on the study to be carried out in 1985-86;
- (v) Master frequency allocations plan and execution of the study; and

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(vi) Reparation centre of AXE 10; implementation.

For the period 1989-90 the following activities are planned:

- (i) Harmonization of the Development of Satellite Communications; implementation of recommended measures from phases 1 and 2;
- (ii) Traffic and circuit forecast; implementation of measures to be continued;
- (iii) Introduction of Large Scale International Subscriber Dialling; implementation of measures to be continued.

Bilateral and multilateral meetings will take place to deal with specific matters.

Bilateral meeting Angola / Zambia will be needed for the microwave link Zambezi - Luene.

Also Mozambique, Malawi and Zimbabwe have to coordinate technical and implementation problems on the link Blantyre - Tete - Harare.

Introduction of digital equipment in the area requires coordination between the neighbouring countries.

In the framework of the ARTC activity a Working Group on Tariffs and International Accounting has been established. The outcome will be considered for the SADCC Region too.

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Figure 3 Intra-Regional Surface Transport Systems Projects

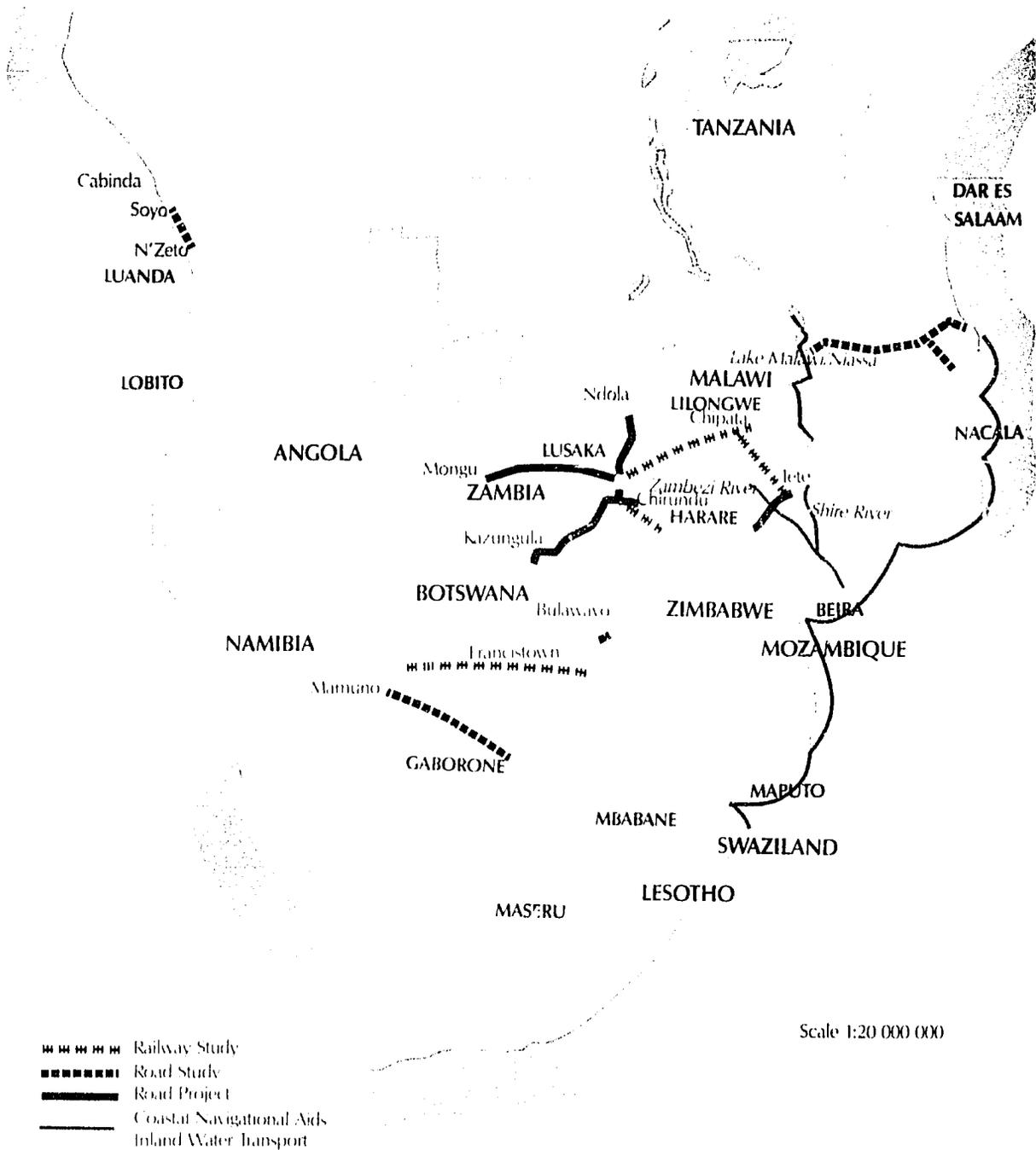


Figure 2 Ports Transport Systems Projects

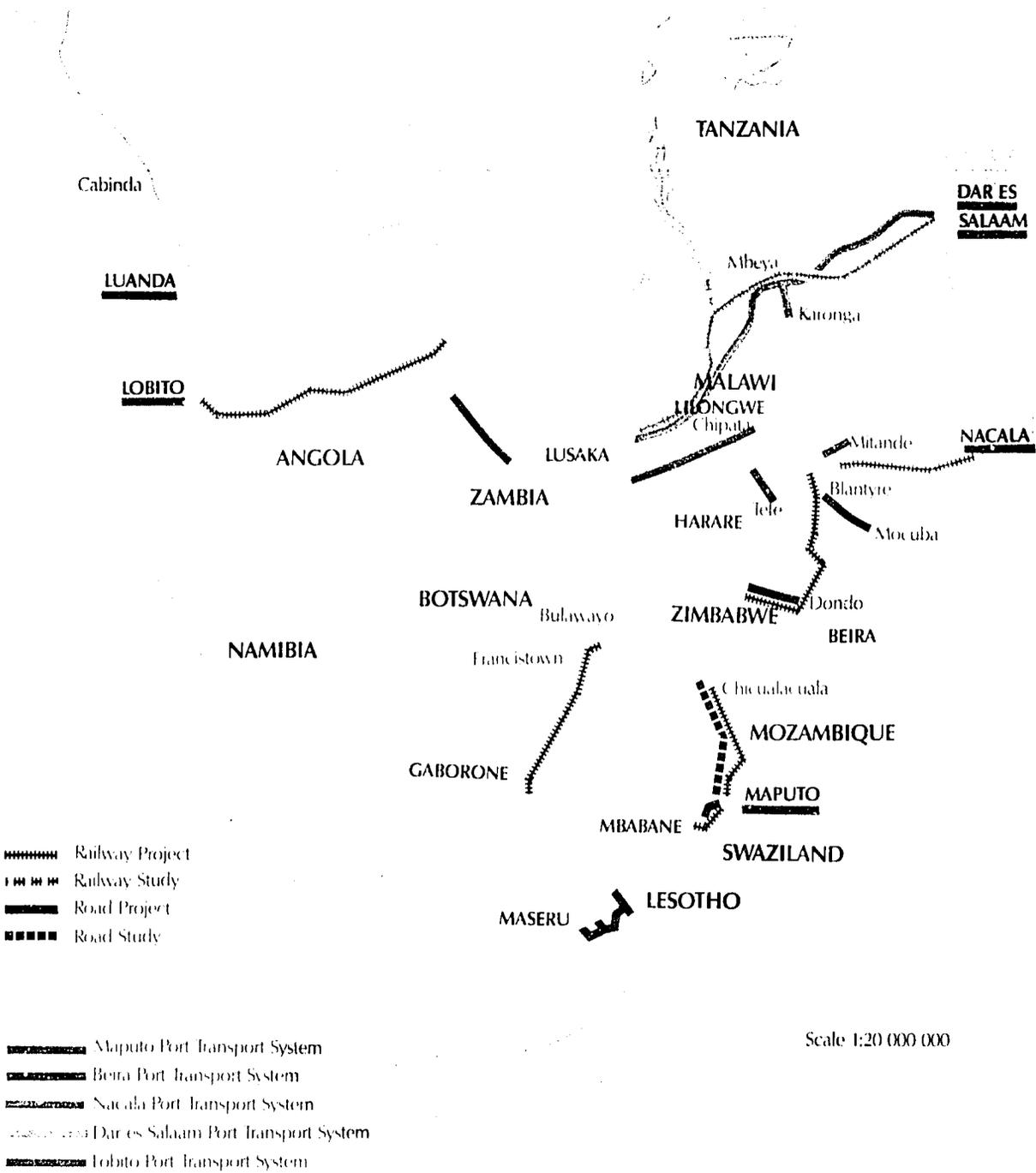
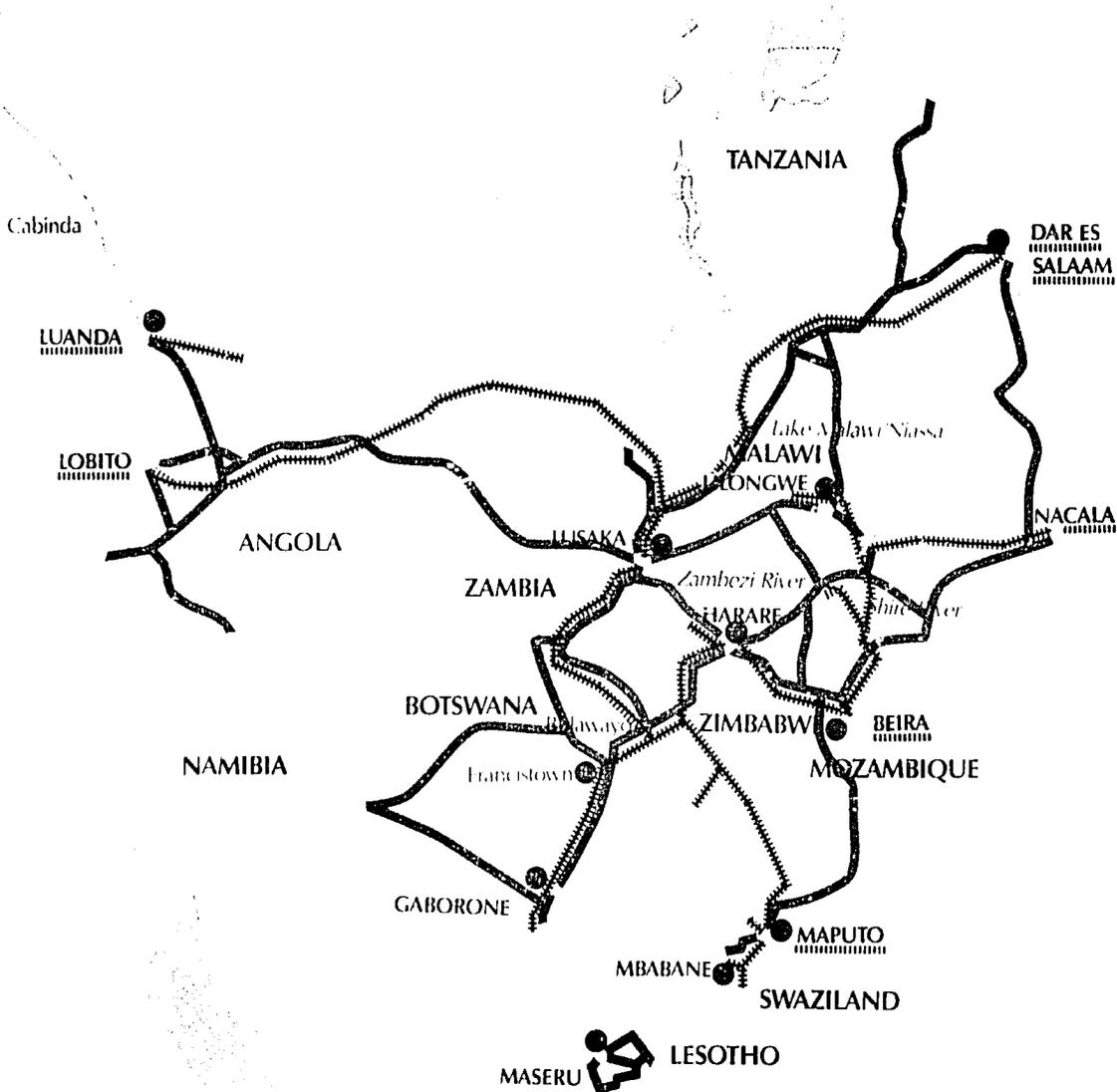


Figure 1 Regional Surface Transport Networks and Airports



-  Regional Railway Network
-  Regional Trunk Road Network
-  Airport with Regional Traffic
-  Regional Port

Scale 1:20 000 000

report prepared by a short term expert plans and/or projects are to be approved for harmonized development in the future;

- (vi) Preparations of a road safety programme involving all nine Member States. Country projects are to be prepared;
- (vii) Review of motor vehicle testing and preparation of projects/programmes for improvements;
- (viii) Initiation of harmonization of road signs, signals and markings and review of other provisions of the law, and implementation of recommendations;
- (ix) Initiation of introduction/harmonization of transport statistics;
- (x) Preparation of proposals to facilitate border crossings, including customs formalities and initiation of implementation of recommendations;
- (xi) Preparations for a container study and initiation of the study; and
- (xii) Preparations for studies on transport costs.

1987 - 1988

Activities listed for the period of 1985 - 1986 are expected to continue to a large extent during 1987 - 1988 period.

The following activities can be anticipated during 1987-88:

- (i) Based on the road standards approved by the meetings on Road Infrastructure implementation of harmonized axle load regulations and regulations concerning technical requirements related to motor vehicles;
- (ii) Review of permits control related to operations for hire and reward, especially in connection with international operations. Follow up actions will depend on the findings of the review;
- (iii) Policy matters related to the distribution of transport work between different modes of transport;
- (iv) Preparation of common rules concerning the transport of dangerous substances, perishable food stuffs and loads requiring escort;
- (v) Initiation of a review of international conventions related to road traffic and transport. The Member States are expected to join such conventions if feasible in the local conditions;
- (vi) Implementation of recommendations included in

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- studies on road user charges to be finalized 1985 - 86;
- (vii) Adoption and implementation of projects leading to harmonized control of overloading;
 - (viii) Implementation of road safety programmes;
 - (ix) Implementation of projects aiming at adequate testing of motor vehicles for their road worthiness;
 - (x) Implementation of plans to facilitate border crossings;
 - (xi) Implementation of proposals or harmonized legislation, including road signs, signals and road markings; and
 - (xii) Follow-up actions related to other work carried out 1985-1986.

1989 - 1990

Completion of the implementation of the plans prepared during the previous planning periods.

Preparation and initiation of implementation of further action based on experiences and findings gained during the previous planning periods.

Project Costs and Status of Financing and Implementation.

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Maputo,
September 1985

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TABLE 1 OPERATIONAL CO-ORDINATION AND TRAINING PROJECTS

Project No.	Project Title	Estimated Cost USD million		Secured Financ. USD million	Funding under negot.+ USD million	Comments on: Financing Status Action
		Total	Foreign			
	<u>Multimodal</u>					
0.0.1	Technical Assistance to SATCC	1.6	1.6	1.6	2.4	Financed by Denmark, Finland, Norway, Sweden and Italy. Continuation after 1985 being discussed.
0.0.2	<u>Operational Co-ordination Development Programme</u>					
0.0.2	Road Infrastructure	0.25	0.25	0.25	-	Financing secured from Denmark
0.0.2 (2)	Road Traffic and Transport	0.24	0.24	0.24	-	Financing secured from Norway
0.0.2 (3)	Railway Administration	0.20	0.20	0.20	-	Financing secured from Denmark
0.0.2 (4)	Wagon Standardization and Spare Parts Task, Railways	0.10	0.10	0.10	-	Financing secured from Denmark
0.0.2 (5/6)	Civil Aviation and National Airlines	0.25	0.25	0.25	0.15	Australian financing discontinued June 1985. Sweden approached for continuation of financing.
0.0.2 (7)	Port Administration	0.2	0.2	0.2	-	Financing secured from Norway
0.0.2 (8)	Shipping Development	0.2	0.2	-	-	Norway will be approached.
0.0.2 (9)	Telecommunications (SATA)	0.2	0.2	0.2	-	Canada has secured financing from the CIDA Fund.
0.0.3	<u>Training Development Programme</u>					
0.0.3 (1)	Road Traffic and Transport Training	0.2	0.2	-	0.2	The World Bank has been approached for financing with assistance of ESAMI, Arusha
0.0.3 (4)	Training Course in National Telecommunications Network Planning	0.15	0.15	0.15	-	Financing pledged by Italy and Sweden. Syllabi of the course prepared.
0.0.3 (5)	Satellite Communication Technology Course for SATA Member States	0.15	0.15	-	-	Canada will be approached.
0.0.4	Transit Transport Project (UNDP/UNCTAD)	2.0	2.0	1.3	-	UNDP/UNCTAD grant and technical assistance secured. Additional finance being sought.
0.0.5	SATCC Technical Services Fund	-	-	-	-	Funds USD 5 million secured by Canada and Norway.
	<u>Railways</u>					
2.0.2	Study on Railway Training Programmes	1.1	1.1	1.1	-	Financed by F.R. Germany (KfW) Ongoing project to be completed in 1986.
2.0.4	Regional Study on Railway Telecommunications and signalling	0.1	0.1	-	0.1	The Study is expected to commence out in 1986. Italy and Canada have shown interest.
2.0.5	Regional Wagon Manufacture Study	0.35	0.35	-	0.35	The Study is expected to commence in 1986 financed by the CIDA Fund

Programmes for Operational Co-ordination on Roads and
Road Traffic and Transport

a) Road Infrastructure

The practical work on operational co-ordination is carried out under the auspices of the SATCC by means of Meetings on Road Infrastructure, initiated in 1983. The preparatory and follow-up work on the issues dealt with by this Group is done by the national road authorities and SATCC Technical Unit with technical assistance.

The work programme for the period 1985-1986 includes the following:

- (i) review of design standards and criteria presently applied in the Member States;
- (ii) review of specifications for works;
- (iii) review of road maintenance situation and capability in the Member States and monitoring of on-going studies related to road maintenance;
- (iv) preparatory work and agreement on harmonization of axle loads and vehicle dimensions (in co-operation with the Meetings on Road Traffic and Transport);
- (v) preparation of and agreement on recommendations for harmonization of design criteria and standards and work specifications;
- (vi) preparatory work on guidelines and recommendations for road maintenance;
- (vii) continuous follow-up of the implementation of the Regional Trunk Road Network; and
- (viii) provision of liaison between the road authorities of the Member States in matters of common interest, e.g. for discussion of questions referred to the Group by other SATCC bodies.

Period 1987 - 1988

During this period, the work undertaken during the preceding years will be continued, with implementation of agreed proposals and recommendations where applicable. The envisaged programme is as follows:

- (i) final approvals and decisions at regional and national levels on the implementation of harmonized

design standards and specifications;

- (ii) practical introduction of the harmonized standards and specifications including necessary support actions at regional and national levels such as documentation and training;
- (iii) agreement on and issuance of guidelines and recommendations concerning road maintenance; and
- (iv) follow-up of the implementation of the decisions and measures taken.

Period 1989 - 1990

The follow-up, co-ordination and liaison activities are planned to continue :

- (i) continued follow-up of the work of earlier years;
- (ii) preparation and initiation of implementation of further action based on experience and findings gained so far; and
- (iii) general liaison and co-ordination function between the road authorities of the Member States.

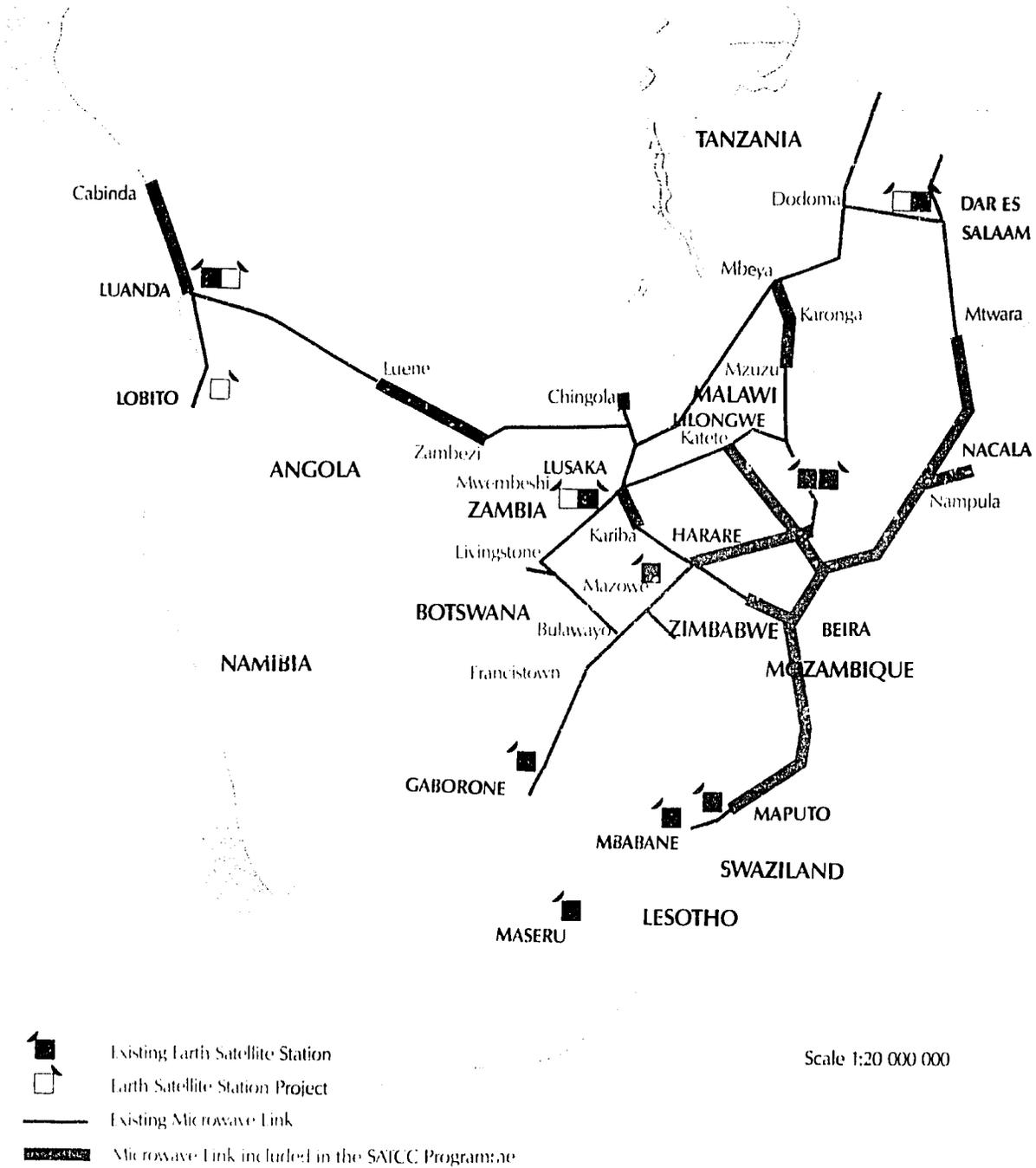
b) Road Traffic and Transport

These meetings were initiated in 1983. The preparations and follow-up activities on the issues dealt with are done by the national authorities and SATCC Technical Unit with consultancy assistance.

The work programme for 1985 - 1986 includes the following:

- (i) Renewal of the provisions of the law related to driver training and licensing. Proposals to that effect have been approved by the Group and by the Co-ordinating Committee. Implementation is expected to be completed in all Member States in 1985-86;
- (ii) Bilateral road transport agreements based on an approved model. Implementation is expected to be completed in 1986;
- (iii) Adoption, and implementation of recommendations for a regional third party insurance system. A study has already been completed. Implementations is expected to be completed in 1986;
- (iv) Studies and recommendations on road user charges. A Pilot Study has already been completed. The second phase of the Study is expected to be completed in 1986;
- (v) Review of the control of overloading. Based on a

Figure 4 Telecommunications System Projects



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TABLE 1 OPERATIONAL CO-ORDINATION AND TRAINING PROJECTS

Cont.

Project No.	Project Title	Estimated Cost		Secured Financ. million USD	Funding under negot.+ million USD	Comments on: Financing Status Action
		Total	Foreign			
<u>Ports and Water Transport</u>						
3.0.1	Regional Co-operation on Shipping	0.2	0.2	0.2	-	Italy has agreed to finance first phase of the study. Contract with consultants signed. The study is ongoing.
3.0.2	Port Staff Training Programme	0.6	0.6	0.6	-	Financed by Norway. Ongoing project. First phase completed.
<u>Civil Aviation</u>						
4.0.1 (2)	The Tanelec Flight Calibration Service Arusha	2.6	2.6	-	-	Financing is being sought. Background document prepared by Tanzania.
4.0.3	Study on Co-ordination and Utilization of Aircraft Maintenance Facilities	0.26	0.26	-	-	Partly covered by an ADB study. Revised TOR are being prepared. Financing is being sought.
4.0.4	Commonality of Civil Aviation Legislation	0.4	0.4	-	-	Part of the study has been carried out by a short term expert within SATCC/TU.
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. Updating of data has been initiated.
4.0.7	Updating the Aeronautical Information Services	0.2	0.2	-	-	Financing is being sought. financing.
<u>Telecommunications</u>						
5.0.1	African Domestic Satellite System	1.0	1.0	-	-	The Study will await the result of P. 5.0.2.
5.0.2	Study on the Harmonization of the Satellite Communications	0.40	0.40	0.40	-	Ongoing study financed by Italy
Total		13.57	13.57	6.79	3.2	

+ including also projects where financiers have been approached or have shown interest, and projects where financing is otherwise under discussion.

TABLE 2 - MAPUTO PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project Title	Estimated Cost		Secured Financ. million USD	Funding under negot.+ million USD	Comments on: Financing Status Action
		Total	Foreign			
<u>Ports and Water Transport</u>						
3.5.1 (1)	Maputo Port. MOZAMBIQUE Feasibility Study on Improvement of the Entrance Channel	0.9	0.9	0.9	-	Financing is pledged by Denmark.
(2)	Coal Terminal at Matola phase 1 phase 2 phase 3	1.8 9.0 80.0	1.8 9.0 80.0	1.8 - -	- - -	Rehabilitation work in progress
(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.
<u>Railways</u>						
2.2.1 (1)	Rehabilitation of the Main Railway Line. BOTSWANA Gaborone - Southern Border	19.0	15.0	15.0	-	Section 1 and a part of section 2 are being financed by the People's Republic of China.
(2)	Francistown - Northern Border	15.0	12.0	3.0	9.0	Financing is being sought for section 2.
(3)	Gaborone - Francistown	80.0	64.0	-	64.0	Canada has been approached.
2.2.2	Rehabilitation of Railway Telecommunications Facilities. BOTSWANA	0.5	0.5	0.5	-	Sweden has agreed to finance the project. Work will commence in 1986
2.2.4	Renewal of Train Working System. BOTSWANA	5.0	4.8	5.0	-	Sweden has agreed to finance the project. Work will commence in 1986
2.2.5	Maintenance Depot for Botswana Railway. BOTSWANA	5.0	4.5	5.0	-	Denmark has agreed to finance the project.
2.3.1	Container Terminal with Customs Facilities. LESOTHO	1.4	1.0	-	1.0	A study financed by EEC has been completed. EEC has shown interest in financing the implementation.
2.3.2	Expansion of Oil Storage Facilities. LESOTHO	5.8	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 Mozambique Swaziland Railway Technical and Economic Study and Engineering Design	0.7	0.7	0.7	-	Study ongoing financed by Italy. A rehabilitation programme is expected to be initiated based on the findings of the study.
2.5.6 (2)	Railways in Southern Mozambique and Swaziland Study on Engineering for Bridges on Railways in Southern Mozambique. MOZAMBIQUE	0.2	0.2	-	0.2	It is expected that Canada will finance the project from the CIDA Fund (0.0.5)
(3)	Rehabilitation of the Maputo - Chicualacuala Railway phase 1 Emergency Programme: 80 km and Technical Assistance phase 2 Rehabilitation of Remaining 444 km	20.0 86.0	14.5 64.0	20.0 -	- 64.0	Financing secured from UK and Mozambique. A project description has been prepared. ADB has been approached for financing.

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TABLE 2 MAPUTO PORT TRANSPORT SYSTEM PROJECTS

Cont.

Project No.	Project Title	Estimated Cost USD million		Secured Financ. USD million	Funding under negot.+ USD million	Comments on: Financing Status Action
		Total	Foreign			
2.5.10	Wagon Rehabilitation CFM (SUL) MOZAMBIQUE	3.3	3.3	-	-	Financing is being sought.
2.6.1	Modification of Wagons and Wagon Maintenance, Swaziland Railway. SWAZILAND	1.2	0.9	-	-	Financing is being sought.
	<u>Roads</u>					
1.3.1	Upgrading of the Road Mhales Hoek - Quthing - Qachas Nek. LESOTHO	84.5	67.6	54.5	30.0	Ongoing work financed by USA/EEC and Lesotho Government. EEC and USA have been approached for financing the shortfall (USD 30 mill).
1.3.2	Upgrading and Reconstruction of the Road Taung - Mokhotlong - Sani Top. LESOTHO	45.0	36.0	-	-	Feasibility study and engineering design completed. (Financed by UK) Financing is being sought for implementation. EEC will be approached.
1.3.3	Upgrading of the Road Thaba Tseka - Taung - Mpiti LESOTHO	33.5	26.8	-	-	Feasibility study completed, financed by Canada. Financing is being sought for design and implementation.
1.3.4	Construction of a New Road Ramabanta - Semonkong - Sekake. LESOTHO	32.0	25.6	0.3	15.7	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 - Sekake.
1.3.5	Upgrading of the Road Mokhotlong - Oxbow. LESOTHO.	23.0	18.4	-	-	Design completed. Financing is being sought.
1.5.4	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 1985-86. Construction work will start in 1987.
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.	22.0	18.7	12.0	-	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	617.0	513.2	148.6	189.7	

* including also projects where financiers have been approached or have shown interest, and projects where financing is otherwise under discussion.

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TABLE 3 BEIRA PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project Title	Estimated Cost USD million		Secured Financ. USD million	Funding under negot.+ USD million	Comments on: Financing Status Action
		Total	Foreign			
<u>Ports and Water Transport</u>						
3.5.2	Increase in Capacity of the Port of Beira	165.2	329.8	31.7	37.5	Funds pledged by the Netherlands of which USD 25.7 mill. are allocated to sub-projects 1-3. USA, EEC and Denmark have expressed their interest in participating in the financing of the project.
(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 barges 2.5 million.
(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.
<u>Masterplan Projects</u>						
(4)	Service Port Facility	(3.6)	(3.1)	-	-	Operational 1986; financier sought.
(5)	Oil Terminal	(9.2)	(7.7)	-	-	Operational 1987; USA has been approached for financing
(6)	Sugar Cereals Terminal	(31.3)	(29.0)	-	-	Operational 1988; USA has been approached for financing
(7)	Multi-purpose Berths 4-5	(63.1)	(56.8)	-	-	Operational 1988; Financing sought
(8)	Dredging to CD-8	(9.5)	(8.6)	-	-	Ready end of 1987; " "
(9)	Cont./m.p, Berth 2-3	(17.8)	(16.0)	-	-	Early in 1989; " "
(10)	Railways, Non Coal Traffic	(17.8)	(14.3)	-	-	From 1985 to 1989; " "
(11)	Roads	(3.7)	(2.5)	-	-	From 1986 to 1990; " "
(12)	Reclamation New Coal Terminal	(40.3)	(36.3)	-	-	Ready end of 1990; " "
(13)	Channel Dredging CD-10	(21.6)	(19.5)	-	-	Planned for 1991; " "
(14)	Coal Terminal Phase 1-2	(81.8)	(73.6)	-	-	Operational 1993; " "
(15)	Coal Terminal Phase 3	(39.8)	(35.9)	-	-	Planned for 1999 " "
<u>Railways</u>						
2.4.1	Track Rehabilitation. Malawi Railways. MALAWI	20.0	13.0	3.0	10.0	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.
2.4.2	Supply of Railway Rolling Stock. MALAWI	9.0	9.0	3.0	6.0	USD 3 million secured from F. R. Germany. ADB has been approached for remaining part.
2.5.3	Rehabilitation of the Beira-Zimbabwe Railway. Dondo - Zimbabwe Border. MOZAMBIQUE	20.0	15.0	1.0	-	A study which covers spot alignments and regradings has been carried out. Financing is being sought for implementation of the project. USA has provided USD 1.0 million for emergency repairs.

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TABLE 3 BEIRA PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project Title	Estimated Cost USD million		Secured Financ. USD million	Funding under nego ⁺ . USD million	Comments on: Financing Status Action
		Total	Foreign			
2.5.4	Rehabilitation of the Beira - Malawi Railway. MOZAMBIQUE					
(1)	Section Beira - Dondo	21.0	14.7	0.3	0.3	Belgium has allocated funds for a study. ADB has also been approached. Financing of the implementation is being sought.
(2)	Section Dondo-Malawi Border	112.0	90.0	33.0	10.0	The section Dondo-Derunde (70 km) financed by Mozambique (11.3 mill) and GDR (3.2 mill). Parts of rehabilitation costs Dondo - Moatiza financed by Italy (18.5 mill). USD 79.0 million is being sought. ADB and Canada have been approached for USD 10.0 million (Dona Ana - Malawi Border). Work has commenced on the section Dondo - Derunda.
2.5.1.1	Rehabilitation of Steam and Diesel Locomotives and Conversion of Beira Workshop. CFM(CENTRO). MOZAMBIQUE	4.1	4.1	4.1	-	USA is initiating a pilot project in 1985 (USD 4.1 million). Additional funds will be needed based on studies to be made during the pilot project.
	<u>Roads</u>					
1.4.2	Study on the Upgrading of the Road Blantyre-Mulanje / Milange - Mocuba MALAWI / MOZAMBIQUE	1.1	1.1	-	1.1	Financing for the feasibility and engineering study is being sought. TOK have been prepared. CIDA will be approached.
1.5.1	Rehabilitation of the Tete-Cassacatiza Road, Section Matundo-Chiuta. MOZAMBIQUE	6.5	5.0	-	-	Financing is being sought for rehabilitation.
1.5.3	Rehabilitation of the Road Beira - Chimoio - Zimbabwe Border. MOZAMBIQUE	21.0	13.7	-	13.7	Feasibility study financed by Australia completed. Financing of implementation is being sought. Denmark and Australia have been approached.
1.9.3	Study on the Upgrading of the Eastern End of the Road Harare - Mutare - Mozambique Border. ZIMBABWE	0.1	0.1	-	0.1	ADB is considering the financing of of feasibility study.
	Total	580.0	495.5	77.2	78.7	

+ including also projects where financiers have been approached or have shown interest, and projects where financing is otherwise under discussion.

TABLE 4 NACALA PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project Title	Estimated Cost		Secured	Funding	Comments on:
		USD million	Financ. under			
		Total	Foreign	million	negot.+	Financing
				million	USD	Status
					million	Action
	<u>Ports and Water Transport</u>					
3.5.3	Design and Construction of Container Terminal for the Port of Nacala. MOZAMBIQUE	12.0	12.0	12.0	-	Ongoing project financed by Finland.
	<u>Railways</u>					
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.
	<u>Roads</u>					
1.4.1	Upgrading of the road Mangochi - Chiponde / Mandimba - Mitande. MALAWI / MOZAMBIQUE	0.2	0.2	-	-	Financing is being sought.
1.8.6	Rehabilitation of the road Lusaka - Chipata ZAMBIA	34.0	20.4	0.7	19.7	Engineering study ongoing financed by Denmark (USD 0.7 million). ADB has shown interest.
	Total	281.2	220.6	104.6	19.7	

* including also projects where financiers have been approached or have shown interest, and projects where financing is otherwise under discussion.

TABLE 5 DAR ES SALAAM PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project Title	Estimated Cost		Secured Financ.	Funding under negot.+ USD	Comments on: Financing Staats Action
		USD million	million			
		Total	Foreign	million	USD million	
<u>Port and Water Transport</u>						
3.7.2	Development of the Port of Dar es Salaam, TANZANIA	152.2	125.5	90.9	-	
(1)	Kurasini Oil Terminal Rehabilitation	(2.3)	(1.6)	(2.3)	-	Financing secured by Norway. Under implementation.
(2)	Improvement of Harbour Entrance Channel	(45.4)	(41.0)	-	-	Financing being sought.
(3)	Construction of Container Terminal Berths 10 and 11 Berth 9 Rehabilitation	(17.6)	(13.6)	(17.6)	-	IDA has secured financing
(4)	Construction of Crain Facility	(5.0)	(2.4)	(5.0)	-	IDA has secured financing
(5)	Ubungu Container Depot	(16.7)	(13.4)	(16.7)	-	The Netherlands has secured financing.
(6)	Lighterage Quay and Belgian Wharf	(3.7)	(2.6)	(3.7)	-	Financing secured by Sweden. Financing being sought.
(7)	Construction of a Tug Berth	(6.7)	(3.4)	-	-	Financing being sought.
(11)	Rehabilitation of Berths 1-8	(5.2)	(3.6)	-	-	Sweden has secured financing
(8)	Rehabilitation of Berths 1-8	(16.7)	(11.0)	(16.7)	-	Under implementation.
(9)	Purchase of Shore-based Container and General Cargo Handling Equipment	(22.4)	(22.4)	(22.4)	-	Nordic Countries have secured financing.
(10)	Purchase of Floating Craft	(3.5)	(3.5)	-	3.5	Canada has been approached.
(10)	Technical Assistance to THA and	(3.5)	(3.5)	(3.5)	-	Financing has been secured by IDA (Consultancy Services). Norway has secured financing.
(12)	Improvement of Bandari College	(2.5)	(2.5)	(2.5)	-	
(13)	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)	-	0.3	Canada has been approached.
(14)	Study on Container Handling in Tanzania and on TAZARA	(0.5)	(0.5)	(0.5)	-	Norway has secured financing.
<u>Railways</u>						
2.7.1	TAZARA 10 Year Development Plan Projects	156.9	134.6	-	65.5	The previous TAZARA Projects have been revised according to the "10 Year Development Plan" prepared by the Authority in co-operation with the Technical Unit. A Technical Conference for Donors was held 11-12 April 1985. Statements of interest in various projects were made by the following financiers:
CE:1	Rehabilitation of Quarries	(3.2)	(2.5)	-	(3.2)	Sweden and EEC
CE:2	Permanent Rectification of Landslides	(12.0)	(8.6)	-	(12.0)	ADB
CE:3	Mechanized Track Maintenance	(14.9)	(10.5)	-	(14.9)	EEC and Austria
CE:4	Rail Welding	(16.4)	(6.7)	-	(16.4)	Austria
CE:5	Rail Burn Repairs	(0.5)	(0.3)	-	(0.5)	Sweden and Finland
CE:6	Terminal Facilities at New Kapiri Mposhi	(0.3)	-	-	(0.3)	TAZARA
CE:7	Railway Link TAZARA-Mpungu Port, Zambia	(0.4)	(0.4)	-	(0.4)	ADB
ST:1	Solar Power Panels	(0.8)	(0.7)	-	(0.8)	Denmark
ST:2	Back-up HF Radio Link	(0.3)	(0.3)	-	(0.3)	Denmark
ST:3	Teleprinters	(0.1)	(0.1)	-	(0.1)	Denmark
ST:4	Feasibility Study of Future Telecommunications System	(0.2)	(0.2)	-	-	
ST:5	Automatic Train Stops	(4.5)	(3.5)	-	-	
ST:6	Track Circuiting	(1.6)	(1.1)	-	-	
ME:1	Locomotives	(46.0)	(45.3)	-	-	
ME:2	Goods Wagons	(43.0)	(45.8)	-	(10.0)	Sweden
ME:3	Trolleys and Trailers	(1.6)	(1.6)	-	-	
ME:4	Handling Equipment for Goods Depot	(0.8)	(0.8)	-	(0.8)	Finland

ANNEX 1

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TABLE 5 DAR ES SALAAM PORT TRANSPORT SYSTEM PROJECTS

Cont.

Project No.	Project Title	Estimated Cost USD million		Secured Financ. USD million	Funding under negot.+ USD million	Comments on: Financing Status Action
		Total	Foreign			
ME:5	Rescue Crane and Rerailing Equipment	(1.8)	(1.8)	-	(1.8)	EEC and Finland
ME:6	Wheel Lathes	(2.7)	(2.5)	-	(2.7)	
ME:7	Mechanical Equipment Work- shops	(1.0)	(1.0)	-		
GM:1	Technical Assistance to the Head Office	(2.7)	(2.2)	-	-	
GM:2	Manpower Development Plan and Training Facilities	(1.3)	(0.7)	-	(1.3)	Norway
2.8.2	Wagon Repair Tracks and Tools, Zambia Railways. Z/ZMBIA	0.2	0.1	-	-	Financing is being sought.
	<u>Roads</u>					
1.4.3	Road Link Karonga-Mbeya, MALAWI/TANZANIA	14.5	11.6	0.5	-	EEC has agreed to finance a full engineering study and has been approached for fin- ancing the implementation.
1.7.3	Rehabilitation/Strengthening of the TANZAM Highway. TANZANIA	62.0	40.0	-	40.0	Financing of the rehabilitation work is to be finalized through the World Bank. Norway has ex- pressed interest in co-financing.
1.8.8	Rehabilitation of the TANZAM Highway. ZAMBIA	58.0	41.0	1.1	-	Study ongoing financed by Denmark.
Total		443.6	352.7	92.5	109.3	

* including also projects where financiers have been approached or have shown interest, and projects where financing is otherwise under discussion.

TABLE 6 LOBITO PORT TRANSPORT SYSTEM PROJECTS

Project No.	Project Title	Estimated Cost USD million		Secured Financ. USD million	Funding under negot.+ USD million	Comments on: Financing Status Action
		Total	Foreign			
<u>Port and Water Transport</u>						
3.1.1	Master Plan for the Port of Lobito. ANGOLA	0.7	0.7	0.7	-	Financed by Denmark. The study completed in September 1985.
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)	-	0.2	Terms of Reference have been prepared. Italy has expressed interest in financing the study
(2)	Construction of a Grain Terminal and Silos	(11.0)	(11.0)	(5.6)	-	Financing partly secured by local funds. Financing being sought for civil works.
(3)	Modernisation and Enlargement of Electrical Systems	(5.5)	(5.5)	(3.0)	-	Financing partly secured by local funds. Financing being sought for remainder.
(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)	-	-	Financing to be sought.
<u>Railway</u>						
2.1.1	Rehabilitation of the Benguela Railway. ANGOLA	182.0	182.0	14.0	163.0	Part of the project has been implemented. Project description has been prepared and submitted to ADB. Preparations to proceed with the implementation shall be continued.
<u>Roads</u>						
1.8.1	Angola-Zambia Road Link ZAMBIA	0.2	0.2	0.2	-	The feasibility study financed by EDF is presently adjourned.
Total		210.9	206.3	329.0	163.2	

+ including also projects where financiers have been approached or have shown interest, and projects where financing is otherwise under discussion.

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TABLE 7 INTRA-REGIONAL SURFACE TRANSPORT SYSTEM PROJECTS

Project No.	Project Title	Estimated Cost		Secured Financ. USD million	Funding under negot.+ USD million	Comments on: Financing Status Action
		Total	Foreign			
<u>Ports and Water Transport</u>						
3.5.4	Navigational Aids. MOZAMBIQUE	10.2	9.8	5.3	-	Financing of first phase secured by Sweden.
3.5.4 (1)	Buoy Handling and Maintenance Vessel. MOZAMBIQUE	4.0	4.0	-	4.0	Denmark has been approached.
3.5.5	Port Staff Training Institute. MOZAMBIQUE	6.8	6.2	-	6.2	Norway has been approached.
3.7.1	Development of Navigation on Lake Malawi/Niassa. TANZANIA	0.4	0.4	0.4	-	Financing secured by Denmark.
3.8.1	Navigability on the Zambezi and Shire Rivers	0.3	0.3	-	0.3	UNDP has been approached for financing (UNDP pledge). Terms of Reference are being prepared.
<u>Railway</u>						
2.2.3	Trans-Kalahari Railway Study BOTSWANA	0.8	0.7	0.8	-	The study is completed. Financed by local funds.
2.5.8	Change over to Roller Bearings and Reconditioning of Wagons (CFM). MOZAMBIQUE	14.0	11.2	-	11.2	Sweden has been approached and has made an appraisal
2.5.9	Facilities, Materials, Spares and Equipment for Workshops and Repair Track Wagon Maintenance. MOZAMBIQUE	16.0	12.8	-	-	Financing is being sought.
2.8.1	Feasibility Study for New Rail Links Connecting Zambia with Mozambique and Zimbabwe	0.5	0.5	-	-	Financing is being sought.
2.9.1	Repair Tracks and Wagon Maintenance Equipment National Railways of Zimbabwe. ZIMBABWE	1.1	0.6	1.1	-	Financing secured by local funds.
<u>Roads</u>						
1.1.1	Study of the Road N'Zeto - Soyo. ANGOLA	1.1	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	-	-	Terms of Reference have been prepared. EEC to be approached.
1.5.2	Rehabilitation of the Zimbabwe-Tete- Malawi Road MOZAMBIQUE	20.0	15.0	20.0	-	Construction works financed by Kuwait Fund. Construction has commenced in 1983.
1.5.5	Study on Unity Bridge and Access Roads. MOZAMBIQUE/TANZANIA	0.9	0.9	-	-	TOR have been prepared. ADB has been approached for financing.
1.7.1	Rehabilitation and Upgrading of the Mtwara-Songea-Mbamba Road. TANZANIA	44.0	33.0	-	-	Financing is being sought for review study on section Masadi - Sangea and for works on section Sangea - Mbamba Bay.

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TABLE 7 INTRA-REGIONAL SURFACE TRANSPORT SYSTEM PROJECTS

Cont.

Project NO.	Project Title	Estimated Cost		Secured Financ. million USD	Funding under negot.+ million USD	Comments on: Financing Status Action
		Total	Foreign			
1.8.2	Study on Kazungula Bridge and the Pandamatenga - Victoria Falls Road. BOTSWANA/ZAMBIA/ZIMBABWE	0.4	0.4	0.2	0.2	Appraisal report prepared by Norway. UNDP has allocated USD 0.2 mill for the project (UNDP pledge) Financing of the shortfall is being considered by ADB. Canada will also be approached.
1.8.3	Rehabilitation of the Lusaka-Kafue-Livingstone-Kazungula Road. ZAMBIA	40.0	27.5	5.7		Work in progress on Livingstone - Zimba section, financed by Norway (USD 5.0 million). Study on remaining sections ongoing financed by Denmark. (USD 0. million).
1.8.4	Rehabilitation of the Road Kafue - Chirundu. ZAMBIA	16.5	13.0	16.5	-	Ongoing project, financed by USA.
1.8.5	Rehabilitation for the N'ola - Lusaka Road. ZAMBIA	28.0	16.8	0.6	16.2	Engineering study ongoing financed by Denmark (USD 0.6 million). ADB has been approached for financing rehabilitation work.
1.8.7	Improvement of the Road Lusaka - Mongo	30.0	18.0	-	18.0	ADB has been approached for financing rehabilitation work.
1.9.2	Upgrading of the Road Plumtree - Botswana Border. ZIMBABWE	2.5	1.3	2.5	-	Financing secured by local funds.
Total		240.1	176.1	53.1	57.2	

+ including also projects where financiers have been approached or have shown interest, and projects where financing is otherwise under discussion.

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TABLE 8 CIVIL AVIATION PROJECTS

Project No.	Project Title	Estimated Cost USD million		Secured Financ. USD million	Funding under negot.+ USD million	Comments on: Financing Status Action
		Total	Foreign			
4.3.1	New Airport at Maseru. LESOTHO	42.0	32.0	42.0	-	Ongoing project financed by OPEC, EEC, Abu Dhabi, BADFA, Saudi Arabia, ADB, Kuwait Fund and Finland.
4.6.1	Development of Matsapha Airport. SWAZILAND	38.0	32.0	26.8	-	Control tower, training and telecoms are financed by FEC (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. EEC will be approached.
4.8.1	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	-	0.3	Terms of Reference have been prepared. ADB has been approached for financing of feasibility study. Canada will be approached.
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	-	-	Initiation of the project will await the results of a master plan study. Financing is to be sought.
4.9.3	Modernization of AFTN - Message Switching Centre at Harare International Airport, ZIMBABWE	0.6	0.6	-	-	EEC will be approached.
Total		83.7	67.7	68.8	0.3	

+ including also projects where financiers have been approached or have shown interest, and projects where financing is otherwise under discussion.

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TABLE 9 TELECOMMUNICATION PROJECTS

Project No.	Project Title	Estimated Cost USD million		Secured Financ. USD million	Funding under negot.+ USD million	Comments on: Financing Status Action
		Total	Foreign			
5.1.1	Satellite Earth Standard A. ANGOLA	14.3	11.4	-	0.3	Canada will be approached for financing of a feasibility study from the CIDA Fund.
5.1.2	Expansion of the International Telecommunication System. ANGOLA	38.0	32.4	38.0	-	Ongoing project, financing secured by ADB. Completion in 1988.
5.1.3	Microwave Link Luanda-Cabinda. ANGOLA	5.0	4.0	-	-	Financing being sought.
5.2.2	ITSC Gaborone. BOTSWANA	5.1	4.1	5.1	-	Ongoing project. Financing is secured by Sweden. RFS 1986.
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.
5.3.2	Rural Communication System, LESOTHO	0.6	0.6	-	-	EEC will be approached.
5.4.2	Digitalization of the Trunk Network. MALAWI	10.0	9.0	-	9.0	Norway has expressed interest in the project.
5.5.1	National/Regional Satellite Communication System. MOZAMBIQUE	19.9	19.5	17.5	2.0	First part of the project financed by Kuwait Fund, France and suppliers credits. Canada has shown interest in financing the second part.
5.5.3	National Telecommunications Development Project with Connections to Neighbouring Countries (Regional Part). MOZAMBIQUE	100	90	43	-	The figures indicated are relevant only to the regional part of the project. The financial commitments 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 ongoing.
(1)	ITSC in Beira	(3.7)	(3.3)	(3.3)	-	Included in the phase I of 5.5.3. Financing secured by ADB
(2)	New Telex Exchange in Beira	(2.5)	(2.3)	-	(2.3)	F.R.Germany has been approached for financing of the telex exchange.
(3)	Microwave Link Tete - Blantyre	(8.1)	(7.2)	-	(7.2)	Optional extension to Zimbabwe is being studied. Norway is considering to finance this link including the extension to Zimbabwe. RFS 1988
(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)	(3.4)	-	The section up to Chimio is included in phase I of 5.5.3. Provisional smaller capacity link installed from Mxiluvo to Mutare.
(6)	Microwave Link Nampula - Mtwara	(18.0)	(14.4)	-	-	Implementation in the later phases of 5.5.3.
(7)	ITSC at Maputo	(2.2)	(2.2)	(2.2)	-	Included in phase I of 5.5.3. Financing secured by Sweden.

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TABLE 9 TELECOMMUNICATION PROJECTS

Cont.

Project No.	Project Title	Estimated Cost USD million		Secured Financ. USD million	Funding under negot.+ USD million	Comments on: Financing Status Action
		Total	Foreign			
5.6.2	ITSC at Ntondozi. SWAZI-LAND	4.7	4.2	4.5	-	Financing secured by Italy. Implementation about to start.
5.6.3	Expansion of the National Microwave Trunk Network. Swaziland	4.7	4.0	4.7	-	Ditto
5.6.4	Provision of Group and Channel Translating Equipment for 20 Supergroups at Ntondozi for the Combined National and International Switching Centre (ITSC). SWAZILAND	1.4	1.3	1.4	-	Ditto
5.7.1	Microwave Link Mbeya - Keronga - Mzuzu. TANZANIA /MALAWI	9.9	8.9	9.9	-	Ongoing project financed by Norway and Sweden. RFS 1986.
5.7.2	Extension of ITSC Capacity TANZANIA	4.3	3.9	-	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	-	0.3	Canada will be approached for financing a feasibility study from the CIDA Fund
5.8.2	Expansion of the Earth Station at Mwembeshi. ZAMBIA	21.0	15.8	-	15.8	Canada and ADB have shown interest in co-financing the project.
5.8.3	Microwave Terminal at Chin-gola to complete the Link Zambia/Zaire. ZAMBIA	0.2	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. ZAMBIA	4.0	3.6	-	-	Financing is being sought.
5.8.5	Microwave Link in the North Western Province, Zambia	14.5	10.4	14.5	-	Ongoing project financed by Norway. RFS Mid 1985
5.8.6	Microwave Link Kariba-(Zimbabwe)-Siavonga-(Zambia) Lusaka. ZAMBIA	1.5	1.5	-	-	Financing being sought.
Total		270.05	235.35	138.8	40.8	

+ including also projects where financiers have been approached or have shown interest, and projects where financing is otherwise under discussion.

Annex 2

**REVIEW OF THE
REGIONAL PROGRAMME
OF PROJECTS**

Annex 2
(1)

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Annex 2

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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 1985.

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

Annex 2

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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.

Annex 2

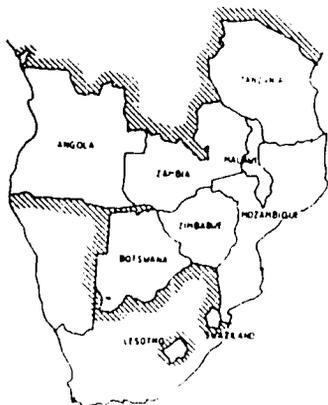
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MULTIMODAL PROJECTS

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0.0.1	Regional	Technical Assistance to SATCC Technical Unit	Ongoing
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0.0.2 OPERATIONAL CO-ORDINATION DEVELOPMENT PROGRAMME

Estimated Costs:

USD 4.0 million (1984 prices)
 USD 4.0 million (current prices)

Financing:

Secured : USD 1.1 million
 Requested : USD 2.9 million
 Foreign currency part : 100%

Executing Agency:

Southern Africa Transport and
 Communications Commission

Start:

1983

Duration:

Until 1990

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 : Operational co-ordination has high priority. The Technical Unit of SATCC is directly involved in the initiation of these 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 :

- (1) Road Infrastructure
- (2) Road Traffic and Transport
- (3) Railway Administration
- (4) Wagon Standardization and Spare Parts (Railways)
- (5) Civil Aviation
- (6) National Airlines
- (7) Port Administration
- (8) Shipping development
- (9) Telecommunications.

It is expected that operational co-ordination of postal services and meteorology will be initiated in 1986.

Status : In 1982-1983 the work was initiated and meetings were convened for the first six activities. In 1984 operational co-ordination of port administrations was initiated. Australia has financed operational co-ordination related to civil aviation and national airlines, up to June, 1985. DANIDA provides technical assistance to activities related to railways and road infrastructure and NORAD to road traffic and transport and port administration.

Action : Additional funds are sought to finance operational co-ordination after 1985 up to 1990.

August 1985

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0.0.3 TRAINING DEVELOPMENT PROGRAMME



Estimated Costs:
 USD 0.35 million (1984)
 USD 0.35 million (current prices)

Financing:
 Requested : USD 0.35 million
 Foreign currency part : 100%

Executing Agency:
 Southern Africa Transport and
 Communications Commission

Start:
 1984

Duration:
 2 years

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

Contents : The project includes those 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. The activities included in the project are listed below. Preliminary cost estimates are indicated in brackets:

- (1) Road traffic and transport training (US dollars 200 000)
- (2) Preparation of a telecommunications training project for Mozambique. (completed)
- (3) Training course in national telecommunications network planning (US dollars 150 000)

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.

Status : Terms of Reference have been prepared for (1) and (3). The World Bank, Italy and Sweden have been approached for financing.

Action : Conclusion of financial agreements for both outstanding activities.

August 1985

0.0.3(5) SATELLITE COMMUNICATION TECHNOLOGY COURSE FOR SATA MEMBER COUNTRIES



Estimated Costs:
USD 0.15 million

Financing:
Requested : USD 0.15 million
Foreign currency part : 100%

Executing Agency:
Malawi Post and Telecommunication Corporation in Cooperation with SATCC

Start:
1985

Duration:
3 months

Scope : To provide detailed and complete understanding of communication by satellite technology to operation and maintenance staff presently working or intending to work at the satellite Earth Stations in SATA Member Countries.

Contents : Satellite Earth facilities are present in all SATCC Countries and an important plan of expansion will be implemented in the second part of the eighties. In two years time frame, the Eastern, Central and Southern Countries will establish a network of direct satellite links besides other international links. Lack of competent local operation and maintenance personnel is one of the major problems of concern affecting operation of Satellite Earth Stations in SATA Member Countries. Hence, this type of training is initiated in order to eventually ensure total localization and therefore minimizing operational costs, without degrading performance efficiency.

The course will be attended by two trainees from each of the nine Member Countries.

Status : The syllabus of the Course has been prepared by the Telecommunication Administration of Malawi in the name of SATA.

Action : To submit the project to the financier.

August 1985

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:

Secured : USD 1.3 million

Requested : USD 0.7 million

Executing Agency:

UNCTAD/SATCC

Start:

1979 (main project 1980), extension 1984

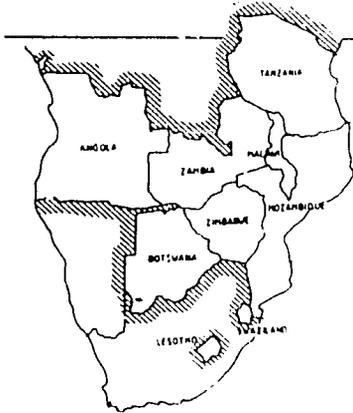
Duration:

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 oriented 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 0.5 million is expected to come from UNDP funds earmarked for SATCC. USD 0.6 million from UNDP regional funds and USD 0.1 million from UNDP special fund for land-locked countries.
- 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 1985

0.0.5 SATCC TECHNICAL SERVICES FUNDS



Estimated Costs:
USD 5.0 million

Financing:
Secured : USD 5.0 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 : A Memorandum of Understanding has been signed with CIDA on Canadian Dollars 6 million (USD 4.6) for a three years period (1985-87). Two Canadian consultancy firms have been engaged, one for Telecommunications and one for Surface Transport and Civil Aviation.

An agreement has been signed 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 are to identify tasks to be implemented within this project.

August 1985

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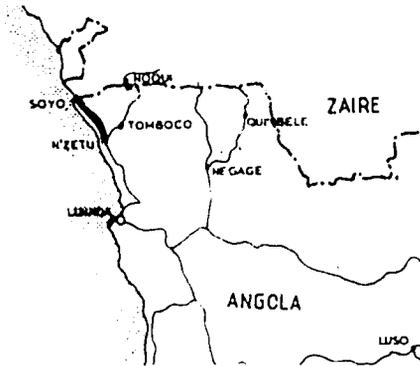
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1.1.1 STUDY OF THE ROAD N'ZETO-SOYO

Estimated Costs:

USD 1.0 million (1985 prices)

USD 1.0 million (current prices)

Financing

Requested : USD 1.1 million

Foreign currency part : 100%

Executing Agency:

Ministry of Construction, Angola

Start:

1986

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.

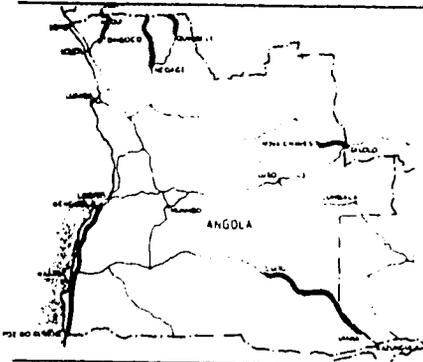
The construction of a new road of adequate standard is a high priority for the Government. This is justified by the economic importance of the area of influence of the road, including existing oil storage and loading facilities, ongoing off-shore oil exploration and the imminent start of exploitation 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 1985

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:

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.

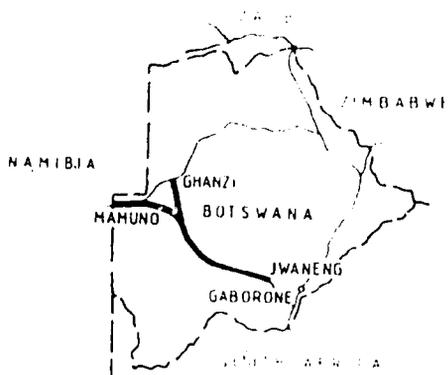
Contents : These projects aim at providing links with the neighbouring countries. Earlier studies exist in some sections.

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 : Stand by.

August 1985

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



Estimated Costs:
USD 0.6 million (1985 prices)

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

Executing Agency:
Ministry of Works and Commu-
cations, Botswana

Start:
1986

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 Fan (approx. 80 km)

The proposed road Jwaneng - Border post 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.K.L. (UK) and reasonable quantities of gravel (mainly calcareous) 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, pavement, 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 BSP 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.

August 1985

1.3.1 UPGRADING OF THE ROAD MOHALES' HOEK - QUTHING - QACHAS NEK

Estimated Costs:

USD 84.5 million (current prices)

Financing:

Secured : USD 54.5 million

Requested : USD 30 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 this top priority 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 const- ructed 36 km
Nature of works	Upgrading	Reconstruction	Realignment
Design standard	Bitumen	Gravel	Gravel
Design width	6.7+2x1.5	6 m	6 m
Cost, USD million	26.5	40	18
Financing secured or in progress	EEC, GOL 13.5	USAID, GOL 23	USAID, GOL 18

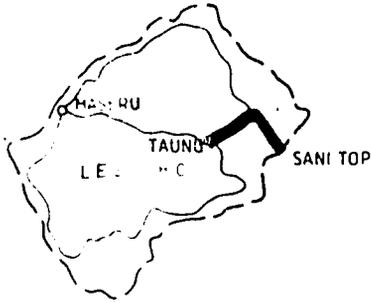
Status : Work started in Jan. 1985 on Mohales Hoek-Mekaling Bridge section (25.8km) on EEC financing. Design completed. Reconstruction commenced.

Construction works completed.

Action : ADB, EEC and USAID have been approached for financing the shortfall of approx. USD 30 million.

August 1985

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

Estimated Costs:

USD 31 million (1985 prices)

USD 45 million (current prices)

Financing:

Requested : USD 45 million

Foreign currency part : 80 %

Executing Agency:

Ministry of Works, Lesotho

Start:

1988

Duration:

3 years

Scope : To reconstruct the existing track to classified bitumen road standard, 118 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.

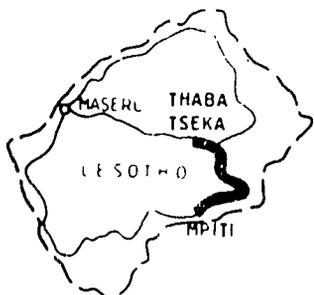
During the last year some spot improvement works have been carried out on the road section Thabang-Sani Pass in order to upgrade the road to all weather standard. These works have been financed by the World Bank under the Third Highway Project. As a result the traffic on this road section has increased 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 to be sought.

August 1985

1.3.3 UPGRADING OF THE ROAD THABA TSEKA - TAUNG - MPITI



Estimated Costs:
USD 31 million (1985 prices)
USD 33.5 million (current prices)

Financing:
Required : USD 33.5 million
Foreign currency part : 80%

Executing Agency:
Ministry of Works, Lesotho

Start:
1986 design and 1st stage
1993 2nd stage

Duration:
1.5 years 1st stage
2.5 years 2nd stage

Scope : To upgrade to all weather standard the road Thaba Tseka - Taung - Mpitl, 145 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 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 considers the road to be important and proposes the implementation in two stages:

1. Temporary improvement to be carried out soonest, cost estimate 11.5 million USD (1985 prices)
2. Final upgrading works to be implemented starting 1993, cost estimate 19 million USD (1985 prices).

The cost of engineering design is estimated at 530.000 USD.

Action : Financing to be sought now for the design of the road and the implementation of the temporary improvement (1st stage).

August 1985

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1.3.4 CONSTRUCTION OF A NEW ROAD RAMABANTA - SEMONKONG - SEKAKE



Estimated Costs:
USD 32 million (1985 prices)

Financing:
Secured : USD 0.3 million (design of first section)
Required : USD 31.7 million
Foreign currency part : 80%

Executing Agency:
Ministry of Works, Lesotho

Start:
1990 Ramabanta - Semonkong
1995 Semonkong - Sekake

Duration:
3 years total both sections

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 (0.3 million USD). The implementation of this section is estimated to cost USD 15.7 million and the design and implementation of the section Semonkong - Sekake USD 16 million (1985 prices).

Action : Government has approached KfW for financing of the section Ramabanta - Semonkong, which is more urgent of the two sections. Financing to be followed up.

August 1985

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1.3.5 UPGRADING OF THE ROAD MOKHOTLONG - OXBOW



Estimated Costs:
USD 23 million (1985 prices)

Financing:
Required : USD 23 million
Foreign currency part : 80 %

Executing Agency:
Ministry of Works, Lesotho

Start:
1989

Duration:
3 years

Scope : Upgrading to bitumen/gravel standard of the road section Mokhotlong-Oxbow, 110 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.

The project includes upgrading to bitumen standard of the sections Oxbow - Letseng and Sani Junction - Mokhotlong, and to gravel standard of the section Letseng - Sani Junction.

Status : The engineering design has been completed under the World Bank Third Highway Project.

Action : Financing to be sought for upgrading work.

August 1985

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



Estimated Costs:
USD 0.2 million (1985 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 1989

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 : Objectives 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 Mangoché 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 four wheel 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 1985

1/8

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



Estimated Costs:

USD 1.0 million (1985 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:

1987 (study)

Duration:

18 months

Scope : Feasibility and engineering studies on the rehabilitation and up-
grading 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 stand-
ard. The road link will serve the trade between 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 consump-
tion 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. The construction costs are roughly
estimated at USD 70 million.

Status : Terms of reference have been prepared for feasibility and engineer-
ing studies. Engineering designs exist for about 100 km of the
Mozambique section.

Action : Financing for the studies is being sought.

1.4.3 ROAD LINK KARONGA - MBEYA

Estimated Costs:

USD 12 million (1985 prices)
 USD 14.5 million (current prices)

Financing:

Secured : USD 0.5 million
 Foreign currency part : 80%

Executing Agency:

Ministry of Works and Supplies,
 Malawi

Start:

1986

Duration:

2 years

Scope : Provision of a permanent bitumen standard link between northern Malawi and Tanzania.

Contents : The 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.

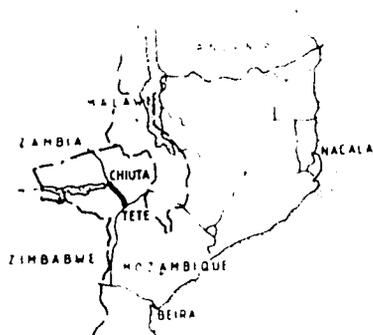
Only about 50 km of road and three bridges are needed to link up with the existing bitumen road from Itungi to Mbeya in Tanzania.

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. Design started in June 85. Meanwhile, emergency improvement works have been completed financed by UK (1.3 million USD) to allow, as a temporary solution, the use of the road.

Action : Completion of the engineering design of the permanent link.
 Securing of financing for the construction of the new road (EEC).

August 1985

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

Estimated Costs:

USD 6.0 million (1985 prices)

USD 6.5 million (current prices)

Financing:

Requested : USD 6.5 million

Foreign currency part : 75%

Executing Agency:Ministry of Construction and Water
MozambiqueStart:

1987/88

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 Matundo - 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.

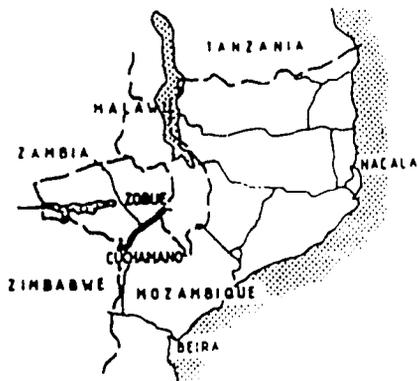
The traffic can be estimated to be in the magnitude of 100 - 200 vehicles per day.

Status : The construction of the road Chiuta - Cassacatiza is finalized. The section Matundo - Chiuta remains to be rehabilitated.

Action : Financing of the project to be sought.

 August 1985

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 : 1985

Duration:
 2.5 years (road)

Scope : Reinforcements and rehabilitation of the road Zimbabwe border at Cuchamano - Tete - Moatize - Zobe 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 borders and 600 vehicles per day in the vicinity of Tete. Of the international traffic a major part consists of heavy vehicles.

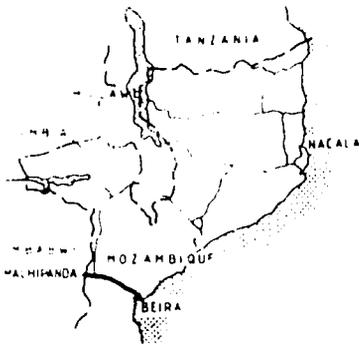
For the connecting road within Malawi between the border and Blantyre, reconstruction work is in progress.

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.

The bridgeworks commenced in April 1983, and were completed November 1984. Contract for road works concluded in December 1984, and works started.

Action : Carry out the works.

1.5.3 REHABILITATION OF THE ROAD BEIRA - CHIMOIO - ZIMBABWE BORDER



Estimated Costs:
USD 18.2 million (1984 prices)
USD 21 million (current prices)

Financing:
Required : USD 21 million
Foreign currency part : 65 %

Executing Agency:
Ministry of Construction and
Water, Mozambique

Start:
1986

Duration:
3 years

Scope : Rehabilitation of the entire length of the road between Beira and the Zimbabwe border at Machipanda, 282 km, and establishment of maintenance capacity.

Contents : The rehabilitation programme consists of resealing of 161 km, resheeting of 97 km and reconstruction of 24 km of the road. In addition, the project includes establishment of maintenance capability in order to enable the road to be adequately maintained.

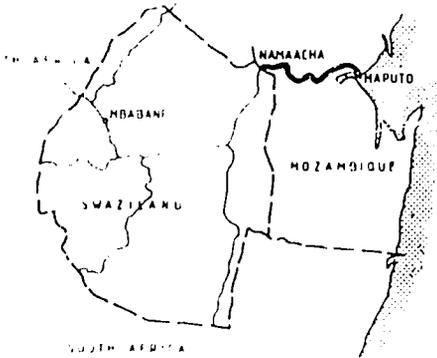
The recently concluded feasibility study shows that the programme is economically and financially highly justified for commencement as soon as possible. The study included preliminary engineering. Given the nature of the project, the technical assistance component included in the implementation and the local capabilities, no separate design phase is required.

Status : Feasibility study including preliminary engineering, financed by Australia, completed in early 1985. Approach has been made to Australia for technical assistance and preliminary approach to Denmark for participation in financing of implementation.

Action : Securing of financing to enable implementation to start soonest.

August 1985

1.5.4 REHABILITATION OF THE ROAD CONNECTION TO SWAZILAND



Estimated Costs:
USD 14 million (1984 prices)
USD 19.5 million (current prices)

Financing:
Secured : USD 19.5 million
Foreign currency part : 80 %

Executing Agency:
Ministry of Construction and Water
Mozambique

Start:
1985 design, 1987 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.

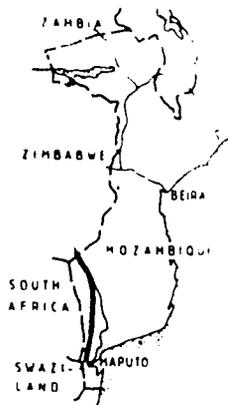
The project includes rehabilitation, reinforcement and upgrading of the road.

Status : A feasibility study has been completed, and consultant for design selected. Financing has been secured from Sweden, including works.

Action : Engineering design 1985-86. Tender invitation and contract negotiations 1986. Construction works 1987-89.

August 1985

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

Estimated Costs:

USD 0.4 million (1985 prices)

USD 0.4 million (current prices)

Financing:

Required : USD 0.4 million

Foreign currency part : 90 %

Executing Agency:Ministry of Construction and Water,
MozambiqueStart:

1988

Duration:

8 months

Scope : To study the feasibility of a road link connecting Maputo area to Chicualacuala at the Mozambique/Zimbabwe border (approximately 500 km), including improvement of its continuation in Zimbabwe, Sango - Rutenga.

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.

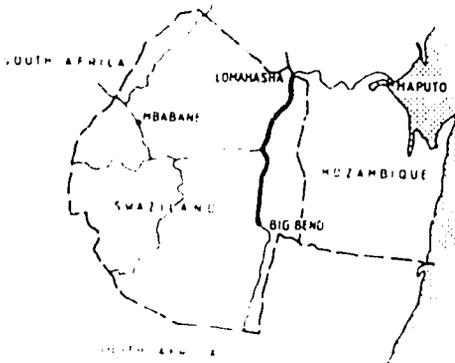
In Zimbabwe, a feasibility study has recently been made concerning the improvement of the road link between Sango and Rutenga. This road is a direct continuation of the proposed road in Mozambique, linking Chicualacuala to the main road Harare - Beit Bridge. The study, financed by the Italian Government, shows low viability of this project on its own. However, this road is a part of the eventual connection Zimbabwe - Maputo, and should thus be reviewed in this context.

Status : Terms of Reference have been prepared, to be reviewed.

Action : Financing to be sought for the feasibility study.

August 1985

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



Estimated Costs:

USD 21 million (1984 prices)
 USD 22 million (current prices)

Financing:

Secured : USD 12 million
 Required : USD 10 million
 Foreign currency part : 85 %

Executing Agency:

Ministry of Works, Power and Communications, Swaziland

Start:

1984 (Section 1)
 1992 (Section 2)

Duration:

2 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.

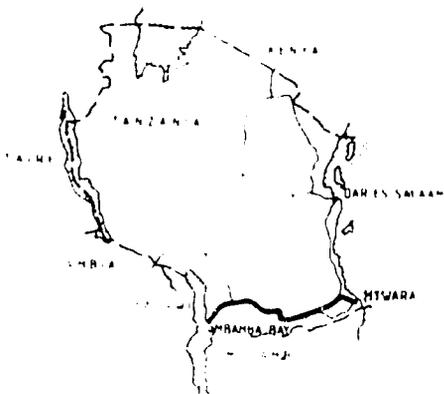
The road section Lomahasha - Siteki has traffic volumes between 175 and 700 vehicles per day. A feasibility study has shown internal rates to return between 10 and 29% for different sections of the road. However, the development of the Mozambique - bound traffic seems to be underestimated in this study.

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. Estimated completion date for this section is February 1986.

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

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

Estimated Costs:

USD 31 million (1985 prices)
 USD 44 million (current prices)

Financing:

Required : USD 44 million
 Foreign currency part : 75 %

Executing Agency:

Ministry of Communications and
 Works, Tanzania

Start:

1988

Duration:

3 years

- Scope** :
- To review and update studies and design for the section Masasi - Songea, 445 km
 - To rehabilitate and upgrade the section Songea - Mbamba Bay, 160 km.

Contents : The main aim of the Southern Trunk Road as a regional project is to carry traffic to and from the port of Mtwaru and serve as a link to the port and shipping services on Lake Malawi at Mbamba Bay. (i.f. project No. 3.7.1), serving the Southern part of Tanzania.

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 Mtwaru - 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.

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 lake shore plain. As a trunk road, it should be upgraded to at least surface dressed standard (6.5 m + 2 x 1.5 m). 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. Earlier cost estimate for works on the whole road Masasi - Mbamba Bay was USD 250 million.

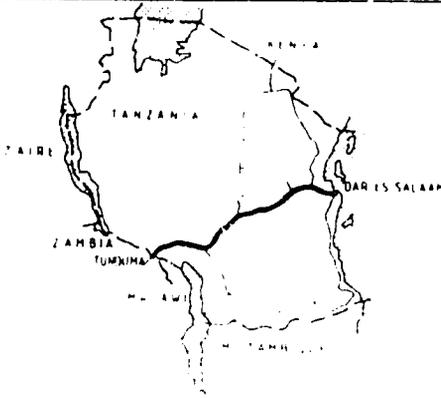
Status : Detailed design and tender documents for the whole project were prepared in 1975. A review of the design and cost estimate is required.

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. A 3 month pre-investment study for section Songea - Mbamba Bay was completed in July 1985.

Action : Financing to be sought for :

- Review study on section Masasi - Songea, USD 1 million.
- Works on section Songea - Mbamba Bay according to recommendations of the pre-investment study.

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:

1986

Duration:

3 1/2 years

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

Contents : The Tanzania 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 6.7 m 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. The World Bank has appraised the project in May/June 1985 and has noted the need for co-financing. NORAD has expressed interest in supporting the building up of maintenance capacity for the road.

Action : Financing of the rehabilitation work to be finalized through the World Bank. Tendering process to be started soonest.

August 1985

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:

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.

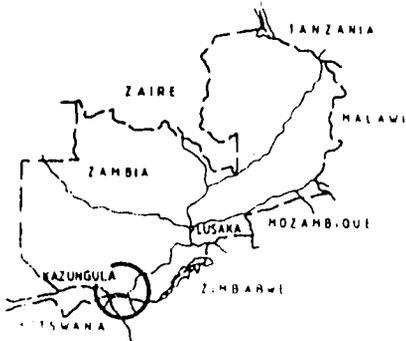
Construction costs are estimated roughly at USD 90 million (1983 prices).

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 : Stand by.

August 1985

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



Estimated Costs:
USD 0.4 million (1985 prices)

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

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

Start:
1986

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.

The road via Kazungula is a feeder link to the Trans-East African Highway passing via Lusaka - Livingstone - Bulawayo - Francistown.

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. A provisional allocation of USD 0.2 million from UNDP regional funds has been made for this project. The 3-partite steering committee of the project met in January 1985 and reiterated the support of the three countries for the project.

The Terms of Reference for the study are being reviewed by the countries concerned and SATCC.

Action : Complementary financing for the feasibility study is being sought.

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

Estimated Costs:

USD 30 million (1985 prices)
 USD 40 million (current prices)

Financing:

Secured : USD 5.7 million
 Requested : USD 34.3 million
 Foreign currency part :
 60 % (rehabilitation)
 100 % (engineering)

Executing Agency:

Ministry of Works and Supply,
 Zambia

Start:

(1982 Zimba - Livingstone)
 1987

Duration:

4 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 1985 prices.

Status : Financing has been secured from Norway for remaining parts of the Zimba - Livingstone section. Denmark is financing feasibility and engineering studies of other sections (US dollars 0.7 million), together with 3 other roads in Zambia (projects 1.8.5, 1.8.6, 1.8.8). Studies are expected to be completed in early 1986.

Action : Completion on ongoing works and studies and secure financing for further works.

August 1985

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,
ZambiaStart:

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 90 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.

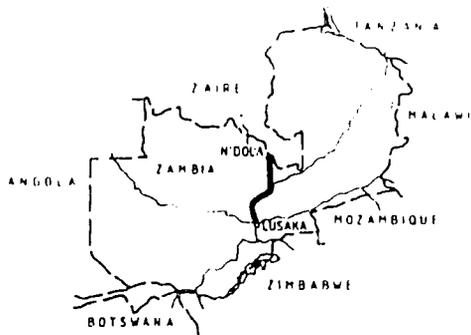
Portions of the road are in a bad condition with failures in the pavement and settlements due to bad underground. The road needs strengthening and partly reconstruction.

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 1985

1.9.5 REHABILITATION OF THE NDOLA - LUSAKA ROAD

Estimated Costs:

USD 22 million (1985 prices)
 USD 28 million (current prices)

Financing:

Secured : USD 0.6 million
 Requested : USD 27.4 million
 Foreign currency part : 60 %

Executing Agency:

Ministry of Works and Supply,
 Zambia

Start:

1987

Duration:

2.5 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.

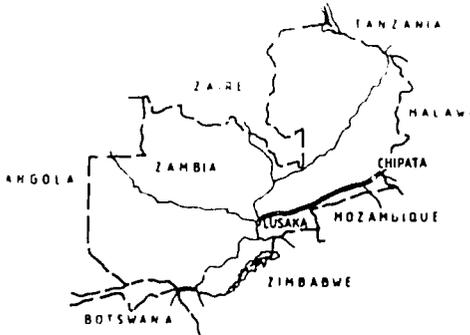
At present, only normal maintenance is being carried out as and when funds are available.

Status : Some departmental investigations have taken place on the condition of the pavement. Denmark is financing feasibility and engineering studies (USD 0.6 million) together with three other roads in Zambia (Projects 1.8.3, 1.8.6, 1.8.8), expected to be completed in early 1986. ADB has been approached for financing of the works.

Action : Complete the studies and secure financing for necessary works.

August 1985

1.8.6 REHABILITATION OF THE LUSAKA - CHIPATA ROAD



Estimated Costs:
 USD 25 million (1985 prices)
 USD 34 million (current prices)

Financing:
 Secured : USD 0.7 million
 Requested : USD 33.3 million
 Foreign currency part : 60 %

Executing Agency:
 Ministry of Works and Supply
 Zambia

Start:
 1988

Duration:
 3 years

Scope : To carry out surveys on the condition of the Lusaka - Chipata road, to assess the treatment required and to carry out the necessary 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 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.

Denmark is financing feasibility and engineering studies (USD 0.7 million) together with three other roads in Zambia (projects 1.8.3, 1.8.5 and 1.8.8), expected to be completed in early 1986. The ADB co-ordination Committee has selected the project for Bank participation.

Action : Complete the studies and secure financing for necessary work.

August 1985

1.8.7 IMPROVEMENT OF THE ROAD LUSAKA - MONGU



Estimated Costs:
USD 30 million (1985 prices)

Financing:
Required : USD 30 million
Foreign currency part : 60 %

Executing Agency:
Ministry of Works and Supply,
Zambia

Start:
1990

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 works.

Contents : The Lusaka - Mongu road, M9, is 583 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 200 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 kilometers 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 : Secure financing and carry out necessary studies (cf. studies on projects 1.8.3, 1.8.5, 1.8.6 and 1.8.8).

August 1985

1.8.8 REHABILITATION OF THE TANZAM HIGHWAY IN ZAMBIA

Estimated Costs:

USD 45 million (1985 prices)
 USD 58 million (current prices)

Financing:

Secured : USD 1.1 million
 Requested : USD 57 million
 Foreign currency part : 70%

Executing Agency:

Ministry of Works and Supply,
 Zambia

Start:

1987

Duration:

4 years

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 and to carry out the necessary works.

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.

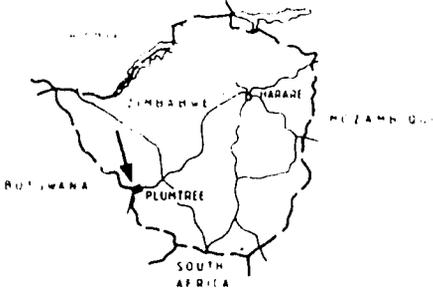
The cost of the rehabilitation works is at present roughly estimated at USD 45 million.

Status : Denmark is financing feasibility and engineering studies (USD 1.1 million), together with three other roads in Zambia (projects 1.8.3, 1.8.5, 1.8.6). The studies are expected to be completed in early 1986.

Action : Complete the studies and secure financing for necessary works.

August 1985

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:

Secured : USD 2.5 million

Foreign currency part : 50 %

Executing Agency:

Ministry of Transport, Zimbabwe

Start:

1985

Duration:

6 months

- 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 6.7 km 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 7 are heavy vehicles.
- Status** : Construction is underway, with financing by the Government of Zimbabwe. Scheduled completion December 1985.
- Action** : Complete the works.

August 1985

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



Estimated Costs:
USD 0.1 million (1985 prices)

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

Executing Agency:
Ministry of Transport, Zimbabwe

Start:
1987

Duration:
4 months

Scope : Pre-investment 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 study at this stage is basically to establish future land reservation needs in the Mutare area to accommodate the expected increasing heavy traffic with special regard to growing export and import transports over the port of Beira.

The project road area 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 2 - 22 heavy vehicles.

The estimated cost of 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 has recently been completed.

Action : Government has prepared Terms of Reference for the study.

Follow-up with ADB on financing of the study.

August 1985

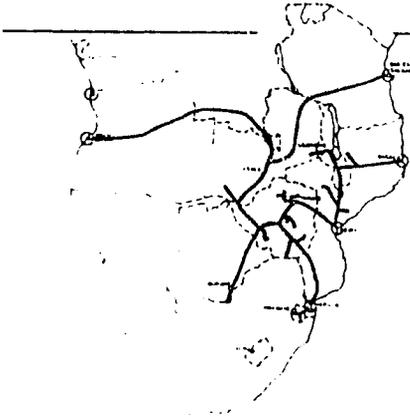
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2.5.5	Mozambique	Rehabilitation of the Nacala - Malawi Railway	65
2.5.6 (1)	Mozambique	Feasibility Study and Preliminary Engineering for Rehabilitation and Electrification of Railways in Southern Mozambique and Swaziland	completed
2.5.6 (2)	Mozambique	Study and Engineering for Bridges on Railways in Southern Mozambique	66
2.5.6 (3)	Mozambique	Rehabilitation of the Maputo - Chicualacuala (Limpopo) Railway	67
2.5.7	Mozambique	Feasibility Study on the Reorganization of Maputo and Matola Yards	completed
2.5.8	Mozambique	Change over to Roller Bearings, and Reconditioning of Wagons, CFM, Mozambique	68
2.5.9	Mozambique	Facilities, Materials, Spares and Equipment for Workshops and Repair Tracks, Wagon Maintenance, Mozambique	69
2.5.10	Mozambique	Wagon Rehabilitation CFM (Sul) Mozambique	70

2.5.11	Mozambique	Rehabilitation of Steam and Diesel Locomotives and Conversion of Beira Workshop CFM (Centro) Mozambique	71
2.6.1	Swaziland	Modification of Wagons and Wagon Maintenance Swaziland Railways	72
2.7.1	Tanzania/ Zambia	TAZARA 10 - Year Development Plan Projects	73-74
2.8.1	Zambia	Feasibility Study for new Rail Links connecting Zambia with Mozambique and Zimbabwe	75
2.8.2	Zambia	Wagon Repairs Tracks and Tools, Zambia Railways	76
2.9.1	Zimbabwe	Repair Tracks and Wagon Maintenance Equipment, National Railways of Zimbabwe.	77

2.0.2 STUDY ON RAILWAY TRAINING PROGRAMMES REGIONAL



Estimated Costs:
 USD 1.1 million (1985 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:

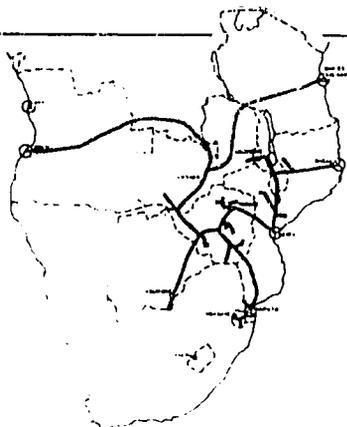
- (a) to make recommendations for filling vacancies with foreign experts for a limited period and the simultaneous training of local counterparts;
- (b) to make recommendations for the limited engagement of foreign experts to assist, guide, and instruct the local staff and possibly train them for the 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. Mobilization for the study by a German Consultant started in July 1985.

Action : The study is expected to be completed in 1986.

2.0.4 STUDY ON RAILWAY TELECOMMUNICATIONS AND SIGNALLING, REGIONAL



Estimate/ Costs:
 USD 0.1 million (1985 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:
 1986

Duration:
 3 months

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

Contents : In connection with the Railway Stock Study P. 2.0.1, the Consultants concluded that an overall review of the existing railway telecommunication and signalling 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. 0.0.2, 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:

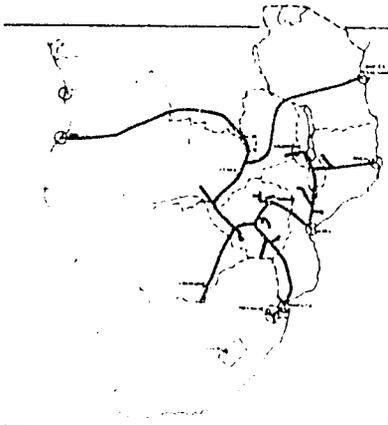
- a phased regional development plan;
- the most appropriate technology; and
- international technical standards for communication between railway administrations.

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.

August 1985

2.0.5 STUDY ON RAILWAY MANUFACTURE REGIONAL



Estimated Costs:
 USD 0.35 million (1984 prices)
 USD 0.35 million (current prices)

Financing:
 Requested : USD 0.35 million
 Foreign currency part : 100%

Executing Agency:
 Southern Africa Transport and
 Communications Commission

Start:
 1986

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.

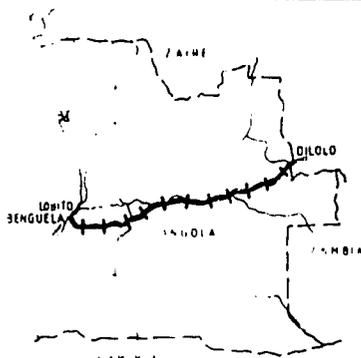
Status : Terms of Reference for the Study have been prepared. CIDA has expressed interest in financing the Study.

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

August 1985

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2.1.1 REHABILITATION OF THE BENGUELA RAILWAY



Estimated Cost:
 USD 144.4 million (1985 prices)
 USD 182.0 million (current prices)

Financing:
 Secured : USD 14.0 million
 Requested : USD 168.0 million
 Foreign currency part : 100 %

Executing Agency:
 Caminho de Ferro de Benguela, CFB

Start:
 1981

Duration:
 10 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.

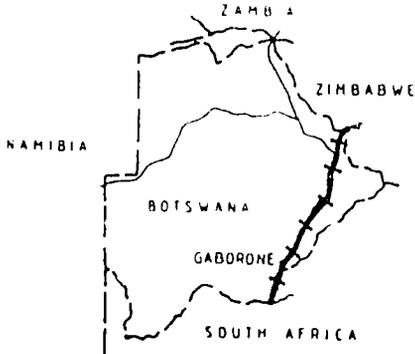
To complete the programme for phases 1 and 2, the following works and acquisitions should be carried out in 1985 - 1999:

- (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 750 wagons and coaches initiated already in 1975 including conversion to roller bearings (USD 16.8 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 11.8 million);
- (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 3.2 million); and
- (8) Wagon repair tracks, building and hard standing plus maintenance equipment at Bie, Luena and Luau (USD 0.5 million);
- (9) Acquisition of stocks (USD 4.2 million).

Status Additional funds are needed to complete the project.

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) USD 13.0 million
- (3) USD 63.0 million (1985 prices)
- (1) USD 19.0 million
- (2) USD 15.0 million
- (3) USD 80.0 million (current prices)

Financing:

Secured : USD 18.0 million
 Requested : 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 (1220 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 Pkwe (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 or improvements of some bad section is urgently needed in the following order of priority : (1) Gaborone - Southern Border (120 km), (2) Francistown - Northern Border (85 km) and (3) Gaborone - Francistown. Rehabilitation of sections (2) and (3) might consist of spot improvements.

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). The works are in progress on section (1).

CIDA has shown interest in the project. An appraisal mission to Botswana has been made by CIDA. A more through study is expected to be financed by CIDA in the near future concerning sections (2) and (3).

Action : Additional financing is being sought.

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2.2.2 REHABILITATION OF RAILWAY TELECOMMUNICATION FACILITIES, BOTSWANA

Estimated Costs:

USD 0.5 million (1985 prices)
 USD 0.5 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 100 exchange with a maximum capacity of 128 lines, to replace the present 30-line PABX in Gaborone.

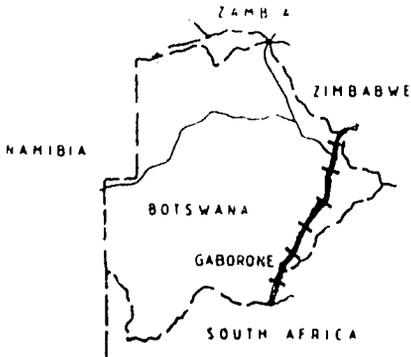
This project might be combined with P. 2.2.4, Renewal of Train Working System.

Status : Design specifications have been prepared in co-operation with SIDA, National Railways of Zimbabwe and Botswana Government.

Action : The implementation of the project is expected to start in 1985 financed by SIDA.

August 1985

2.2.4 RENEWAL OF TRAIN WORKING SYSTEM, BOTSWANA

Estimated Costs:

USD 5.0 million (1985 prices)
 USD 5.0 million (current prices)

Financing:

Secured : USD 5.0 million
 Foreign currency part : Approx.
 95%

Executing Agency:

Ministry of Works and Communica-
 tions

Start:

1985

Duration:

2 years

Scope : Renewal of the train working system.

Contents : The present system of train working in Botswana is by 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 introduction of a new system for the whole line from the Southern to the Northern Border is being studied. from the Southern to the Norther Border.

The rehabilitated overhead telecommunication lines (P. 2.2.2) will be used also for signalling purposes. The points will remain manually operated.

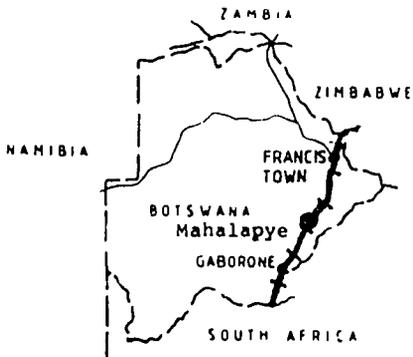
This project might be combined with P. 2.2.2 if the design specifications for that project are adequate also for train working.

Status : Detailed plans are being prepared. SIDA will finance the project.

Action : The implementation will start in 1985.

August 1985

2.2.5 MAINTENANCE DEPOT FOR BOTSWANA RAILWAY

Estimated Costs:

USD 4.5 million (1985 prices)
 USD 5.0 million (current prices)

Financing:

Requested : USD 5.0 million
 Foreign currency part : 90 %

Executing Agency:

Ministry of Works and Communi-
 cations

Start:

1985

Duration:

2 years

Scope : To provide facilities and equipment for basic maintenance of locomo-
 tives 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. In addition the smaller wagon repair track at Palapye shall be provided with buildings and hardstanding.

The break-down of the costs at current prices is as follows:

- Depot building	USD 1.2 million
- Office and amenity block	USD 0.2 million
- Civil engineering works	USD 1.9 million
- Equipment for Depot	USD 1.0 million
- Break-down train and equipment	USD 0.6 million
- Improvements to Pelapye repair track	USD 0.1 million

Status : A project description with cost estimates has been prepared by Transmark Consultants. Recommendations concerning wagon repairs and maintenance are included also in the Final Report of the Study of Railway Rolling Stock, Project No. 2.0.1, by Kampsax-Swederail. An appraisal survey has been carried out by DANIDA.

Action : DANIDA is expected to finance the project to be completed by the end of 1986.

2.3.1 CONTAINER TERMINAL WITH CUSTOMS FACILITIES IN MASERU



Estimated Costs:
 USD 1.3 million (1985 prices)
 USD 1.4 million (current prices)

Financing:
 Required : USD 1.4 million
 Foreign currency part : 70%

Executing Agency:
 Ministry of Transport and Communi-
 cations

Start:
 1986

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 (1000 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 has been made by a German consultant financed by EEC in 1984.

Action : It is expected that EEC will finance the implementation of the project.

August 1985

2.3.2 EXPANSION OF OIL STORAGE FACILITIES IN LESOTHO

Estimated Costs:

USD 5.0 million (1985 prices)

USD 5.8 million (current prices)

Financing:

Requested : USD 5.8 million

Foreign currency part : 100%

Executing Agency:

Ministry of Water, Energy and Mining

Start:

1986

Duration:

3 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.

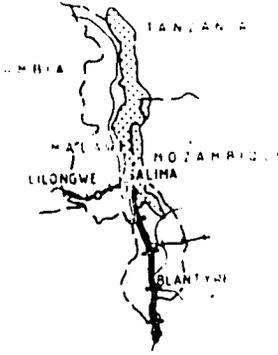
At present only about two weeks supplies of oil products can be stored in Maseru. In case of interruptions in deliveries the country would have serious problems. Therefore additional storage capacity to provide for 3 months strategic reserve is badly needed.

Status : SIDA has been approached for funding of the preparation of designs with costing. Report has been completed.

Action : The Government is considering which priority ranking should be assigned to this project.

August 1985

2.4.1 Track Rehabilitation, Malawi Railways



Estimated Costs:
 USD 16.0 million (1985 prices)
 USD 20.0 million (current prices)

Financing:
 Secured : USD 3.0 million
 Requested : USD 17.0 million
 Foreign currency part : 65 %

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, and building of a repair track at Nayuci, border station on Nacala line.

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 Railway lines are in good shape equipped with 40 kg longwelded rails on concrete sleepers.

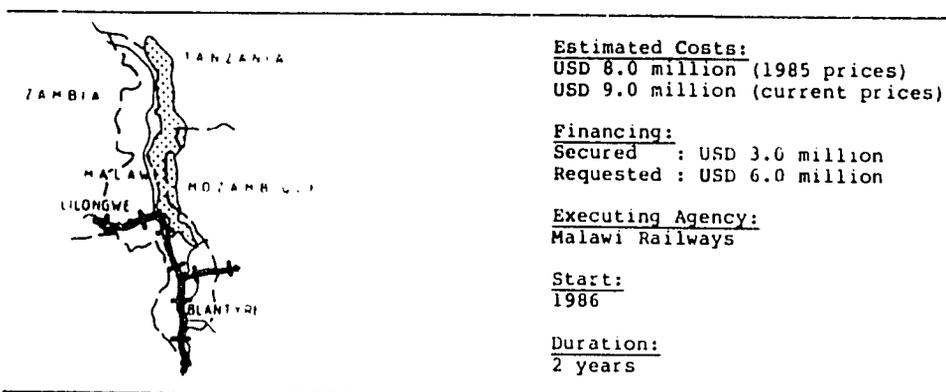
Related to the rehabilitation the plan concrete sleeper factory at Salima has been reopened. The factory was closed in 1980 when the new line between Salima and Mchinji was completed.

To produce sleepers for the above rehabilitation and for normal replacements a production of about 150 000 units in three years is planned. The repair track at Nayuci will serve the international traffic to and from the Port of Nacala (USD 0.1 million).

Status : A study on Malawi Railways has been completed by Coopers and 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. Building of a repair track of Nayuci is recommended in the Final Report of the Railway Rolling Stock Study, Project No. 2.0.1, by Kampsax-Swederail.

Action : It is expected that the project will be financed by the United Kingdom and the Government of Malawi.

2.4.2 SUPPLY OF RAILWAY ROLLING STOCK, MALAWI



Estimated Costs:
 USD 8.0 million (1985 prices)
 USD 9.0 million (current prices)

Financing:
 Secured : USD 3.0 million
 Requested : USD 6.0 million

Executing Agency:
 Malawi Railways

Start:
 1986

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 769 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 and 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.

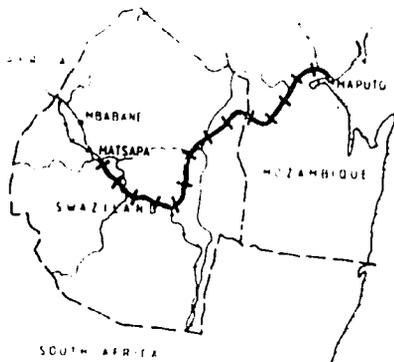
The Federal Republic of Germany has earmarked DM 13.0 million for Malawi projects. One third of this amount will be used for road haulage equipment and the rest for railways. In the first place 30 wagons are being acquired from the Federal Republic of Germany. The second phase is planned to include the 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 (1985 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.

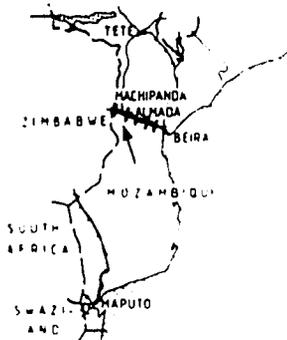
Status : An Italian consultant has been engaged financed by the Government of Italy.

Action : A rehabilitation programme is expected to be initiated based on the findings of the study.

August 1985

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2.5.3 Rehabilitation of the Beira - Zimbabwe Railway/Dondo - Zimbabwe Border



Estimated Costs:
 USD 17.0 million (1985 prices)
 USD 20.0 million (current prices)

Financing
 Secured : USD 1.0 million
 Requested : USD 20.0 million
 Foreign currency part : 75 %

Executing Agency:
 DNPCF

Start:
 1986

Duration:
 3 years

Scope : Emergency repairs to the (Beira) Dondo - Machipanda (Zimbabwe border) railway line and study on track improvements and motive power requirements for the future.

Contents : The project consists of the following parts:

	USD million
(i) Emergency programme :	
(a) technical assistance	0.5
(b) relaying 88 km next to Zimbabwe border, and renewal of ballast	9.9
(c) regrading 10.66 km	0.8
(d) realignment 60.15 km	4.8
(ii) Feasibility study on track improvements and motive power requirements (steam, diesel, electric) in the future with cost benefit analyses and implementation programme	
Total	<u>17.0</u>

The 315 km (Beira) Dondo - Machipanda (Zimbabwe Border) railway has 40 kg/m rails on timber sleepers, except on the 88 km section next to the Border where 30 kg/m rails on timber and steel sleepers are used. This section is in a poor condition and needs immediate rehabilitation. There are some steep gradients, up to 25 %, on the line and some sharp curves (100 m) affecting operations and maintenance. By spot regradings and realignments a ruling gradient of 15 % can be reached and the sharpest curves eliminated.

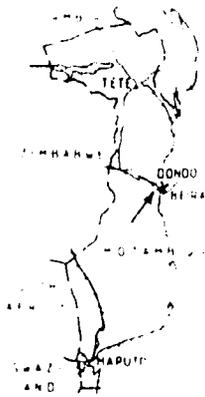
On the above grounds an emergency programme has been presented above to improve the worst length of 88 km and a study suggested for further improvements in the remaining length to cope with the anticipated traffic in the future.

Status : A study which covers the above 88 km section and spot realignments and regradings was carried out in 1982 by Mott, Hay and Andersson International Ltd. USAID has provided USD 1.0 million for emergency repairs. A 10-Year Development Plan for Beira Corridors is being prepared.

Action : Additional funds are being sought for the implementation of the project.

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2.5.4(1) REHABILITATION OF THE BERIA - MALAWI RAILWAY / BEIRA - DONDO

Estimated Costs:

USD 17.0 million (1985 prices)
 USD 21.0 million (current prices)

Financing:

Secured : USD 0.3 million
 Requested : USD 20.7 million
 Foreign currency part : 70 %

Executing Agency:

National Directorate of Railways
 DNPCF

Start:

1987

Duration:

4 years (1-11)

Scope : Rehabilitation, upgrading, signalling (and doubling at a later stage) of the Beira - Dondo section of the Beira - Malawi (Zimbabwe) railway.

Contents : The project consist of the following parts :

- (i) study and engineering for the complete renewal and signalling of the existing track and doubling of the track at a later stage (USD 0.5 million);
- (ii) total rehabilitation and provision of locally controlled signalling of the existing track and provision of underground cable link for telecommunications; and
- (iii) doubling of the track in the future, when the traffic demand justifies it.

The 28 km stretch Beira - Dondo is common for the Malawi and Zimbabwe lines. The track has 12 m long, fishplated 40 kg/m rails on main lines and 30 kg/m rails on loops and sidings in the yards fastened with coach screws to timber sleepers in stone ballast. There is no signalling system at present.

The track needs total rehabilitation to be able to cope with the anticipated traffic in the future. It has been estimated, taking into account the planned dense commuter traffic, that about 40 pairs of trains will be operated on this section in 1990's.

UIC 54 kg/m longwelded rails on monobloc concrete sleepers with Pandrol fastenings will be used. Ballast will be produced at the quarry at Chilulu. New quarry equipment is already at the site which will have to be organized for operations. A concrete sleeper factory, financed by Italy, is being built for the rehabilitation of the Moatize (Malawi) line. This factory can provide sleepers also for the Beira - Dondo section. Accessories, like shouldered, HTS wires and all fastenings, should be provided by this project.

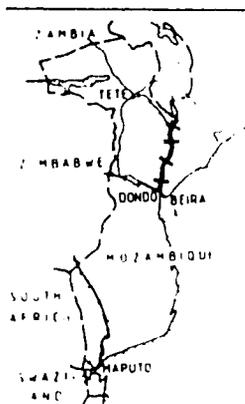
The plan includes a complete renewal of the existing line, loops and turnouts, installation of a signalling system using interlocked panels. Signalling equipment (in part) already stored in Beira, and Maputo will be examined for part utilization in installation of signalling and telecommunications.

Status : The Belgian Government has allocated USD 0.3 million for a study. A Belgian team prepared an appraisal report in 1982. A study and engineering and implementation of the Project is now needed. ADB has been approached for funds.

Action : Funding of the Study and engineering is being sought (USD 0.5 million) as the first step for the implementation of the project.

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2.5.4(2) REHABILITATION OF THE BEIRA - MALAWI RAILWAY / DONDO - MALAWI BORDER

Estimated Costs:

USD 93.0 million (1985 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 1986

Scope : Rehabilitation of the Dondo-Dona Ana-Malawi border line, 331km.

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 for a sleeper factory.

The rehabilitation works started in 1982.

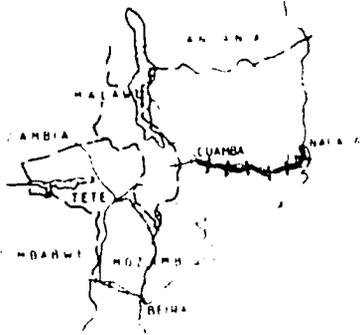
The African Development Bank and CIDA have been approached for funds for the rehabilitation of the Dona Ana-Malawi section.

A 10-Year Development Plan for Beira Corridors is being prepared.

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.

August 1985

2.5.5 REHABILITATION OF THE NACALA - MALAWI RAILWAY



Estimated Costs:
 USD 195.0 million (1985 prices)
 USD 235.0 million (current prices)

Financing:
 Secured : USD 91.9 million
 Requested : USD 143.0 million
 Foreign currency part : 80%

Executing Agency:
 National Directorate of Railways,
 DNPCF

Start:
 1983

Duration:
 7 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.

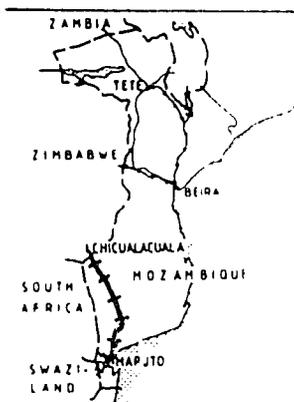
The project will be implemented in two stages the first phase being the upgrading of the Nacala - Nampula section (200 km) by the end of 1985. The whole project is planned to be completed by the end of 1987. The cost estimate in 1984 prices for the first phase is 95 million and for the whole project 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 works are going on.

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 (1985 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:
 1986

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 Swede-rail Consulting AB, revealed that design and completion drawings for most of the bridges 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. CIDA has been approached for funds.

Action : It is expected that CIDA will finance the project.

August 1985

2.5.6(3) REHABILITATION OF THE MAPUTO - CHICUALACUALA (LIMPOPO) RAILWAY

Estimated Costs:

USD 82.0 million (1985 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:

1985

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 restrictions are applied on 141 km of the line.

Mott, Hay and Anderson LTD have completed a Feasibility Study on the Rehabilitation of the Maputo - Chicualacuala Line and Cwederail 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 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.

2.5.8 CHANGE OVER TO ROLLER BEARINGS AND RECONDITIONING OF WAGONS, CFM - MOZAMBIQUE

Estimated Costs:

USD 12.0 million (1985 prices)
 USD 14.0 million (current prices)

Financing:

Requested : USD 14.0 million
 Foreign currency part : 80 %

Executing Agency:

National Directorate of Railways,
 DNPCF

Start:

1986

Duration:

3 years

Scope : Completion of the change over of the wagon fleet of the Mozambique Railways to roller bearings and reconditioning of such wagons.

Contents : The project consists of the following parts:

- | | |
|--|-------------------|
| (i) Conversion of 2000 wagons to roller bearings | USD 8.3 million ; |
| (ii) Repairs to bodies, floors, under-gear, breakgear, buffers etc. and painting (the same wagons) | USD 3.7 million ; |

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.

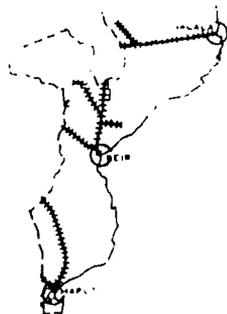
The modern roller bearing box needs no inspection on the line and needs no maintenance between the general overhauls, i.e. in 8-10 years. Its estimated life time is 25-30 years. Additional savings will be gained through increased availability of wagons and higher axle loads and speeds. Less locomotive traction is needed, specially when starting. Thus longer trains can be operated with roller bearings.

At the same time other repairs should be carried out to make the wagons suitable for international traffic.

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. A separate study has been carried out by Swederrail concluding that the investment can accept a capital cost of 11 per cent. An appraisal survey financed by SIDA has also been made.

Action : The project has been submitted to SIDA for consideration.

2.5.9 FACILITIES, MATERIALS, SPARES AND EQUIPMENT FOR WORKSHOPS AND REPAIR TRACKS, WAGON MAINTENANCE - MOZAMBIQUE



Estimated Costs:
 USD 14.0 million (1985 prices)
 USD 16.0 million (current prices)

Financing:
 Requested : USD 16.0 million
 Foreign currency part : 80 %

Executing Agency:
 DNPCF

Start:
 1987

Duration:
 3 years

Scope : Improvements to wagon maintenance facilities based on the recommendations of the Final Report of the Study of Railway Rolling Stock, Project No. 2.0.1.

Contents : The project consists of the following parts :

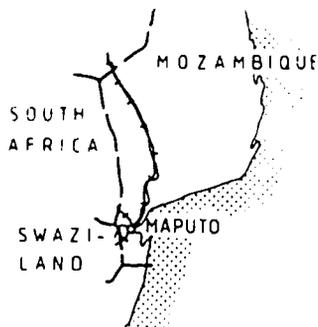
	USD
(i) Maputo Workshop equipment Repair track (hardstanding, accommodation, equipment)	25 000 330 000
(ii) Beira Workshop equipment, including installation Repair track	481 000 210 000
(iii) Nampula Combined wagon workshop and repair track Equipment, including installation Buildings	561 000 739 000
(iv) Repair tracks (buildings hardstanding and equipment) for CFM(SUL): Cuis de Mineiro, Marchava, Mabalane, Magude, Chicualacuala and Ressano Garcia (at USD 110 000 each)	660 000
(v) Repair tracks for CFM(Centro) at Sena, Inhaminga, Dondo, Nhamatanda, Gondola and Moatize	660 000
(vi) Repair tracks for CFM(NORTE) at Nacala, Cuamba and Lichinga	330 000
(vii) Spares, materials and hand tools for carrying on the repair and maintenance activities	<u>10 000 000</u>
Total	13 996 000

Wagon hire charges paid by CFM amount to about USD 8.5 million per annum. By improved maintenance facilities wagon hire charges can be considerably reduced, turn round times reduced and wagon availability improved.

Status : Project descriptions have been prepared by CFM based on the Study of Railway Rolling Stock, Project No. 2.0.1.

Action : Financing is being sought.

2.5.10 WAGON REHABILITATION - CFM (SUL) MOZAMBIQUE



Estimated Costs:
 USD 3.0 million (1985 prices)
 USD 3.3 million (current prices)

Financing:
 Requested : USD 3.3 million
 Foreign currency part : 100 %

Executing Agency:
 DNPCF

Start
 1986

Duration:
 1 year

Scope : Rehabilitation of and salvage of spares from about 600 wagons which are not operational at present.

Contents : There are about 600 wagons which for various reasons are not operational within CFM(SUL). These wagons represent 20 % of the declared wagon fleet of CFM (SUL).

It has been estimated by Kampsax-Swederail Consultants in their Final Report of the Study of Railway Rolling Stock, Project No. 2.0.1, that about 200 of the above wagons could be made serviceable after a routine overhaul using spares from wagons which are to be scrapped. It would be possible to recover following components : bogies, bronze from plain bearing wagons, wheels, couplings, break linkages, break handles, roller bearings, doors etc.

The project should be implemented using a contractor with the following cost estimates:

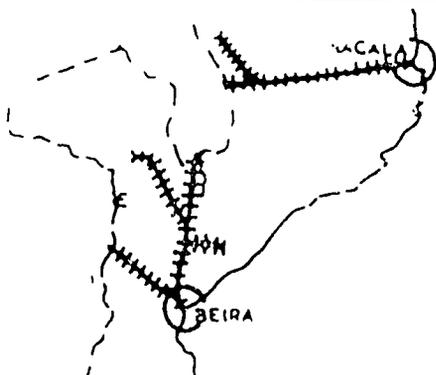
	USD
Expatriate labour	1 730 000
Local labour	120 000
Contractor's plant and equipment	900 000
Spares	50 000
Use of DNPCF machine tools	50 000
Consultant	150 000
	<u>3 000 000</u>

The project is of high priority.

Status : The project has been brought up as a follow up action based on the regional Study of Railway Stock, Project No. 2.0.1.

Action : Financing is being sought.

2.5.11 REHABILITATION OF STEAM AND DIESEL LOCOMOTIVES AND CONVERSION OF BEIRA WORKSHOP - CFM(Centro) MOZAMBIQUE



Estimated Costs:
 Pilot project USD 4.1 million
 Other costs to be established later

Financing:
 Secured : USD 4.1 million
 Foreign currency part : 100 %

Executing Agency:
 DNPCF

Start:
 1985

Duration:
 3 years (pilot project)

Scope : Rehabilitation of the existing fleet of steam and diesel locomotives operated by CFM (Centro) and conversion of the steam workshop at Beira to serve both steam and diesel locomotives.

Contents : The project consists of three parts :

- (i) studies on actions needed to rehabilitate :
 - (a) the existing steam locomotives;
 - (b) about 10 diesel electric locomotives;
- (ii) study on the conversion of the existing Beira Workshop to serve both steam and diesel locomotives; and
- (iii) implementation of the recommendations of the above studies (costs to be established based on the studies).

Only seven units of the total fleet of 55 steam locomotives of CFM(C) were operational in August 1985.. The other units were under repairs or waiting for repairs. The run down conditions in the maintenance of steam locomotives are considered having been caused by shortage of materials, spares, hand tools, equipment and skilled manpower. Urgent action is needed to rehabilitate adequate numbers of steam units until long term solutions have been found for motive power problems.

A study of the damaged diesel locomotives of CFM(C) and CFM(N) needs to be carried out to identify those which are considered to be economically viable to repair. Those repairable (identified at about 10 locos) should be evaluated for repairs and a programme for their rehabilitation prepared together with a maintenance programme for all the diesel units.

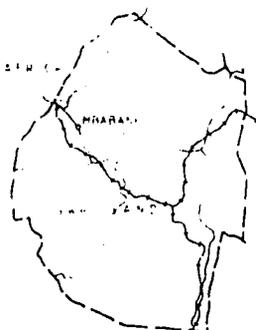
At present CFM(C) depends on CFM(S) for heavy diesel repairs. Since the diesel fleet of CFM(C) will increase in the future, adequate repair and maintenance facilities should be provided at the Beira workshop to carry out such work.

The project is expected to be extended to cover also CFM(S) and CFM(N).

Status : Project descriptions have been prepared by DNPCF. US AID is initiating a pilot project in 1985 (USD 4.1 million).

Action : Additional funds will be needed based on studies to be made during the pilot project.

2.6.1 MODIFICATION OF WAGONS AND WAGON MAINTENANCE, SWAZILAND RAILWAY



SOUTH AFRICA

Estimated Costs:

USD 1.1 million (1985 prices)

USD 1.2 million (current prices)

Financing:

Requested : USD 1.2 million

Foreign currency part : 75 %

Executing Agency:

Swaziland Railway

Start:

1986

Duration:

3 years

Scope : Modification of iron ore wagons for other purposes and provision of wagon repair facilities.

Contents : The project consists of the following parts :

- (i) conversion of 130 iron ore wagons (USD 325 000);
- (ii) conversion of workshop building (USD 200 000); and
- (iii) acquisition and installation of equipment (USD 563 000) at the workshop.

Iron ore wagons became redundant in 1980/81 when the Kadake Mine was closed. Since that time 127 wagons have been successfully converted to high sided bogie wagons to carry sugar, coal and other bulk commodities for which there is a great demand in the common pool operated to and from Maputo. There are still 130 wagons to be modified. The project is of high priority and should be implemented in 1986-87.

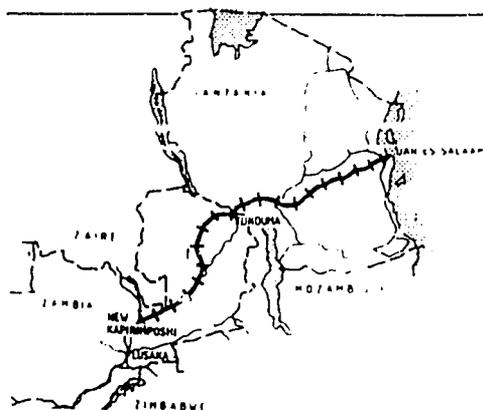
At present there is only a small shelter at Sidvokodvo for wagon repairs. A new combined wagon workshop and repair track is needed by expanding the existing facilities. The building of the workshop is scheduled for 1988.

Status : The above projects are based on the recommendations included in the Final Report of the Railway Rolling Stock Study, Project No. 2.0.1, by Kampsax-Swedera'l.

Action : Funds are being sought for implementation.

August 1985

2.7.1 TAZARA 10-YEAR DEVELOPMENT PLAN PROJECTS



Estimated Costs:
USD 157 million (1985 prices)

Financing:
Secured : USD 66 million
Requested : USD 91 million
Foreign currency part : 100 %

Executing Agency:
TAZARA

Start:
1985

Duration:
10 Years

Scope : Rehabilitation and upgrading of the TZR to provide adequate capacity for future services.

Contents : The 10 Year Development Plan prepared by TAZARA with assistance from SATCC/TU includes a total of 22 projects of which 7 are permanent way and construction projects (CE Projects) 6 are signalling and telecommunication projects (ST Projects) 7 are motive power, rolling stock and mechanical equipment projects (ME Projects) and 2 are general management and training projects (GM Projects).

The phasing of the projects has been ranked according to three priority levels, i.e. implementation period 1985/86 - 1987/88 (rank 1), 1988/89 - 1990/91 (rank 2) and 1991/92 - 1994/95 (rank 3).

Status : A Technical Co-ordination Conference for Donors was held in Arusha, Tanzania, on 11 - 12 April 1985. It was agreed that there was no need for a pledging conference but donors will get organized and go straight ahead with preparations for implementation. Preliminary pledging was made for 15 out of the 22 subprojects as described in the following table. The following countries and organizations have pledged to finance TAZARA projects : Austria, Denmark, Finland, Norway, People's Republic of China, Sweden, ADB and EEC. Canada and Italy have expressed interest in TAZARA projects.

Status of TAZARA projects

Code Name Of Project	Priority Ranking	Estimated Cost USD million		Finance Pledged USD million	
		Total	Foreign	Total	Foreign
CE:1 Rehabilitation of Quarries	1	3.2	2.5	3.2	2.5
CE:2 Permanent Rectification of Land - slides	2	12.0	8.6	12.0	8.6
CE:3 Mechanized Track Maintenance	1	14.9	10.5	14.9	10.5
CE:4 Rail Welding	3	16.4	6.7	16.4	6.7
CE:5 Rail Burn REpairs	1	0.5	0.3	0.5	0.3
CE:6 Terminal Facilities at New Kapiriposhi	2	0.3	-	0.3	-

CE:7	Railway Link TAZARA - Mpulungu Port, Zambia	1	0.4	0.4	0.4	0.4
ST:1	Solar Power Panels	1	0.8	0.7	0.8	0.7
ST:2	Back - up HF Radio Link	1	0.3	0.3	0.3	0.3
ST:3	Teleprinters	1	0.1	0.1	0.1	0.1
ST:4	Feasibility Study of Future	1	0.2	0.2	-	-
ST:5	Automatic Train Stops	2	4.5	3.5	-	-
ST:6	Track Circuiting	3	1.6	1.1	-	-
ME:1	Locomotives	1.3	46.0	45.3	-	-
ME:2	Goods Wagons	1.3	43.8	45.8	10.0	10.0
ME:3	Trolleys and Trailers	1	1.6	1.6	-	-
ME:4	Handling Equipment for Goods Depots	1	0.8	0.8	0.8	0.8
ME:5	Rescue Crane and Re- railing Equipment	1	1.8	1.8	1.8	1.8
ME:6	Wheel Lathes	1.3	2.5	2.5	2.4	2.5
ME:7	Mechanical Equipment for Workshops	1	1.0	1.0	-	-
GM:1	Technical Assistance to the Head Office	1	2.2	2.2	-	-
GM:2	Manpower Development Plan and	1	1.3	0.7	1.3	0.7
Total			156.9	134.6	65.5	45.9

+ Refers to the feasibility
study of the link

Action : Securing of financing and follow-up of financing activities.

August 1985

2.8.1 FEASIBILITY STUDY FOR NEW RAIL LINKS CONNECTING ZAMBIA WITH MOZAMBIQUE AND ZIMBABWE



Estimated Costs:
USD 0.5 million (1985 prices)

Financing:
Requested : USD 0.5 million
Foreign currency part : 100%

Executing Agency:
Ministry of Power, Transport and Communications

Start:
1986

Duration:
8 months

Scope : Feasibility study for possible new connections to the sea for Zambia's foreign trade.

Contents : Originally the project included a link from TAZARA to the Port of Mpulungu on Lake Tanganyika, a link via Caprivi Strip to Namibia and a link by-passing Zaire to the Port of Lobito, Angola. The Mpulungu link study is presented now under TAZARA projects, P. 2.7.1. The links to Namibia and Lobito are not considered realistic at the moment.

On the above grounds the proposal for a study includes the following links,

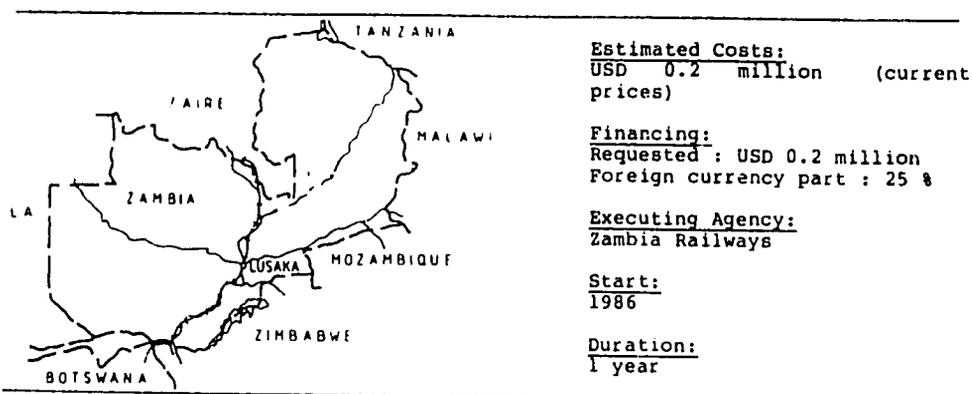
- (i) from Chipata to Lusaka - Zambia Railway system or Serenje, TAZARA;
- (ii) from the Livingstone - Lusaka line at Kafue to Zawi to connect with the National Railways of Zimbabwe (approximately 300 km); and
- (iii) from link (i) at Katate to Moatize to connect with the Mozambique railway system (approximately 300 km).

Development plans made in Zambia and in the neighbouring countries are expected to increase trade and demand for transport. Therefore a new study, taking into account the development plans for Nacala, Beira and Maputo corridors, is considered necessary although the Zambia Coastal Link Study was finalized as recently as in June 1980.

Action : Financing is being sought.

August 1985

2.8.2 WAGON REPAIR TRACKS AND TOOLS - ZAMBIA RAILWAYS



Estimated Costs:
 USD 0.2 million (current prices)

Financing:
 Requested : USD 0.2 million
 Foreign currency part : 25 %

Executing Agency:
 Zambia Railways

Start:
 1986

Duration:
 1 year

Scope : Building of small wagon repair tracks at Choma and Kafue and acquisition of hand tools.

Contents : Building of the repair tracks consist of a building, hardstanding and equipment at Choma and Kafue based on the recommendations made in the Final Report of the Study on Railway Rolling Stock, Project No. 2.0.1, by Kampsax-Swedexrail Consultants. In addition hand tools are needed for the maintenance of wagons (USD 10 000).

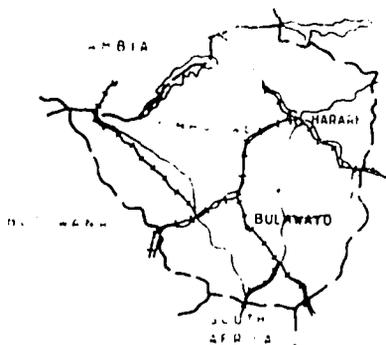
Repair tracks are needed also at Livingstone, Kabwe and Ndola. These tracks will be financed by the World Bank 4th Railway Project in Zambia.

Status : Project descriptions are included in the above Report of the Study of Railway Rolling Stock.

Action : Funds are being sought for the implementation of the project.

August 1985

2.9.1 REPAIR TRACKS AND WAGON MAINTENANCE EQUIPMENT - NATIONAL RAILWAYS OF ZIMBABWE



Estimated Costs:
 USD 1.0 million (1985 prices)
 USD 1.1 million (current prices)

Financing:
 Secured : USD 1.1 million
 Foreign currency part : 50 %

Executing Agency:
 National Railways of Zimbabwe

Start:
 1987

Duration:
 3 years

Scope : Cover and harstanding to the existing wagon repair tracks, building of a new repair track and acquisition of maintenance equipment.

Contents : The project consists of the following parts :

	USD
(i) cover and harstanding to the existing repair tracks at Mutare, Thomson Junction, Mpopoma and Lochinvar (1988);	424 000
(ii) a new repair track at Plumtree with equipment (1988);	76 000
(iii) replacement of the maintenance equipment at the Mutare Workshop (1986)	<u>473 000</u>
Total	973 000

The project is based on recommendations made in the Final Report of the Study of Railway Rolling Stock, Project No. 2.0.1, by Kampsax-Swederail Consultants.

Status : Project descriptions are included in the above Report of the Study of Railway Rolling Stock.

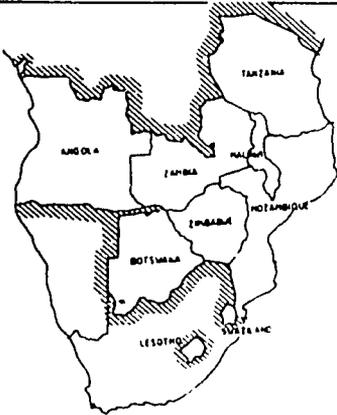
Action : The implementation will be financed by the National Railways of Zimbabwe.

August 1985

LIST OF PORTS AND WATER TRANSPORT PROJECTS

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3.0.1 REGIONAL CO-OPERATION ON SHIPPING

Estimated Costs:

USD 0.2 million (1985 prices) First phase

Financing:

Requested : 0.2 million
Foreign currency part : 100 %

Executing Agency:

Southern Africa Transport and Communications Commission

Start:

1985

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 shall 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 :

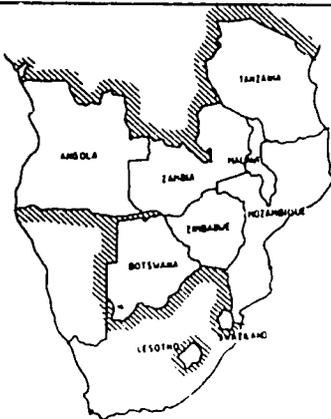
- planning, organisation, administration and management of the line;
- trades to be covered by the line;
- types and number of vessels to be operated initially;
- development programme for short term and intermediate term periods.

The recommendations should be supported by sufficient economic and financial analyses to show the viability of the recommended project.

Status : The study is financed by Italy. Consultants will submit their interim report to SATCC in November 1985 and a draft final report is scheduled for end of January 1986.

Action : The Terms of Reference for the project calls for a steering committee to be appointed by SATCC. It is proposed that the Group of Experts on Shipping Development will carry out this task.

3.0.2 PORT STAFF TRAINING PROGRAMME, REGIONAL

Estimated Costs:

USD 0.6 million (1985 prices)

Financing:

Secured : USD 0.6 million

Foreign currency part : Approximately 95%

Executing Agency:

Southern Africa Transport and Communications Commission

Start:

1983

Duration:

24 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 :

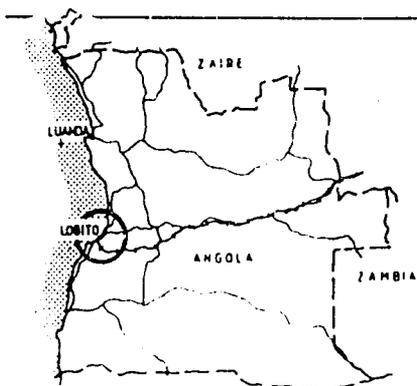
- a) Inventory and assessment of
 - existing local and institutional conditions in the field such as organisations, duties and powers of Port Authorities on national and local levels;
 - availability of qualified staff in the different levels and positions;
 - existing training facilities and their capacity, 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. Three "Supplementary Interim Reports" have been submitted mainly concerning Mozambique and Tanzania. The proposed Port Staff training institutes in Tanzania and Mozambique have been broken out of the study as independent projects. It is expected that the case will be the same for Angola.

Action : Completion of the study.

3.1.1 MASTERPLAN FOR THE PORT OF LOBITO



Estimated Costs:
USD 0.7 million (1985 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 has been carried 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 includes :

- 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 has been summed up in the report to the Government. The results has given the input data for the development plan.

The development planning includes 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 is 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 995 m wharf under construction;
- c) for the medium term period until 1990; and
- d) for the long term perspective.

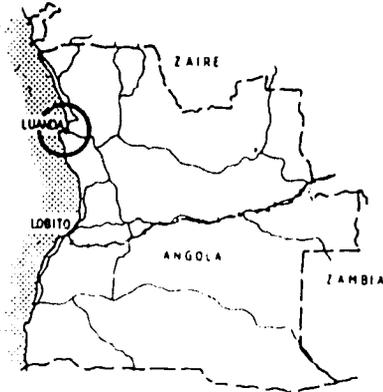
The development plan also includes the organisation of a department for coordination of operations, port planning and control, training of staff etc.

Status : The project is financed by DANIDA. A preliminary study report has been approved by the Government. The final report will be submitted September 1985.

Action : Evaluation of the study.

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3.1.2 DEVELOPMENT OF THE PORT OF LUANDA

Estimated Costs:

USD 35.5 million (1985 prices)
 USD 38 million (current prices)

Financing:

Secured : 13.6 million
 Requested : 24.4 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.

Contents : 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 project is further elaborated as a sub-project on the following page. The estimated cost is estimated of USD 10 million.

(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.

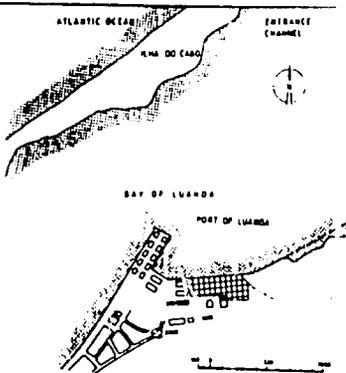
(4) Earthwork, compacting and paving of 100 000 m² of backup area to the general cargo quay. Estimated costs USD 5 million.

(5) Construction of canteen facilities for 2.500 workers of an estimated cost of USD 3.4 million.

Status : For subproject (1) negotiations with financiers are in progress; 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) is being sought.

Action : Financing or remaining financing is being sought for all sub-projects.

3.1.2(1) CONTAINER AND RO/RO TERMINAL IN THE PORT OF LUANDA



Estimated Costs:
USD 10 million (1985 prices)

Financing:
Requested : USD 10 million

Executing Agency:
Ministry of Technology and Construction

Start:
1986

Duration:
2 years

Scope : Container and Roll on / Roll off facilities needed in the Port of Luanda. Future investment requirements and operating procedures.

Contents : The project comprises two parts

- detailed design and construction 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 detailed design of immediately required facilities also taking into account 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 and necessary improvements in management and operations procedures as well as staffing requirements. Financing proposals for the investments finally selected by the Government shall also be prepared.

Status : The Governments of Italy and Angola are negotiating financing of the project.

Action : Closing the financing agreement.

August 1985

3.5.1 INCREASE IN CAPACITY OF THE PORT OF MAPUTO

Estimated Costs:

USD 66.5 million (1985 prices)
 USD 84.3 million (current prices)

Financing:

Secured : USD 10.8 million
 Requested : USD 73.5 million
 Foreign currency part : 90 %

Executing Agency:

National Directorate of Ports and
 Railways

Start:

Ongoing since 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 : Subproject No.

- (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 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 1.5 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 2.0 million (1985 prices).
 - Phase - II Extension of the terminal to 7 million tonnes per annum. Redesign and construction costs are estimated at USD 40 million (1985 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. Cost assessed at USD 23 million.

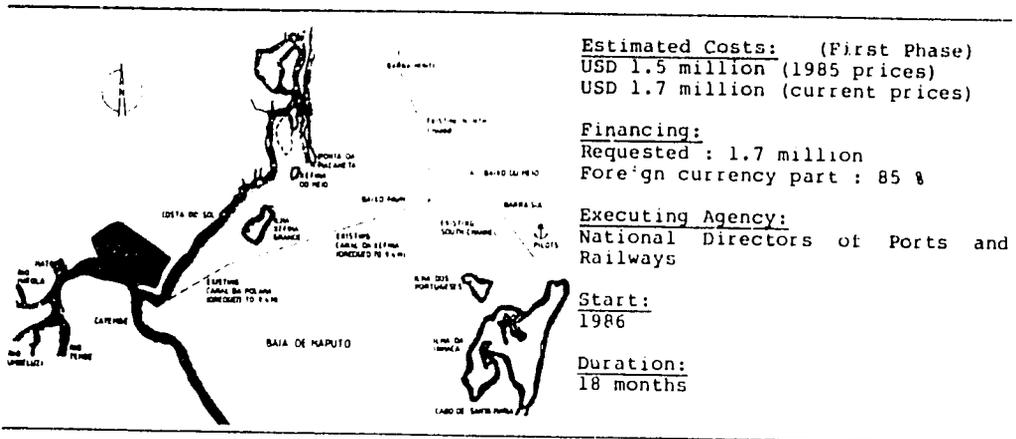
Status : The first phase of the Entrance Channel Study (1) will be financed by Denmark.

Two CMI container cranes have been erected financed by Italy as is other shoreside equipment at a combined cost of USD 9.0 million. The British Government has financed a feasibility study which was submitted in November 1982 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 financed by UK. A team of 6 technicians are assisting the container terminal management. Two more will arrive shortly to take care of the training in container terminal operation and documentation. Assessed cost USD 1.8 million.

Action : To clarify the financing situation of (2).

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3.5.1(1) IMPROVEMENT OF THE ENTRANCE CHANNEL TO THE PORT OF MAPUTO AND THE MATOLA TERMINALS



Estimated Costs: (First Phase)
 USD 1.5 million (1985 prices)
 USD 1.7 million (current prices)

Financing:
 Requested : 1.7 million
 Foreign currency part : 85 %

Executing Agency:
 National Directors of Ports and
 Railways

Start:
 1986

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;

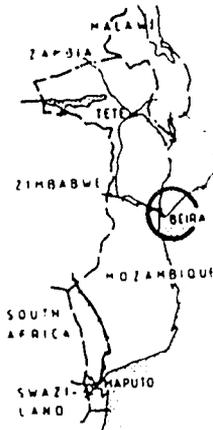
The studies are to be carried out to a level that will provide a sound basis for the final design and the preparation of contract documents.

Status : Already in 1981 project description and terms of reference for a comprehensive study were approved. The terms of reference have been revised April 1984 and submitted to DANIDA. An appraisal mission has reported favourably on 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 is expected to finance the technical part of the study (First Phase), which should start soonest.

August 1985

3.5.2 INCREASE IN CAPACITY OF THE PORT OF BEIRA

Estimated Costs:

USD 298 million (1985 prices)
 USD 365 million (current prices)

Financing:

Secured : USD 31.7 million
 Requested : USD 178.5 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 15 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 :

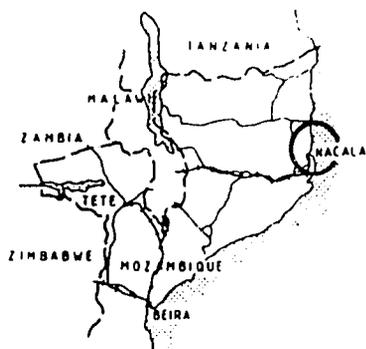
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|---|------------------|
| (4) Construction of Service Port Facility (1986) | USD 3.6 million |
| (5) Construction of Oil Terminal (1987) | USD 9.2 million |
| (6) Reclamation and Dredging to CD-8 m (1987) | USD 9.5 million |
| (7) Reconstruction of berths 2-5 for Multi-Purpose terminal (1988) | USD 63.1 million |
| (8) Construction of Sugar/Cereals Terminal (1988) | USD 31.3 million |
| (9) Container / M-P Terminal, Equipment, berths 2-3 (1989) | USD 17.8 million |
| (10) Railways for non-coal Traffic (1989) | USD 17.8 million |
| (11) Roads (1989) | USD 3.7 million |
| (12) Reclamation for new Coal Terminal (1990) | USD 40.3 million |
| (13) Channel Dredging to CD - 10 m (1991) | USD 21.6 million |
| (14) Coal Terminal; Civil Infrastructure and equipment Phase 1-2 (1993) | USD 81.8 million |
| (15) 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 in current prices; later projects in 1985 prices.

Status : Implementation of the rehabilitation measures are carried out with support of the Netherlands. 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 : Dossiers on project to be included in a 10-year development plan for Beira Transport Corridors will be prepared by TU. A technical co-ordination conference will be convened April 1986.

3.5.3 DESIGN AND CONSTRUCTION OF CONTAINER TERMINAL FOR THE PORT OF NACALA

Estimated Costs:

USD 9.9 million (1985 prices)

Phase I

USD 10.9 million (current prices)

Financing:

Secured : USD 10.9 million

Foreign currency part : 85%

Executing Agency:

National Directorate of Ports and Railways

Start:

Jan. 1984

Duration:

4 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 areas

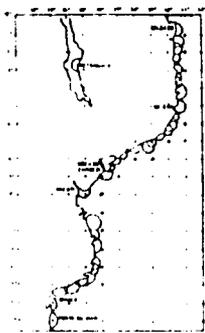
Phase III : Construction of 300m container wharf and reclamation of back-up area

Phase IV-V : Further land reclamation up to 155 000 m² and successive pavement of 150 000 m² storage area

Phase VI : Final lay-out, construction of terminal buildings, over-land connections, fencing etc.

Status : The Finnish Government is financing the foreign currency part of Phase I, including the cost of technical assistance and housing for the Finnish personnel at USD 1.5 million. The project has started in 1984 and will go on for 4 years after which the first Phase will be completed.

3.5.4 NAVIGATIONAL AIDS, MOZAMBIQUE

Estimated Costs:

USD 8.9 million (1985 prices)

USD 11.6 million (current prices)

Financing:

Secured : USD 6.0 million (Phase 1)

Foreign currency part : 96%

Executing Agency:National Directorate for Maritime
and River TransportStart:

1985

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	12.1	18.4
Buoys	13.9	-
Workshops	1.7	
Technical Assistance and Training	10.0	10.9
Freights and vehicles	6.1	1.4
Total	43.8	30.7
Time contingencies	3.1	8.0
Price contingencies	3.1	8.3
Total current prices	50.0	47.0

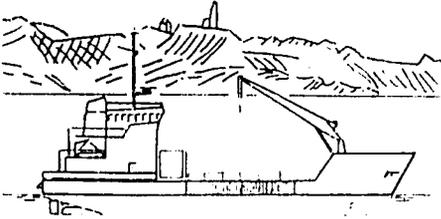
Phase 1 is estimated to require two years and phase 2 three years implementation.

Status : SIDA has agreed to finance Phase 1. Project organization is in progress.

A buoy tender is needed 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 implementation will start as soon as the administrative issues have been solved.

3.5.4(1) BUOY HANDLING AND MAINTENANCE VESSELS, MOZAMBIQUE



Estimated Costs:
USD 5.0 million (1985 prices)

Financing:
Requested : USD 5.0 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 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 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 characteristics and properties needed,
- 2) a survey of the new building 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 spare parts for at least 2 years service and provisions for adequate training of the Mozambican crew.

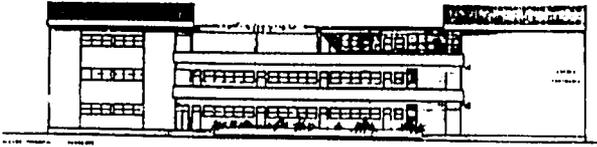
Cost Estimates, new building 1984 prices

Total price vessel (ex yard north-west Europe) :	USD 3.6 million
Spare parts :	USD 0.1 million
Transport Europe/Maputo :	USD 0.2 million
Technical assistance and training :	USD 0.6 million
Contingencies	<u>USD 0.5 million</u>
Total	<u>USD 5.0 million</u>

Status : DNTMF has made a specification for the general characteristics of the vessel and also got quotations on new buildings.

Action : DANIDA has been approached for financing and will send an appraisal mission to Mozambique September/October 1985.

3.5.5 PORT STAFF TRAINING INSTITUTE, MOZAMBIQUE



Estimated Costs:
USD 6.8 million (1985 prices)

Financing:
Requested : USD 6.2 million
Foreign currency part : 90%

Executing Agency:
National Directorate for Ports and
Railways (DNPCF)

Start:
1985

Scope : In the context of the Regional Port Staff Training Programmes Study (P. 3.0.2) an inventory of the needs for formal training in the different member countries has been carried out. For the ports of Mozambique about 540 individuals per year during the next 10-year period will have to receive such training. Thus the aim of the project is to establish a Port Staff Training Institute at Maputo with capacity to provide the Mozambican ports with adequately trained staff for all required port functions and levels and - in the longer term perspective - to make the country self-sufficient as to teachers and training capacity.

Contents : The exact content of the project will be defined in a Project Document under preparation by ILO. However, it is envisaged that the project will contain the following parts :

- Physical facilities as school compound, buildings, equipment, etc.;
- Training and programmes, teaching staff and teachers' training;
- Funds requirements.

An area of 4.600 sq.m for school building and outdoor training has been allocated at the port of Maputo. An area of 1950 sq.m for dormitory and outdoor leisure activities outside the port but close to the school building is also at hand. Procurement of equipment and furniture for the various types of training activities, school administration, dormitories etc will be required.

Preparation of comprehensive training programmes, staffing with component teachers and trainers as well as administrative staff must be carried out.

Preliminary costs are estimated as :

- Building, yards	USD 1 850,000
- Equipment etc	USD 350,000
- Technical assistance	USD 900,000
	<u>USD 3 100,000</u>

The foreign currency part of this is about 80%.

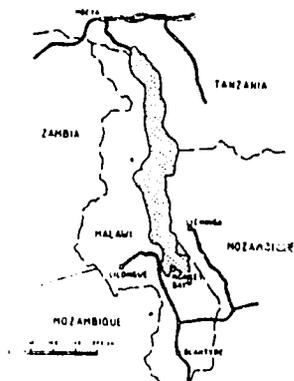
The costs for expatriate teaching staff during the first five years of operation is roughly assessed at USD 3.6 million.

During the building phase support to interim training facilities and staff in provisional accommodations should be provided. For this the immediate procurement of furniture and equipment to a cost of USD 60.000 is required.

Status : NORAD has been requested to assist Mozambique in establishing the Port Staff Training Institute in Maputo and to commence a pre-project with the objective of preparing the Project Document mentioned above.

Action : Project document to be submitted to the NORAD Advisory Board by November 1985.

3.7.1 DEVELOPMENT OF NAVIGATION ON LAKE MALAWI / NIASSA



Estimated Costs:
USD 0.4 million (1985 prices)

Financing:
Requested : 0.4 million
Foreign currency part : Approx. 90%

Executing Agency:
Southern Africa Transport and Comm-
unications Commission

Start:
1986

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), meteorological 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 programme and facilities to meet also regional maritime training needs.

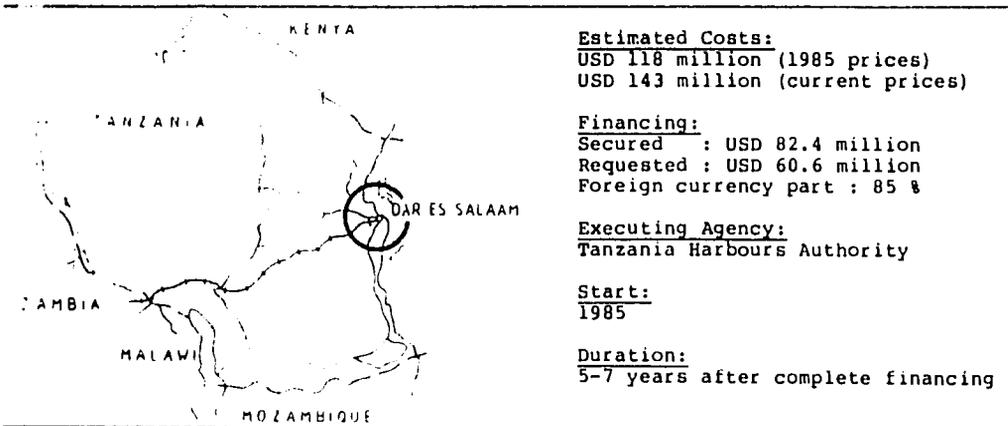
Status : Since 1935 a lake transport service has operated as a branch of Malawi Railways. The service includes only Malawi ports. There are repair and maintenance facilities at Monkey Bay. Tanzania operates a service between Mbamba Bay and Itungi with one 80 passenger boat and one cargo vessel of 150 DWT. A Marine Training Centre at Monkey Bay on Lake Malawi is to be established. The UN are supporting the school through IMCO.

The project will be financed by DANIDA. Consultants have been short-listed, but the tendering process has been held up due to possible over-lapping with the World Bank financed study on a northern transport route from Blantyre/Lilongwe to Dar es Salaam.

Action : Terms of Reference will be revised accordingly as soon as the Study Report is made available to the TU.

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3.7.2 DEVELOPMENT OF THE PORT OF DAR ES SALAAM



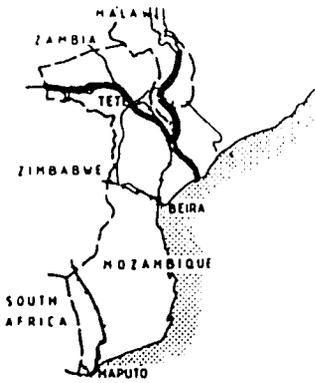
Scope : The project comprises several parts in various fields of port engineering and operation.

Contents and Status : The project heading related to several sub-projects :

- | | | |
|------|---|------------------|
| (1) | Kurasini Oil Terminal Rehabilitation;
Financing by NORAD, implementation awaits solution of administrative issues. | USD 2.3 million |
| (2) | Improvement of Harbour Entrance Channel;
Financing being sought. | USD 45.4 million |
| (3) | Container Terminal;
Financed by IDA. Contractor appointed. Execution to start in 1985. | USD 21.1 million |
| (4) | Construction of Grain Facility;
Financing by the Netherlands. Detailed design underway. | USD 16.7 million |
| (5) | Ubungu Inland Container Depot;
Financing by IDA. Contractor appointed. Execution to start in 1985. | USD 3.7 million |
| (6) | Lighterage Quay and Belgian Wharf;
Partly financed by IDA. | USD 6.7 million |
| (7) | Construction of Tug Berth;
Financing being sought. | USD 5.2 million |
| (8) | Purchase of shore-based container and General Cargo Handling Equipment;
Financing by Denmark and Finland. | USD 14.7 million |
| (9) | Purchase of Floating craft - Berthing Tug and Pilot Boat;
Financing being sought. | USD 3.5 million |
| (10) | Technical Assistance and Improvement of Bandari College;
Financing by IDA and NORAD. | USD 6.0 million |
| (11) | Rehabilitation of Berths 1-8;
Financing by Sweden. Detailed design under way. | USD 16.7 million |
| (12) | Study on new Oil Terminal;
Financing being sought. | USD 0.2 million |
| (13) | Study on Transit Warehouse for ZBR Cargo;
Financing being sought. | USD 0.3 million |
| (14) | Study on Container Handling in Tanzania and on TAZARA;
Financing by NORAD. Phase I completed and Phase II to start soon. | USD 0.5 million |

Action : Remaining financing to be secured.

3.8.1 NAVIGABILITY ON THE ZAMBEZI AND SHIRE RIVERS

Estimated Costs:

USD 0.3 million (1985 prices)

USD 0.3 million (current prices)

Financing:

Requested : USD 0.3 million

Foreign currency part : 90%

Executing Agency:

SATCC

Start:

1986

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 cargoes 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.

UNDP has undertaken to finance the study and recently requested the TU assistance in preparing a project document. A draft has been submitted to UNDP, Maputo.

Action : The decision to go ahead should be taken soonest.

August 1985

CIVIL AVIATION PROJECTS

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4.0.1(2) TANELEC FLIGHT CALIBRATION SERVICE, ARUSHA



Estimated Costs:
USD 2.6 million - foreign currency (1985 prices)

Financing:
Requested : USD 2.6 million
Foreign currency part : 100 %

Executing Agency:
Ministry of Communications and Works of Tanzania.

Start:
1985

Duration:
12 months

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 conform 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 Navajo fitted with a single console Sierra Flight Inspection System. This set up is technically capable to carry out limited flight calibration of nav aids in all SADCC States except Angola.

However for it to be able to meet the full requirements for flight testing and calibration of nav aids 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.

The Tanelec Flight Calibration Services has now been transferred to the Ministry of Communications and Works of Tanzania which has made a Turbo Commander available for the calibration unit.

Thus the cost will be reduced to a total of USD 2.6 million (in foreign currency) to cover the following :-

1. Installation of calibration equipment in the Turbo Commander.
2. calibration equipment
3. Fault rectification equipment
4. Training equipment
5. Additional Personnel (expatriate and local)

Action : 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 COORDINATED UTILIZATION OF AIRCRAFT MAINTENANCE FACILITIES.



Estimated Costs:
USD 0.255 million

Financing:
Requested : USD 0.255 million
Foreign currency part : 100 %

Executing Agency:
Southern Africa Transport and
Communications Commission

Start:
Open

Duration:
8 months

Scope : Study to supplement the "Feasibility Study for the Establishment of a Co-ordinated Network of Aircraft Maintenance and Overhaul Centres in Africa performed during 1984 on commission by the African Development Bank in order to give required detailed additional information needed for following objectives.

Contents : The objectives of the project will be :

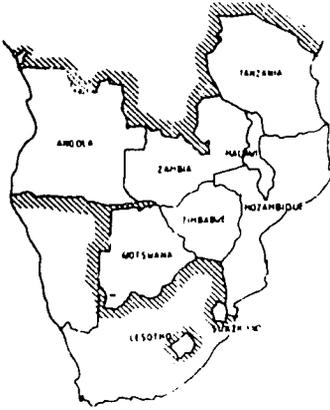
- to recommend an optimum utilisation of resources for maintenance, overhaul and repair of airframes, engines and components for the airlines registered in the SATCC states, bearing in mind existing and planned facilities and fleet development over a 20 year period,
- to assess present facilities and to determine the manpower requirements and the training programmes and facilities required to meet current and future needs, and to chart the present custom procedures and traffic,
- to indicate the magnitude of investments by location and to estimate the operating costs,
- to recommend a system aiming at distribution of gains and work load among the participating members,
- to prepare a cost/benefit analysis showing the economic improvements which the recommended system will achieve compared to current maintenance and overhaul practices.

Status : Revised Terms of Reference have been prepared.

Action : The study should be based on the ADB financed continental study including the ongoing amendment for turbo-prop aircraft and experience gained in bilateral co-operation between SATCC airlines. Thus it should not start until such experience has reached an acceptable basis for further multilateral co-operation.

August 1985

4.0.4 STUDY ON COMMONALITY IN CIVIL AVIATION LEGISLATION

Estimated Costs:

USD 0.41 million - foreign currency (1985 prices)

Financing:

Requested : USD 0.41 million
Foreign currency part : 100%

Executing Agency:

Southern Africa Transport and Communications Commission

Start:

1985

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 restarted or prevented.

Contents : The present Civil Aviation authorities in the SADC States have, mostly as a matter of expediency, been required to adopt and develop their civil aviation legislation and regulations on basic legislation and philosophies 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.

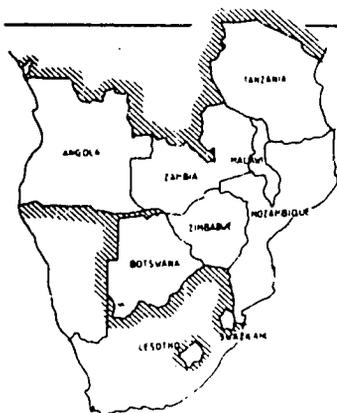
The work will include :

- 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 : A report has been prepared by a short term expert within SATCC/TU and distributed to Directors of Civil Aviation and Senior Executives of National Airlines for comments.

Action : The Report will be discussed at the joint DCA/Airlines meeting in Tanzania November 1985.

4.0.5 STUDY ON GENERAL AVIATION ACTIVITIES



Estimated Costs:
USD 0.39 million (1985 prices)

Financing:
Requested : 0.39 million
Foreign currency part : 100 %

Executing Agency:
Southern Africa Transport and
Communications Commission

Start:
1986

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 SADC 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 airline 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 and 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.

4.0.6. UPDATING OF THE 1974/75 CIVIL AVIATION MANPOWER AND TRAINING REQUIREMENTS SURVEY



Estimated Costs:
USD 0.225 million (1985 prices)

Financing:
Requested : USD 0.225 million
Foreign currency part : 100 %

Executing Agency:
Southern Africa Transport and
Communications Commission

Start:
1986

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/72/006.

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 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.

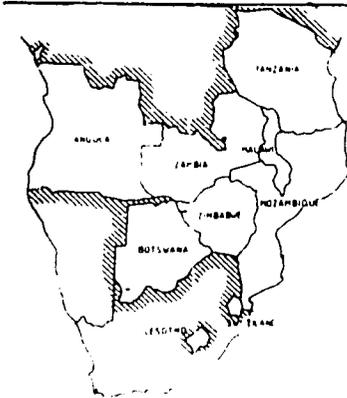
Due to the rapid development within the civil aviation sector, there is now an urgent need for updating with regard to the SADCC States with the following objectives :

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.

4.0.7. UPDATING THE AERONAUTICAL INFORMATION SERVICES



Estimated Costs:
USD 0.46 million (1985 prices)

Financing:
Requested : USD 0.46 million
Foreign currency part : 100%

Executing Agency:
Southern Africa Transport and
Communications Commission

Start:
1986

Duration:
4 years

Scope : To review the Aeronautical Information Services (AIP's) of each SADCC State 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 ICAO has been approached for financing.

August 1985

4.3.1 NEW AIRPORT AT MASERU



Estimated Costs:
USD 42,0 million (current prices)

Financing:
Secured : USD 42 million
Foreign currency part : 75%

Executing Agency:
Ministry of Transport and Communications

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 Mphahle'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;
- airport lighting, met. equipment, power supply, vehicles etc.

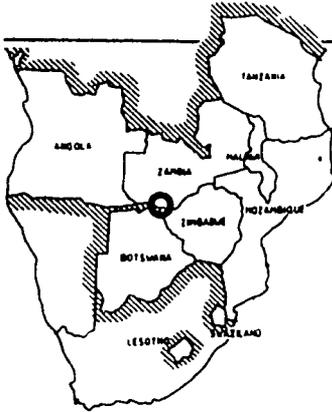
The new airport will make possible the expansions of direct services to other countries in the region with jet aircraft, thus reducing the country's dependence on South Africa for external transport.

Consultants were engaged in February 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 offset subsequent price rises.

Status : Formal inauguration of the airport took place in June 1985. The operation of the airport is successively implemented during the later part of 1985.

4.8.1 STUDY ON IMPROVEMENT OF LIVINGSTONE AIRPORT



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:
1988

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-alignment 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 1985

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:
1986

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 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 1985

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:
1988

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.

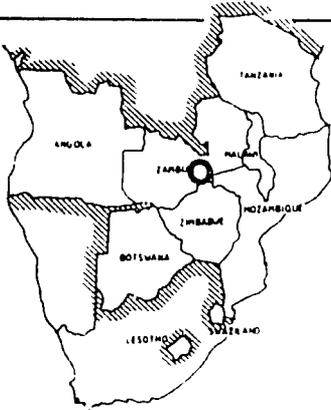
Apart from rehabilitation of the runway essentially everything is lacking. Construction of new taxiways and re-location and enlargement of parking apron have to be made. Installation of airfield lighting to admit after dark operations is needed. Provisions of both passenger terminal and air traffic control 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 1985

4.8.4 STUDY ON NEW HANGER 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:

1986

Duration:

3 years

Scope : Construction of a new hanger 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 hanger 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 hanger and workshop
- a power plant over-haul building and offices
- 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 1985

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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 Educa-
tion and Vocational Training,
Lusaka, Zambia

Start:
1986

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 Biantyre. 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.

August 1985

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

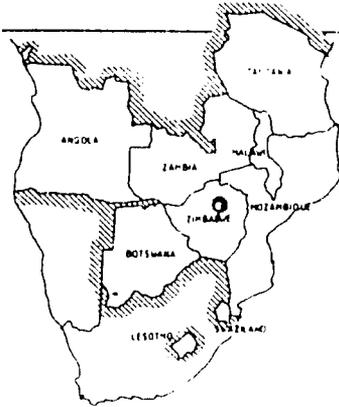
Start:
1984

Duration:
12 months

- Scope** : New airport terminal, access road systems, taxiways and aprons.
- Contents** : The need to construct a new airport 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** : A master plan study on the development of Harare airport will start in 1985. The outcome of this study will show if there is a need of constructing a new terminal building or if the reconstruction of the existing terminal will be sufficient for the near future.
- Action** : This project must be given high priority in the context of the co-ordinated and integrated traffic system in the SATCC region, as Harare will be the natural traffic hub. Therefore it must have a high capacity of transit handling.

August 1985

4.9.3 MODERNISATION OF AFTN - MESSAGE SWITCHING CENTRE AT HARARE INTERNATIONAL AIRPORT, ZIMBABWE



Estimated Costs:
USD 0.6 million

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

Executing Agency:
Department of Civil Aviation

Start:
1986

Duration:

Scope : To provide a reliable Aeronautical Fixed Telecommunications Network (AFTN) by introducing a modern simplified switching centre at Harare International Airport.

The centre is ment to switch messages concerning air traffic movements. The types of messages are detailed in ICAO document Annex 10 to the Convention on International Civil Aviation. The messages are interchanged between International, Regional and Domestic destinations.

Contents : Department of Civil Aviation recommends computerised fully automatic AFTN system capable of :-

- (i) handling not less than 180 messages per hour
- (ii) producing local message output on a branch/department/office basis
- (iii) utilising a wide range of terminals (not less than 20 eqts.) and computer equipment as well as ability of change and growth according to user's requirements
- (iv) providing accounting and statistical information on message traffic
- (v) monitoring and displaying the input/output status of all communications part on the system
- (vi) providing means of manually correcting unrecognisable rejected messages
- (vii) automatic error correction if message is recognisable but incorrect
- (viii) operating at a Band rate of 50
- (ix) providing message priority facilities.

The equipment involves :-

- (i) Central control equipment capable of handling incoming messages and routing messages to appropriate destinations
- (ii) Domestic terminals equipment capable of receiving messages from Central Control and sending messages to Central Control
- (iii) Terminal equipment must be able to error-correct any messages rejected by Central Control.
- (iv) Installation of new domestic direct links to Kariba and then Masvingo.

Status : The project has been presented to the Posts and Telecommunications Corporation but it was dropped out of their budgetary three year development plan.

According to ICAO recommendations, on AFTN system is a prerequisite to the operation of an International Airport.

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5.9.5	Zimbabwe	Restoration of Open Wire and Carrier Equipment Harare - Lusaka	completed

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 CommissionStart:

1986

Duration:

1 year

Scope : Study of high quality telecommunication services to isolated rural communities in African countries.

Contents : 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 on-going studies in African Domestic Satellite Communications with the Inter-Agency Co-ordinating Committee (IACC), under the leading role of ITU (RASCOP 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. Canada and Italy have expressed their interest. Considering that a second regional project regarding the Regional Satellite System is being implemented (P. 5.0.2), it was decided to wait for the outcome of this study before taking any concrete action.

Action : To wait for the outcome of Project 5.0.2, possible review of the Terms of Reference will be needed.

August 1985

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5.0.2 STUDY ON THE HARMONIZATION OF THE DEVELOPMENT OF SATELLITE COMMUNICATION



Estimated Costs:
USD 325 000 (1985 prices)

Financing:
Secured : USD 325 000
Foreign currency part : 100 %

Executing Agency:
Southern Africa Transport and
Communications Commission

Start:
June 1985

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 achieve 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 February, 1983. Terms of Reference have been prepared based on comments from the SATA-Conference. Financing has been secured from Italy. Contract with the Consultants has been signed in March 85 and approved by the Italian Government.

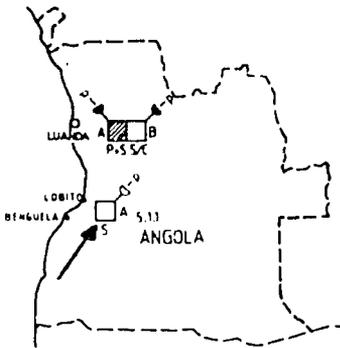
Implementation is now in progress, a technical mission is visiting the countries to collect and discuss the data.

Action : To complete the collection of the data by the end of November 85, with the aim to present the first draft of the report at the VI SATA Conference in Maseru, February 1986.

August 1985

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5.1.1 EARTH STATION, STANDARD A, IN THE REGION OF LOBITO/BENGUELA

Estimated Costs:

USD 12.0 million (1985 prices)

USD 14.3 million (current prices)

Financing:

Requested : USD 14.3 million

Foreign currency part : 80 %

Executing Agency:Ministry of Transport and Commu-
nicationsStart:

1986

Duration:

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 Lobo/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.

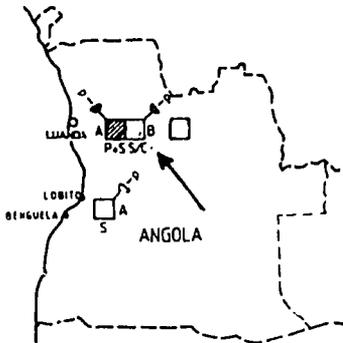
No funds have been allocated as yet.

Action : Decision on the basic concept will be needed before 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 1985

5.1.2 EXPANSION OF THE INTERNATIONAL TELECOMMUNICATION SERVICES OF ANGOLA

Estimated Costs:

USD 38.0 million (1985 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:

5 years

Scope : Expansion of the capacity of the international telecommunication system.

Contents : Provision of

- extensions to the Standard A earth station at Cacucuo
- equipment for the existing standard B antenna
- new telex exchange
- extensions for the ITSC
- no-break power supply

The project is to include also installation and civil works.

The project will allow the establishment of direct satellite circuits with African Countries, namely Congo, Kenia, Tanzania, Zambia and Zimbabwe.

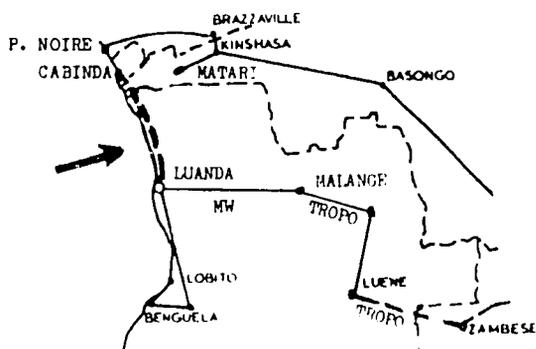
The project is ongoing being the various parts at a different stage of implementation :

- the contract for no-break power and civil works expected to be signed shortly,
- equipment for the expansion of A Antenna already in site (supplied by NEC) to be installed after completion of the civil works - RFS April 87,
- equipment for the B Antenna not yet defined, still some decisions to be taken on the basic concept, desired RFS April 87,
- specification of telex exchange approved and an international tender to be issued, expected RFS August 87,
- specification under preparation for the International Switching Center, desired RFS October 88.

Status : The project will be financed by ADB for the foreign currency part of Angola for the local costs.

Action : Awarding and execution of the contracts.

5.1.3 MICROWAVE LINK LUANDA - CABINDA



Estimated Costs:
USD 5 million (1985 prices)

Financing:
Requested : USD 5 million
Foreign currency part : 80%

Executing Agency:
Ministry of Transport and Commu-
nications, Angola

Start:
1986

Duration:
4 years

Scope : Implementation of a large capacity microwave system from Luanda to Cabinda, as a part of the PANAFTEL terrestrial network of the region.

Contents : Presently on the section Panafitel section Luanda - Cabinda, a troposcater system is in operation.

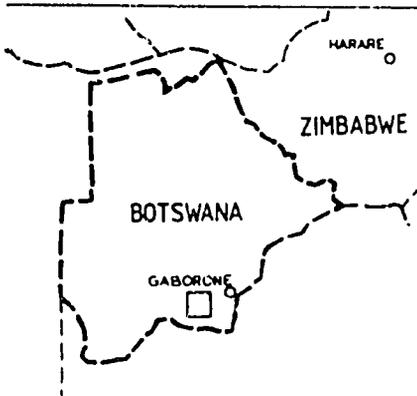
The project calls for the implementation of a 960 channel system consisting of about 8 hops. The link will provide for the needs of the national traffic, giving also access to the Panafitel network of the western countries of Africa.

Status : At a preliminary planning stage.

Action : To secure financing for the study and the implementation of the project.

August 1985

5.2.2 INTERNATIONAL TELEPHONE SWITCHING CENTRE, GABORONE

Estimated Costs:

USD 4.6 million (1985 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 financed by Sweden and it is included in the Main Development Plan for Botswana which is now under implementation financed by ADB, Norway, Sweden and local funds. The project is ongoing and the implementation schedule forecast RFS mid-86.

Action : Execution of the project.

August 1985

5.3.2 RURAL TELECOMMUNICATION SYSTEM - LESOTHO



Estimated Costs:
USD 0.6 million

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

Executing Agency:
Lesotho Post and Telecommunication Corporation

Start:
Desired 1986

Duration:

Scope : The project aims at providing communication to the Clinics/Health centres, Post Offices/Postal Agencies, Police Stations and small business in the rural areas of Lesotho most of which are situated in the mountains which are less accessible by road.

The first step is to conduct a short feasibility study to define the scope and the time schedules of the various activities leading to implementation from about the end of 1986 or beginning of 1987. The project also include training fellowships for technicians.

Contents : The microwave backbone has been installed and commissioned by July 1985 to provide telephone services to the district centers. But some scattered rural villages are left out and due to the mountainous nature of the terrain it is very expensive to construct open wire carrier routes to these rural areas.

The rural system which is expected to be implemented consists of :

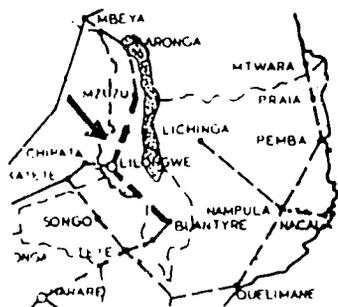
- central stations located at the main exchange of the districts
- repeater stations capable to handle from 10 to 60 subscribers and connected to the central station with small capacity radio links (2 to 10 channels)
- remote stations located at the subscribers in remote areas where there is no commercial power and in some cases difficult to reach by vehicle.

Status : At a preliminary planning stage.

Action : To contact financiers to get consultancy services for the study and financing for the implementation.

August 1985

5.4.2 DIGITALISATION OF THE TRUNK NETWORK, MALAWI



Estimated Costs:
USD 10 million (1985 prices)

Financing:
Requested : USD 10 million
Foreign currency part : 90 %

Executing Agency:
Department of post and tele-communications

Start:
1986

Duration:
RFS 1990

Scope : To replace due to age of the existing equipment of the backbone Mzuzu - Lilongwe - Blantyre, and to implement a transit exchange and transit facilities in Lilongwe and Blantyre.

Contents : The microwave backbone link Mzuzu - Lilongwe - Blantyre is an integral part of the Malawi portion of the PANAFTEL network. It is connected to Zambia (Lilongwe - Chipata link); to Tanzania through the link Mzuzu - Mbeya that is in implementation phase, and to Mozambique and Zimbabwe through the link Blantyre - Tete Harare for which the survey is now in progress.

Digital radio equipment (140 M/bit) is requested considering that Malawi is now well advanced in the technology.

The existing analog equipment has been installed at the beginning of the 70's and have given satisfactory service. They need now to be replaced due to age.

The introduction of a digital transit exchange in Lilongwe and transit facility in Blantyre are needed to complete the project that will carry traffic from Zambia, Zimbabwe, Mozambique and Tanzania giving also access to the Satellite Earth Stations in Blantyre.

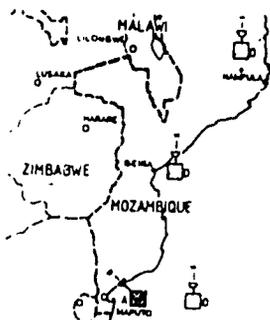
Status : The project is at the planning stage.

Action : Funds for the project are being sought.

August 1985

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5.5.1 NATIONAL/REGIONAL SATELLITE COMMUNICATION SYSTEM OF MOZAMBIQUE

Estimated Costs:

USD 19.5 million (1985 prices)

USD 19.5 million (current prices)

Financing:

Secured : USD 17.5 million

Requested : USD 2 million

Foreign currency part : 19.5
millionExecuting Agency:

Telecomunicacoes de Mocambique

Start:

1984

Duration:

RFS 1986

Scope : Provision of:

- part 1 : domestic satellite system in Mozambique
- part 2 : dual polarisation for the Boane A antenna

Contents : Part 1

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.

Part 2

The project will provide the modification/reparation or replacement of the existing feed and adjustment of antenna panels in order that the antenna comply with the INTELSAT mandatory specifications for dual polarisation. For dual mode of operation the E/S will be equipped with additional low noise amplifiers connected to the RHFC port. Some test equipment are also required.

Status : Part 1

Tenders have been evaluated and contract awarded. Financing is secured for the project from France (13.2 million), Kuwait (4.3 million), local funds (0.4 million).

Part 2

The planning of the project has commenced. Technical specification will be prepared by INTELSAT. No funds have been allocated so far.

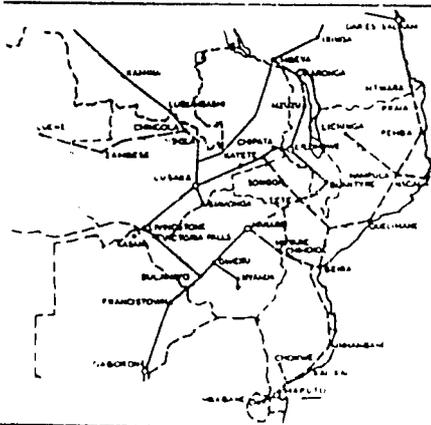
Action : Part 1

Execution of the project.

Part 2

Preparation of the technical specification with INTELSAT and to secure funds.

5.5.3 NATIONAL TELECOMMUNICATION DEVELOPMENT PROJECT WITH CONNECTIONS TO NEIGHBOURING COUNTRIES.



Estimated Costs:
USD 100 million (1984 prices)
regional part

Financing:
Secured: USD 43 million,
regional part
Foreign currency part : 90 %

Executing Agency:
Telecomunicacoes de Mocambique

Start:
1985

Duration:
10 years

Scope : Expansion of the telecommunication system up to 1995.

Contents : The regional part of the programme consists of :

Phase I Microwave backbone systems Maputo / Xai-Xai / Chokwe, Beira / Chimoro, Nampula / Nacala.

International switching centre of Maputo and Beira.

Switching systems in Maputo, Beira, Nampula, Nacala, Chimoro 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 The remaining part of the microwave backbone network, and III i.e. Xai-Xai / Massingao, Beira / Carra / Tete, Carra / (87 - 94) Quelimane, Tete / Ulongwe, and the international extension Tete / Blantyre, Chimoro / Mutare, Tete / Katate, 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 : 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 3 million, and Italy to finance supervisory consulting services for about USD 5 million. Discussions in progress with Germany for the financing of the new telex exchange of Beira. The regional part of Phase I will cost about USD 43 million for which the financing is secured as listed above, plus the telex exchange of Beira with a cost of USD 2.2 million not yet finalized.

So far the contract, financed by Italy, have been signed and the coming in to force expected shortly. The contract financed by ADB and BADEA signed and in to force. Agreement with SIDA for the ITSC of Maputo not yet finalized. Implementation works have been started in the central part of the Country.

Action : To complete the formalities with Italy and the agreement with SIDA. To implement the project.

5.5.3(1) SUB-PROJECT TO 5.5.3 INTERNATIONAL TRANSIT SWITCHING CENTRE (ITSC) IN BEIRA

Estimated Costs:

USD 3.2 million (1985 prices)
 USD 3.7 million (current prices)

Financing:

Secured : As for project 5.5.3,
 phase 1

Executing Agency:

Telecomunicacoes de Mocambique

Start:

1986

Duration:

2 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 contract has been awarded and in force.

Action : Implementation of the contract.

August 1985

2/8

5.5.3(2) NEW TELEX EXCHANGE IN BEIRA

Estimated Costs:

USD 2.35 million (1985 prices)
 USD 2.5 million (current prices)

Financing:

Requested : USD 2.5 million
 Foreign currency part : 90%

Executing Agency:

Telecomunicacoes de Mocambique

Start:

1985

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 1985

5.5.3(5) MICROWAVE LINK BEIRA - MUTARE

Estimated Costs:

USD 3.1 million (1985 prices)
 USD 3.4 million (current prices)

Financing:

Secured as for project 5.5.3 for the section Beira - Chimoio.

Executing Agency:

Telecomunicacões de Mocambique

Start:

1986

Duration:

2 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.

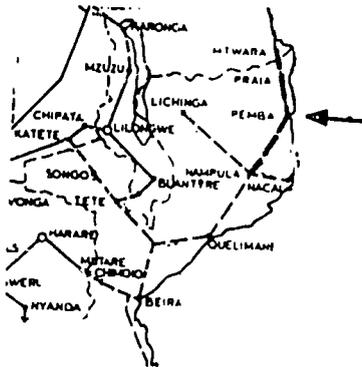
A provisional UHF radio link will be installed between M. Xiluvo - Chimoio - Mutare allowing the establishment of a maximum of 120 channels from Mozambique (Beira) and Zimbabwe by the end of 1985.

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 1985

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5.5.3(6) MICROWAVE LINK NAMPULA - MTWARA



Estimated Costs:
 USD 13 million (1985 prices),
 USD 18 million (current prices)

Financing:
 Requested : 18 million
 Foreign currency part : 80 %

Executing Agency:
 Telecomunicacoes de Mocambique

Start:
 1990

Duration:
 5 years

Scope : Provision of a microwave radio relay system between Nampula, Mozambique and Mtwara, Tanzania.

Contents : 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 PANA-FTEL link between Tanzania and Mozambique. The project will be implemented during phase III of Project No. 5.5.3.

Status : 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.

Action : Specifications for the entire route will be needed as well as finance. The time schedule should be checked with Tanzania.

August 1985

5.5.3(7) INTERNATIONAL TRANSIT SWITCHING CENTRE (ITSC) IN MAPUTO



Estimated Costs:
 USD 2.2 Million (1985 prices)
 USD 2.2 million (current prices)

Financing:
 Secured as for project 5.5.3,
 phase 1.

Executing Agency:
 Telecomunicacoes de Mocambique

Start:
 1986

Duration:
 2 years

Scope : To provide international subscriber dialling facilities to neighbouring countries and beyond from Mozambique.

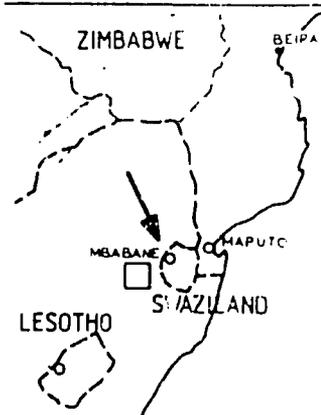
Contents : Implementation of an international transit switching centre (ITSC) in Maputo with initial capacity of 1000 telephone channels, provided with transit routing and charging facilities employing digital techniques. The ITSC is related to the implementation of the satellite communication system (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. SIDA agreed to finance this sub-project, but financial agreement not yet secured.

Action : Finalise the financial agreement with SIDA and award of the contract.

August 1985

5.6.2 COMBINED NATIONAL AND INTERNATIONAL TELEPHONE SWITCHING CENTRE (GATEWAY EXCHANGE) AT NTONDOZI



Estimated Costs:

USD 4.3 million (1985 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:

1985

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 (inter) national 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 Ntandozi 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 required 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 1985

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5.6.3 EXPANSION OF THE NATIONAL MICROWAVE TRUNK NETWORK

Estimated Costs:

USD 4.3 million (1985 prices)

USD 4.7 million (current prices)

Financing:

Secured : USD 4.7 million

Foreign currency part : 80 %

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 - Malherns : New UHF link;
- Ngomini - Lavumisa - Hluti - Kubuta : New UHF links;
- Multiple access Radio Equipment;
- Telegraph Bearer Equipment;
- Rural Subscriber Carrier Systems, 10 units.

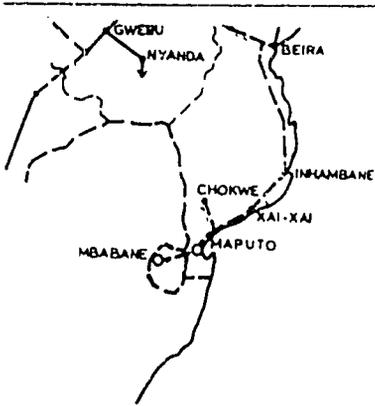
Status : Planning of the related exchange projects etc has commenced. SATCC has requested Italy to fund this project, and a financing agreement has been finalized.

Action : Awarding of the contract.

August 1985

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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 (1985 prices)

USD 1.4 million (current prices)

Financing:

Secured : USD 1.4 million

Foreign currency part : 93 %

Executing Agency:

Department of Posts and Telecommunications, Swaziland

Start:

1985

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 Gateway Exchange at Ndozi, the nodal point of the backbone microwave radio trunk network connects Mbabane with Manzini, Nhlanguano, Nlatikulu, Soteki, Big Bend, Mhlume, Piggs Peak, Mozambique and South Africa.

All equipment for this network has been purchased from Telettra of Italy.

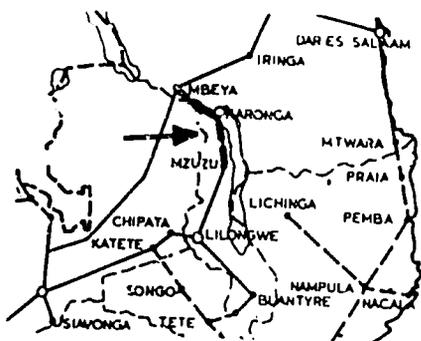
At the present all the microwave supergroups pass through Ntondozi at intermediate frequency level. With the introduction of the Gateway Exchange it will be necessary to bring down 20 supergroups to channel (audio) level so that these trunks can be switched. Total derived trunk circuits available for switching will be 1200.

Status : Planning of the additional trunk bearers to link other exchanges to the Gateway at Ntondozi has been commenced. Financing agreement with Italy has been finalized.

Action : Awarding of the contracts.

August 1985

5.7.1 MICROWAVE LINK MBEYA - TUKUYU - KARONGA - MZUZU



Estimated Costs:
 USD 9.0 million (1985 prices)
 USD 9.9 million (current prices)

Financing:
 Secured : USD 9.9 million
 Foreign currency part : 90 %

Executing Agency:
 Malawi Post Office
 Tanzania Port Telecommunications Corp.

Start:
 1984

Duration:
 RFS second quarter 1986

Scope : Provision of microwave radio relay system between Malawi and Tanzania.

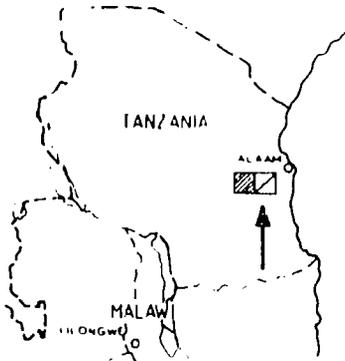
Contents : The project consists of the establishment of a high capacity microwave radio link on the route Mbeya - Tukuyu - Karonga - Mzuzu to carry the traffic between the two countries and to serve as an integral part of the terrestrial PANAFTEL network. At the outset the link will carry mainly terminating 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 1984. Implementation schedules forecast the concerning the loan during the second quarter of 1986.

Action : Implementation of the project.

August 1985

5.7.2 EXTENSION OF THE INTERNATIONAL TRANSIT SWITCHING CENTRE IN TANZANIA
(DAR ES SALAAM, ITSC)



Estimated Costs:
 USD 3.8 million (1985 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:
 1986

Duration:
 4 years

Scope : Provision of an extension unit for the international telephone centre in Dar es Salaam.

Contents : 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.

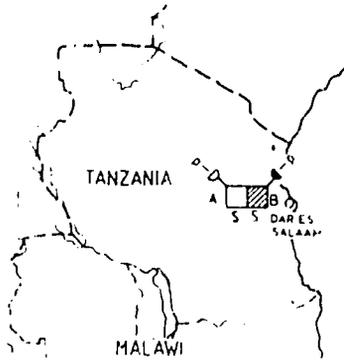
Interworking equipment for IMC and analog exchanges.

Status : Project description has been compiled by SATCC/TU and sent to ADB for consideration.

Action : Financing is being sought for the foreign currency part.

August 1985

5.7.3 STANDARD A EARTH SATELLITE STATION IN DAR ES SALAAM



Estimated Cost:
USD 10 million (1985 prices)

Financing:
Requested : USD 10 million
Foreign currency part : 100%

Executing Agency:
Tanzania Ports and Telecommunication corporation

Start:
1987

Duration:
4 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.

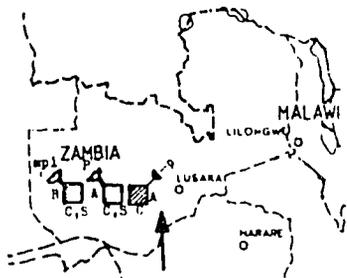
This project is strictly related to the extension of the International Transit Switching Centres (ITSC) in Dar es Salaam. Therefore the project must be scheduled so as to match the commissioning of the project.

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 1985

5.8.2 EXPANSION OF THE EARTH STATION AT MWEMBESHI (LUSAKA)



Estimated Costs:
USD 21 million (1985 prices)

Financing:
Requested : USD 21.0 million
Foreign currency part : 75%

Executing Agency:
Zambia Posts and Telecommunications Corporation

Start:
Phase I 1986

Duration:
Phase I : 1 year, 1987

Scope : Expansion of the capacity at the existing satellite earth station at Mwembeshi in order to :

- meet traffic growth on international routes
- free captive traffic handled by other transit centers
- improve diversity of routes out of Zambia
- improve the interconnectivity of the satellite earth section in the Region.

Contents : The project consists of :

- provision of new transmitting and receiving carriers FDM and CFDM for the existing standard A antenna facing IOR primary satellite
- installation of a new standard A antenna facing AOR primary satellite with SCPC and CFDM carriers
- installation of a new standard B antenna facing AOR major path 2 satellite, equipment with CFDM and SCPC carriers.

The project will involve expansion of the already completed ITSC of Lusaka.

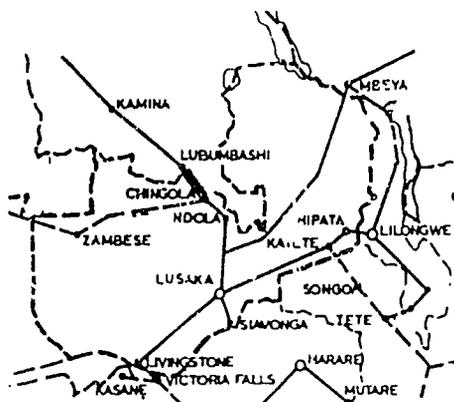
Status : Feasibility studies have been made by CIDA and ADB. Discussions are in progress to obtain financing from CIDA for the B antenna and for ADB for the A antenna.

Specification currently prepared by CIDA for B antenna and by INTELSAT for A antenna.

Action : Finalization of specification and financing agreements.

August 1985

5.8.3 MICROWAVE TERMINAL AT CHINGOLA TO COMPLETE THE LINK ZAMBIA - ZAIRE

Estimated Costs:

USD 0.2 million (1985 prices)

Zambian Side

USD 0.2 million (current prices)

Financing:

Secured : USD 0.2 million

Foreign currency part : 100 %

Executing Agency:

Posts and Telecommunications Corporation

Start:

1987

Duration:

One year

Scope : Provision of a microwave radio relay system between Zambia and Zaire.

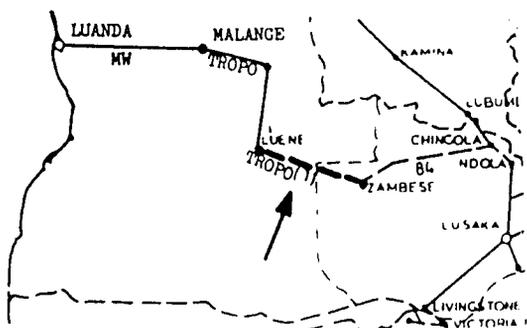
Contents : Supply, installation and commissioning of a link between Zambia on Lumumbashi in Zaire as part of the PANAFTEL network. The bulk of the work is in Zaire. The SATCC part of the project covers only the Zambian side.

Status : Technical specifications have been laid down by ITU. A bilateral project agreement has been signed early 1982 between Zambia and Zaire. ADB 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 1985

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 PANAFTE' 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 cross border 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.

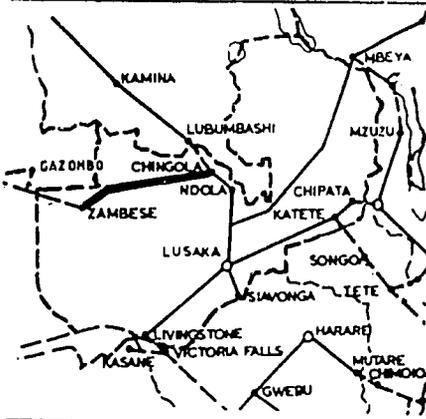
Status : Angola is in a process of expanding the national network with microwave and troposcatter radio relay systems up to Luene in the east, but the timing of works cannot be fixed with any accuracy.

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 1985

5.8.5 MICROWAVE LINK IN THE NORTH - WESTERN PROVINCE, ZAMBIA

Estimated Costs:

USD 14.5 million (1985 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:

RFS - mid 1985

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 and Mwinilunga, Solwezi and Zambezi via Kabambo, spur links to Kasempa and Chizera including buildings and access roads.

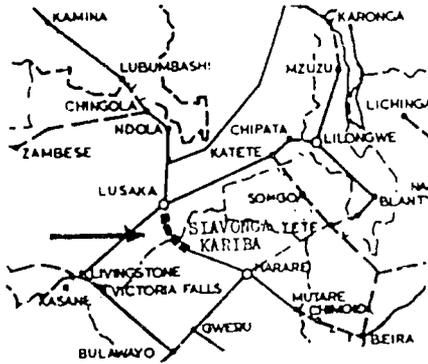
The main route will have a capacity of 960 channels and the spur to Mwinilunga 120 channels.

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 1985

5.8.6 MICROWAVE LINK KARIBA - (ZIMBABWE) SIAVONGA - (ZAMBIA) LUSAKA

Estimated Costs:

USD 1.5 million (1985 prices)

Financing:To be secured : USD 1.5 million
Foreign currency part : 100 %Executing Agency:

Post and Telecommunication Corporation, Zambia

Start:

1986

Duration:

One year

Scope : Provision of microwave system Zambia and Zimbabwe, linking directly Harare and Lusaka, having also capacity for the future terrestrial traffic Mozambique - Zambia.

Contents : The installation of a microwave link, 960 channels, from Lusaka to Siavonga and across the Zambian - Zimbabwean border to Kariba.

The existing backbone microwave link i.e. Lusaka - Livingstone which carries traffic to Zimbabwe, Botswana and other parts of Southern Africa is congested with the international traffic in the subregion. In order to meet the traffic demand and at the same time provide diversity, it is necessary to provide this terrestrial link.

Currently there is a 120 Channel UHF radio link operating between Lusaka and Siavonga and no civil works are involved. A 300 Channel system has been installed between Kariba and Harare at the Zimbabwean end.

The cost of the Zambian part of the project is estimated at USD 1.15 million whereas Zimbabwe would need a terminal at Kariba.

Status : Planning has been completed and requirements identified.

Action : Funds for the implementation of the project are being sought.

August 1985

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