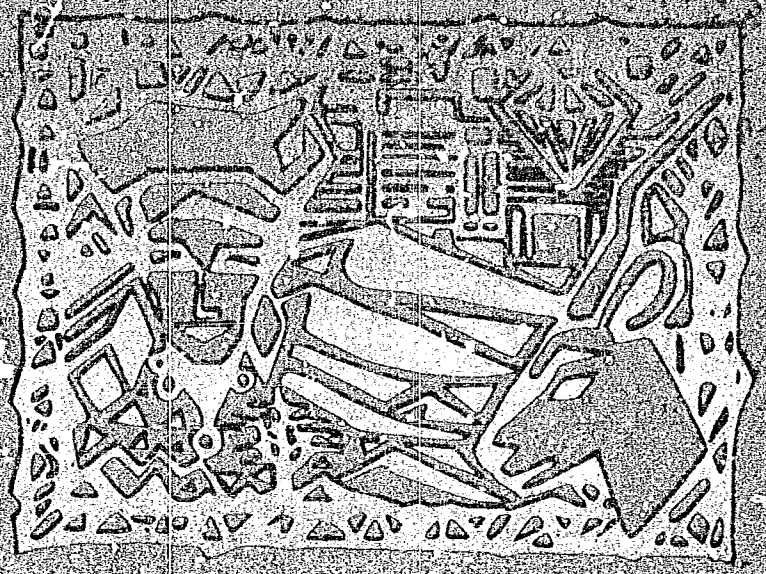
TRANSPORT AND COMMUNICATIONS

SOUTHERN AFRICAN DEVELOPMENT COORDINATION CONFERENCE



SADCC

Windhoek, Republic of Namibia

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PROJECT NUMBERING SYSTEM

Projects are numbered in a 3 digit system:

The first digit defines the Sector:

0 - Multimodal/Operational Coordination
1 - Roads
2 - Railways
3 - Ports and Water Transport
4 - Civil Aviation
5 - Telecommunications
6 - Meteorology
7 - Postal Services

The second digit indicates the country as follows:

0	-	Regional	6	-	Namibia
1	-	Angola	7	-	Swaziland
2	-	Botswana	8	-	Tanzania
3	-	Lesotho	9	-	Zambia
4	-	Malawi	10	-	Zimbabwe
5	-	Mozambique			

The third digit is a serial number.

ABBREVIATIONS

ADB	=	African Development Bank
AGIP Spa	=	AGIP Spa
AIDAB	=	Australian International Development Aid Bureau
ANG	=	Angola
AUS	=	Australia
AUSt	=	Austria
BADEA	=	Arab Bank for Economic Development in Africa
BEL	=	Belgium
BOT	=	Botswana
BRA	=	Brazil
CAN	=	Canada
CBI	=	Confederation of British Industries
CFTC	=	Commonwealth Fund for Technical Cooperation
CHI	=	Peoples Republic of China
CITES	=	Convention on International Trade in Endangered Species
DEN	=	Denmark
EEC	=	Commission of the European Communities
FAO	=	Food and Agriculture Organisation of the United Nations
FIN	=	Finland
FRA	=	France
FRG	=	Federal Republic of Germany
GDR	=	German Democratic Republic
IBRD	=	International Bank for Reconstruction and Development
ICAO	=	International Civil Aviation Organisation
ICE	=	Iceland
IDA	=	International Development Agency
IDRC	=	International Development Research Centre
IDU	=	Industrial Development Unit of the Commonwealth Secretariat
IFAD	=	International Fund for Agricultural Development
ILO	=	International Labour Organisation
IMPOD	=	Import Promotion Office for Products From Developing Countries
IRE	=	Ireland
ISNAR	=	International Service for National Agricultural Research
ITA	=	Italy
ITB	=	International Tourism Board
ITU	=	International Telecommunications Union
JAP	=	Japan
KUW	=	Kuwait Fund
LES	=	Lesotho
MAL	=	Malawi
MOZ	=	Mozambique
NAM	=	Namibia
NET	=	Netherlands
NOR	=	Norway
NORDICS	=	Nordic countries
OPEC	=	Organisation of Petroleum Exporting Countries
POR	=	Portugal
SADCC	=	Southern African Development Coordination Conference
SAFTTA	=	Southern African Federation of Travel and Tour Associations
SAREC	=	Swedish Agency for Research Cooperation With Developing Countries
SATEP	=	ILO Southern African Team for Employment Promotion
SPA	=	Spain

SWA	=	Swaziland
SWE	=	Sweden
SWI	=	Switzerland
TAN	=	Tanzania
TAZARA	=	Tanzania Zambia Railway Authority
UAPTA	=	Unit of Account of the Preferential Trade Area
UK	=	United Kingdom
UNDP	=	United Nations Development Programme
UNIDO	=	United Nations Industrial Development Organisation
USA	=	United States of America
USSR	=	Union of Soviet Socialist Republics
WB	=	World Bank
ZAM	=	Zambia
ZIM	=	Zimbabwe

1. EXECUTIVE SUMMARY

When SADCC was founded in 1980, 80% of international traffic of the six landlocked states used South African ports. This was due in part to the fact that SADCC corridors, except the TAZARA line had degenerated to inoperable levels because of South African sponsored sabotage and destabilisation activities exacerbated by poor funding, maintenance and management. The rehabilitation work of the past ten years has managed to reverse the desperate status of the 1980s. Today, 60% of transit traffic from the six landlocked countries moves through SADCC ports. Overall 70% of the total SADCC traffic moves through SADCC ports. The greatest achievement, therefore, has been the re-opening of the natural, traditional, shorter and secure routes to the sea for SADCC's landlocked states.

1.1 Surface Transport

The total international freight traffic over the currently operational regional corridors, i.e. Maputo-Swaziland, Maputo-Zimbabwe, Beira-Zimbabwe and Dar es Salaam-Zambia remained almost static during 1989 as compared with the previous year. Transit traffic over the Beira Corridor, and also over the Maputo-Zimbabwe (Beitbridge) route did however, show an increase.

This increase was more or less offset by a traffic decrease in the Dar es Salaam-Zambia Corridor (TAZARA). The factors mainly responsible for the decline in traffic over the Dar es Salaam-Zambia Corridor are lack of motive power, a high accident rate, and a shortage of empty wagons for loading metal at the mines.

The Nacala Railway is now open for transit traffic on a limited scale. Some commercial traffic on the Limpopo line is also being introduced. For the time being through traffic on the Benguela Railway is not possible.

The traffic routes through South Africa continue to play a significant but decreasing role for the landlocked SADCC States. Shortage of motive power and rolling stock in the regional corridors, together with the security situation in Mozambique and Angola seem to be the main restrictive factors as regards the development of traffic over these corridors. Implementation of the SATCC programmes in the regional corridors are consequently of vital importance, especially projects which seek to resolve the railway motive power and rolling stock problems.

A Technical Coordination Conference concerning the 10-Year Development Plan for Zambia Railways was held in Livingstone, Zambia, in June 1990. Its conclusions will be followed up by the Zambian Authorities.

1.2 Civil Aviation

The highest priority, from a flight safety point of view, has to be given to aeronautical telecommunications, to bring air navigation up to an acceptable international level. A recent study has confirmed this necessity.

A Civil Aviation 10-Year Development Plan is being prepared for presentation at the next Annual Consultative Conference in January, 1991.

Further activities within civil aviation aim at regional airline cooperation, coordinated utilization of aircraft maintenance facilities and cooperation between airlines in the joint utilization of aircraft. The number of flight connections among the Member States have increased notably due to these activities. There are currently 258 possible flights per week among member States, an increase of 15% over last year.

1.3 Telecommunications

The capital investment programme has been well established for the provision of the backbone regional telecommunications infrastructure for the next 10 years. Hence the emphasis has shifted to operational coordination and training projects.

Important digital International Telephone Switching Centres in Swaziland and Mozambique, and microwave links interconnecting Malawi, Zimbabwe and Mozambique have been commissioned. Single Channel Per Corridor (SCPC) Satellite links from Lesotho to Zambia are now operational.

Intra-SADCC traffic has increased by more than 20% per annum.

1.4 Meteorology

The main emphasis has been on the monitoring of the implementation of the FINNIDA/SATCC/WMO project. Phase I of this project is completed, and Phase II has been initiated. The overall objective is to continue the strengthening of the national meteorological services in the region to ensure that weather and climate services are able to meet the needs of all sectors of the economies of SADCC countries.

1.5 Postal Services

Progress in improving Postal Services has been slow due to the lack of a Development Plan and funds. Accordingly the Directors of Postal Administrations have recommended the preparation of such a plan.

1.6 Training

Professional, managerial and technical training projects in this sector are becoming increasingly important due to the overall objective to ensure self sufficiency in skilled manpower, improvement of productivity and the maximum use of installed capacity to ensure adequate return on investments.

1.7 Programme Review

The aggregate estimated costs of the present SATCC programme, including 15 new approved projects, is US$6.481 billion, which represents an increase of 18% over the figure presented in September 1989. The total secured funding (included funding under negotiation) is US$2.904 billion, or 45% of the cost.

The funding gap is particularly large in the projects under the Lobito Port Transport System, and in Civil Aviation. As pointed out in previous reports, the latter is of concern, as many projects under the Civil Aviation programme are directly related to flight safety.

2. REVIEW OF THE REGIONAL SITUATION

The following provides a brief overview of the current situation in the transport and communications sector. Some general information is provided with the main emphasis on the situation during 1989 calendar year:

2.1 Surface Transport

2.1.1 Capacities

The port capacities (excluding Namibia) under normal conditions per annum are estimated as follows:

		Million Tonnes
Maputo	*	5.8
Matola	(1.0 for POL)	5.9
Beira	(1.0 for POL)	4.8
Nacala	(0.5 for POL)	1.8
Dar es Salaam	(2.0 for POL)	5.0
Lobito	(1.0 for POL)	2.8

*POL - Petroleum, Oils and Lubricants.

The railway capacities on the lines in active operation, in million of net tonnes, are as follows:

	Up	Down
Tazara	3.0	3.0
Beira-Zimbabwe	2.0	2.3
Maputo-Swaziland	1.1	2.0
Maputo-Ressano Garcia	1.7	3.8

In addition estimated railway capacities on the Nacala and Limpopo lines after rehabilitation are as follows:

	Up	Down
Nacala	2.6	2.1
Limpopo	2.2	2.2

The overseas trade of the SADCC countries (excluding Namibia) is estimated to be about 8,5 million tonnes per annum. Although some basic development works are still being carried out in the ports of Dar es Salaam and Beira, the port and rail capacities are adequate to handle the regional traffic.

However, the critical shortage of motive power and rolling stock restrict the utilization of the available line capacities. Besides, traffic flow on the Maputo, Lobito and Nacala lines is constantly interrupted by banditry.

2.1.2 Performance

Fig. 1 and 2 show the regional rail and trunk road network, which serves intra-regional traffic as well as international transit traffic to and from the land-locked countries through regional corridors and ports.

However, major parts of this network in Angola and Mozambique are at present not in regular commercial service due to disruption caused by destabilization and sabotage.

The performance on currently operational regional corridors between 1988 and 1989 has been as follows:

- **Maputo-Swaziland (Goba Line)**

  The goods traffic on this railway line increased by 34% from 1988 to 1989, i.e. from 319,000 to 427,000 metric tonnes. The poor state of the line is the main restricting factor.

- **Maputo-Zimbabwe (Ressano Garcia Line)**

  The rehabilitation of the Limpopo Railway line in the Maputo Port Transport System is in progress, and at the end of April 1990 the National Railways of Zimbabwe (NRZ) and the Mozambique team (BMS) had resleepered 400 kilometres of the 534 kilometres Limpopo railway line. Some commercial traffic on the line is being introduced.

  Traffic decreased slightly over the period under review, from 266,000 to 216,000 metric tonnes.

  Throughput at Maputo Port increased from 2.17 million port tonnes in 1988 to 2.63 million in 1989, corresponding to an increase of 2.9%.

- **Beira Port Transport System**

  Transit traffic through the Port of Beira (excluding POL products) increased from 348,100 to 455,900 metric tonnes, or by 31%.

  The railway traffic on the Beira-Zimbabwe line did also regain momentum during 1989, and traffic increased by 27%. Zimbabwe was by far the biggest user of the corridor. Operations have improved following the adoption of an Operation's Improvement Plan by the Government of Zimbabwe.

  Throughput at Beira Port increased by 6% from 1.52 million port tonnes in 1988 to 1.76 million tonnes.

- **Nacala Port Transport System**

  There was no significant traffic over this corridor in 1988 and 1989. However, there is now a limited service on the railway line between the Malawi border and the rehabilitated port of Nacala. Spot rehabilitation of the line conducted jointly by Malawi and Mozambique and the full rehabilitation works commenced by a French Consortium on the Nampula-Cuamba Section of the line has made this possible.

  The port handled 419,000 port tonnes in 1989 compared to 409,300 in 1988.

- **Dar es Salaam Port Transport System**

  Total transit traffic carried by TAZARA decreased by 7%, i.e. from 837,000 metric tonnes to 775,600 metric tonnes.

The decline was caused by inadequate motive power, accidents which interrupted operations on the line for a total of 42 days, and shortage of empty wagons for loading metal at the mines in Zambia.

- **The Lobito Corridor**

  In the Lobito Port Transport System progress has been slow, partly due to poor follow-up response by some cooperating partners to financial pledges made at the Technical Coordination Conference held in January 1989. The security situation is another reason for slow programmes.

The land-locked SADCC countries are still significantly dependent on South African ports for their international traffic with overseas countries. This in particular pertains to Zimbabwe, Botswana and Malawi.

Implementation of the SATCC programmes in the regional corridors is of vital importance, especially regarding the projects dealing with railway motive power and rolling stock.

2.2 Civil Aviation

The highest priority, from a flight safety point of view, has to be given to the rehabilitation of aeronautical telecommunications, to bring air navigation standards up to acceptable international levels.

In order to expedite the mobilisation of resources in this very important area, it has been decided that a Civil Aviation 10-Year Development Plan be prepared and presented in conjunction with the Annual Consultative Conference in January, 1991.

To provide this plan with updated information a Survey of Airports Facilities and Operations in the SADCC Region has been completed. This survey has revealed that the statement made by ICAO in 1985 namely that: "Lack of implementation of the Telecommunication Air Navigation Plan among the SADCC States is one of the major obstacles to the provision of efficient and safe Air Transportation in the region", is still relevant.

The implementation of the Air Navigation Plan is a heavy burden to the States in the region, thus the financing organizations must support the States in this respect.

Further activities within civil aviation aim at regional airline cooperation, coordinated utilization of aircraft maintenance facilities and cooperation between airlines in the joint utilization of aircraft.

These SATCC activities are the same with those of the Yamoussoukro Declaration which is coordinated by the Government of Mozambique and controlled by ECA and an Inter-Agency Coordinating Committee whose members are ECA, OAU, African Civil Aviation Council (AFCAC), African Airlines Association (AFRAA) and ADB.

Through these activities some improvements have been achieved. Thus the number of flight connections between the Member States have increased during the last year due to the coordination of airline schedules. See the table below. The table shows the number of possible flight services per week among the SADCC States. Included are all direct flights as well as services via one or more transit stations within the region. A total travel time of maximum 36 hours per week has been accepted.

Year	1985	1986	1987	1988	1989
No. of Services	133	136	198	224	258
% Increase		2%	46%	13%	15%

2.3 Telecommunications

The SATCC programme of telecommunication projects has constantly grown over the years. The total cost now exceeds US$800 million. However with the exception of project elements in Mozambique and Angola not much further growth is anticipated as the capital investment programme has been well established for the provision of the backbone regional telecommunications infrastructure for the next 10 years.

The SADCC countries have a capacity of approximately 400,000 direct exchange lines with connected telephones having an average regional penetration factor of only 0.3 telephones per 100 inhabitants. Hence the emphasis on capital operational coordination and training projects for the expansion and rehabilitation of the telephone system.

The programme is aimed at extending the telecommunication services in support of regional transport corridors, economic activities and trade facilitation.

Important digital International Telephone Switching centres with International Subscriber Dialling (ISD) facilities in Swaziland and Mozambique and the PANAFTEL microwave links interconnecting Malawi, Zimbabwe and Mozambique have been

commissioned during the past year. Tanzania and Angola are yet to implement and commission the digital Gateway Exchanges with ISD facilities for automatic access to the regional network.

Efforts are being made for Namibia, the new SADCC Member State, to have independent International Gateway Exchange, Earth Station and extension of the backbone microwave link to interconnect with the PANAFTEL network and the SADCC countries. Currently international telecommunications routing including traffic to and from the SADCC member States is transiting via South Africa. It is necessary for Namibia to have an independent Gateway Exchange and Earth Station to alleviate the foreign exchange payments to South Africa and other transit centres outside the region.

Intra-SADCC traffic, notably as regards the landlocked countries with operational interconnecting PANAFTEL network links and digital ITSC exchanges, has grown more than 20% per annum especially in the following relations: Zambia-Zimbabwe; Botswana-Zimbabwe and Malawi-Zimbabwe.

Traffic to and from Tanzania along the PANAFTEL link has experienced slow growth. A major cause for the slow growth is the congestion and limited availability experienced on this route caused by the delays in the extension of the ITSC in Dar es Salaam and the rehabilitation of the Dodoma-Dar microwave link.

The main activities in telecommunications have been operational coordination and training to increase the flow of traffic, improve efficiency of utilisation and availability of the links and in preparation for the re-orientation of the regional earth stations to face the common 335.5 INTELSAT Satellite for regional interconnectivity.

The main outstanding problem is the lack of funding for the completion of the missing links in the regional transmission Network infrastructure to interconnect and improve telephone and telex traffic flow to Angola, Mozambique and Namibia using the PANAFTEL microwave radio systems and the provision of satellite links for the interconnectivity of Lesotho, Swaziland and the rest of SADCC without transiting through South Africa and Europe.

The priority projects which need financing are:

5.0.4	Earth Station Interconnectivity Plan
5.2.3)	Digital Microwave Links to interconnect
5.6.2)	Botswana and Namibia
5.5.5	Part of, Telecommunications Project in Beira Port Transport System (Cross-border Digital Microwave Link Chimoio-Mutare)
5.6.1	Extension of Regional and International Telecommunication Services, Namibia

5.6.3 Extension of Trunk Network, Namibia
5.9.9 Microwave Link Zambezi-Luena, Angola
5.10.8 Digital Microwave Link Gweru (Zimbabwe)-Maputo (Mozambique)

Single Channel Per Carrier (SCPC) Satellite links from Lesotho to Zambia have been commissioned. Further SCPC links from Swaziland and Angola into Zambia for regional transit are currently being implemented.

With the interconnection and commissioning of Frequency Division Multiplexing (FDM) Satellite circuits by 1990 between Mozambique and Zambia, Malawi and Tanzania, the transiting of intra-SADCC traffic through Europe and South Africa will not be necessary.

The second problem is the need to introduce efficient and automatic International Subscriber Dialling (ISD) Service in the regional and international network by the continued introduction of modern digital gateway, national and local exchanges. For full ISD Service, optimisation of the regional and international exchanges throughout the SADCC countries is an absolute necessity. This will only happen through harmonisation and adoption of common technical signalling systems in order to avoid the proliferation of different and incompatible national technical standards.

A further important aspect of the SADCC network development concerns the harmonisation of conditions for the use of the network infrastructure in the field of operations and maintenance including the use and allocation of frequencies, tariff principles and structure for intra-SADCC traffic.

The organisation of the operation and the management of the network infrastructure among the SADCC Administrations is to be developed on a regional basis for efficient traffic flow.

More than 90% of the equipment in the regional network is manufactured and supplied from outside the SADCC countries and hence the requirement of foreign exchange for the repairs and critical spares for operation and maintenance of the network. In order to alleviate this critical situation, projects for the Establishment of Regional Maintenance and Repair Workshops to service and repair electronic cards and calibrate test equipment have been included in the SATCC programme, viz:

Project 5.0.6 Establishment of AXE 10 Repair Centre
Project 5.0.10 Establishment of Maintenance Repair Centres

Further, SATCC has in its programme Project 5.0.6, Study on the Development of a Regional Manufacturing Strategy, which aims initially at the technical standardisation of specifications of equipment to be used in the regional network to ensure commonality of the products in the SADCC

countries, and at the feasibility of the establishment of local manufacturing plants in products where there is an assurance of a regional market.

Finally the introduction of different types of new technologies in the telecommunication network make considerable demands in terms of education and training of engineers and technicians who will be operating and maintaining the infrastructure. A combined effort is being undertaken through SATCC Project 0.0.3(09), Training Needs Survey, to determine a coordinated training programme in the region and to investigate the establishment of an Advanced Level Training Institute in the region for engineers and managers who will be operating the systems.

2.4 Meteorology

The status of the different components of meteorological services in the region are as follows:

a) The overall rehabilitation and strengthening of the meteorological observing networks, the national telecommunication systems for meteorological data collection and dissemination, the national maintenance workshops and the station inspection capabilities carried out has tremendously improved the quality and quantity of meteorological data received at the national meteorological analysis centres in the region.

b) In human resources development phenomenal changes in the quality and quantity of meteorological personnel have been achieved in Lesotho, Swaziland, Mozambique and Zimbabwe.

c) The financing of the Regional Telecommunication Hub (RTH) - Lusaka, has not been secured so far. However, it is foreseen within FINNIDA/SATCC/WMO meteorology project to improve the international and regional exchange of data through the provision of Data Collection Platforms (DCP) and Data Receiving Stations (DRS).

d) The establishment of the Regional Drought Monitoring Centre (RDMC) in Harare is on-going and the first products would be issued in a year or two.

2.5 Postal Services

This sector has had limited achievements due to poor funding. However, notable developments include introduction of Expedited Mail Service, development of postal terminals to achieve better mail handling and a pilot study to introduce a postal giro system.

A 10-Year Development Plan for this sub-sector is going to be prepared.

3. REVIEW OF THE PROGRAMME

3.1 The SATCC programme of action as a whole has continued to grow over the years. During 1989/1990, aggregate estimated cost of the SATCC programme has grown from US$5.512 billion to US$6.481 billion, or by 10.7%. During the same period, the total funding secured and under negotiation has risen from US$2.623 billion to US$2.904 billion. The increase in the size of the programme has been caused by continuous addition of new programmes and projects.

3.2 It is the intention of the Sector to keep the growth of the programme under constant check so that the growth rate can be in line with available resources, and SADCC's capacity to implement the programme.

3.3 SATCC's programme is also shifting from identification, definition and launching of new capital investment programmes/projects, to matters related to operational coordination and training, to ensure efficient utilization of the existing and renewed infrastructures and facilities. This will include key issues relating to viable tariff structures; effective management structures; proper maintenance systems, and completion of on-going programmes and projects.

3.4 The Sector's future emphasis will also be placed on key issues relating to development and implementation of realistic and viable tariff structures; establishment of effective management structures; proper maintenance systems; completion of on-going programmes and projects and professional and technical training to ensure self sufficiency and increased productivity.

3.5 So far, the Sector's programme has focussed on transport corridors through Mozambique and Tanzania. Following the successful Technical Coordination Conference on the Lobito Corridor, and the prospects for peace in Angola, SATCC will also now focus on the development of the Atlantic sea routes, in particular Lobito and Namibe Port Transport Systems, to complete the route network of the region.

3.6 A Special Assistance Programme for Angola has been prepared outside the ordinary programme of SATCC. A summary of the proposed projects are attached hereto as Annex 3.

3.7 Following the independence of Namibia, and its accession to SADCC, this country is now participating in SATCC activities. A number of Namibian projects within the roads, telecommunications and civil aviation sectors have already been proposed for inclusion in the SATCC programme.

3.8 New Projects

The following new projects were approved:

Intra-Regional Surface Transport Projects

1.6.1 Construction of the Gobabis to Buitepos Road, Namibia
1.6.2 The improvement of the route Rundu-Katima Mulilo and Ngoma on the Namibia/Botswana border
1.6.4 The Ovamboland Road Network Improvement Master Plan
1.6.5 Construction of a bitumen surfaced road between Goageb and Aris
1.6.6 A feasibility study for the provision of a climbing and passing lanes on the roads between Windhoek and Windhoek International Airport.

Civil Aviation

4.6.1 ATC Training, Namibia
4.6.2 Installing of an Air Traffic Radar at Windhoek Airport, Namibia
4.6.3 Installation of ILS at Windhoek Airport, Namibia
4.6.4 Enroute Navigation Aids for Civil Aviation, Namibia
4.6.5 Technical Assistance Civil Aviation Department, Namibia

Telecommunications

5.6.1 Extension of Regional International Telecommunication Services, Namibia
5.6.2 Master Plan Study for Namibia
5.6.3 Extension of Trunk Network, Namibia
5.8.8 Provision of Digital Exchanges, Tanzania
5.8.9 Extension of PANAFTEL links, Tanzania

4. CURRENT STATUS OF PROJECTS

4.1 Summary of Status of Funding

The following sections of this chapter, by transport system/subsector, list the projects in the programme subdivided into the following categories concerning the status of financing:

a) projects with funding fully secured;

b) projects requiring additional external funding;

c) projects with no external funding so far secured.

A brief description of each project in the section on Project Descriptions and the cost and financing status of each project is given in Annexes. More details are available at the SATCC technical Unit, Maputo.

4.2 Operational Coordination Projects

The present programme includes 31 projects concerning regional operational co-ordination, with a total cost of US$96.1 million, of which US$32.5 million or 34% is secured, including funding under negotiation (Table 2A).

a) Projects with full funding secured:

0.0.6	SATCC Statistics Data System
0.0.8	Regional Transport Operations Plan
2.0.8	Study on Rail Wagon Standardization and Wagon Spares Parts
4.0.11	Review of SATCC Airline Industry

b) Projects requiring additional external funding:

0.0.1	Technical Assistance to the SATCC
0.0.2	Operational Coordination Development Programme
0.0.4	Transit Transport Project
0.0.5	SATCC Technical Services Fund
1.0.1	Package of Road Safety
1.0.2	Package of Weighbridge Projects
1.0.3	Implementation of Harmonized Road Maintenance Management System in SADCC Countries
5.0.3	Study on AXE 10 Repair Centre
5.0.4	Implementation Plan for Regional Earth Station Connectivity Project
5.0.5	Study on the Harmonization of Telephone and Telex Tariffs for the Sub-Region
5.0.6	Study on the Development of a Regional Manufacturing Strategy

c) Projects with no secured external funding:

0.0.7	SATCC Housing in Maputo
0.0.9	Package of Transport Statistics Programme
2.2.10	Equipment for Maintenance Depots for Botswana Railways
3.0.4	Package of Port Statistics Programmes
4.0.01	Expansion of DCA Flight Calibration Unit, Tanzania
4.0.03	Study on Coordinated Use of Aircraft Maintenance Facilities
4.0.05	Study on General Aviation Activities
4.0.07	Updating of Aeronautical Information Services
4.0.10	Study on Joint Use of Wide-body Aircraft and Sub-regional Airline Cooperation

5.0.7	Model Study on Maintenance Procedure and Schedules for PANAFTEL Terrestrial Microwave Radio Systems
5.0.8	Regional Data Communication Strategy Study
5.0.9	Study on Optimization of Regional Switching and Signalling Facilities
5.0.10	Study on Establishment of Regional Maintenance/Repair Workshops
5.0.11	Workshop/Seminar on Digital Synchronisation Planning

4.3 <u>Training Projects</u>

The training programme includes 20 separate projects, the combined cost of which is US$91.5 million. US$56.9 million or 62% is secured including funding under negotiation (Table 2B).

a) Projects with full funding secured:

1.0.4	Task Group for the Road Transport Training Plan
2.0.6	Development of Railway Training, Regional
2.0.7	Seminar on Marketing for Ports and Railways
2.5.13	Development of Railways Training for Portuguese Speaking Personnel
2.7.3	Provision of Technical Assistance and Management Training to Swaziland Railways
3.5.5	Port Staff Training Institute, Mozambique
4.0.06	Civil Aviation Manpower and Training Requirements Survey
7.4.2	Upgrading of Postal Wing of the MCTC in Blantyre, Malawi

b) Projects requiring additional external funding:

0.0.3	Training Development Programme (several sub-projects)
6.0.1	Meteorological Expert Services and Fellowships
7.0.1	Postal Training Development programmes

c) Projects with no secured external funding

4.5.4	SADCC Boeing 737 flight Training Centre
4.9.5	Extension of Zambia Air Services Training Institute (ZASTI)
4.6.1	ATC Training, Namibia
5.1.6	Expansion of Telecommunications Training Centre, Angola
5.4.4	Expansion of Telecommunications Training Centre, MPO, Malawi
7.1.2	Development of Postal Training in Angola
7.3.1	Postal Training School Lesotho
7.5.2	Development of Postal Training in Mozambique

4.4 Maputo Port Transport System

The Total cost of the 22 main projects concerning the Maputo Transport System is estimated at US$972.6 million, of which US$405.3 (42%) is secured including funding under negotiation (Table 2C).

a) Projects with full funding secured:

1.3.5	Upgrading of the Road Mokhotlong-Oxbow, Lesotho
2.2.2	Rehabilitation of Railway Telecommunication Facilities, Botswana
2.2.4	Renewal of Train Working System, Botswana
2.2.9	Rescue Crane for Botswana Railways

b) Projects requiring additional external funding:

1.3.1	Upgrading of Road Mohale's Hoek-Quthing-Qachas Nek, Lesotho
1.5.4	Rehabilitation of the Road Maputo-Swaziland Border
1.7.1	Rehabilitation and upgrading of the Road Mozambique Border at Lomahasha - Siteki - Big Bend, Swaziland
2.2.1	Rehabilitation of the main Railway Line Botswana
2.2.6	Procurement of Shunting Locomotives and Rolling Stock, Botswana Railways
2.5.1	Rehabilitation of the Mozambique-Swaziland Railway
2.5.6	Rehabilitation of Maputo-Chicualacuala Railway
3.5.1	Maputo Port, Mozambique

c) Projects with no secured external funding:

1.3.2	Upgrading and Reconstruction of the Road Taung - Mokhotlong - Sani Top, Lesotho
1.3.3	Upgrading of the Road Thaba Tseca - Taung - Mpiti, Lesotho
1.3.4	Construction of a New Road Ramabanta - Semonkong -Sekake, Lesotho
1.5.6	Road Linking Southern Zimbabwe with Maputo Area
1.7.2	Improvement of Mbabane - Manzini Road, Swaziland
2.2.8	Exchange Yard at Rakhuna, Botswana Railways
2.7.1	Rolling Stock for Swaziland Railway
2.7.4	Dieselization of Swaziland Railway
2.7.5	Operating Securing and Safety Related Equipment for Swaziland Railway
2.7.6	Integrated Telecommunications for Swaziland Railway

4.5 Beira Port Transport System

The programme includes 7 projects concerning the Beira Port Transport System. Most of these are divided in several sub-projects (for details see table 2D). The total cost of the projects is US$739.4 million of which US$467.9 million (63%) is secured, including funding under negotiation.

a) Projects with full funding secured:

1.9.4	Rehabilitation of the road Kafue-Chirundu, Zambia
1.10.1	Rehabilitation of Harare-Chirundu Road, Zimbabwe

b) Projects requiring additional external funding:

0.5.1	Multimodal projects in the Beira Port Transport System Development Plan
1.5.1	Road Projects in Beira Port Transport System Development Plan
1.10.3	Upgrading of Eastern end of Harare - Mutare -Mozambique Border Road, Zimbabwe
2.5.3	Railway Projects in Beira Port Transport System Development Plan
3.5.2	Port Projects in Beira Port Transport System Development Plan

c) Projects with no secured external funding:

None

4.6 Nacala Port Transport System

The cost of the 5 projects concerning the Nacala System is estimated at US$285.3 million, of which US$175.2 million (61%) are secured including funding under negotiation (Table 2E).

a) Projects with full funding secured:

1.9.6	Rehabilitation of the Road Lusaka-Chipata, Zambia
3.5.3	Rehabilitation of the Port of Nacala

b) Projects requiring additional external funding:

2.5.5	Rehabilitation of the Nacala-Entre-Lagos Railway, Mozambique

c) Projects with no secured external funding:

1.4.1 Study on the Upgrading of the Road Mangochi-Chiponde/Mandimba-Mitande, Malawi/Mozambique
2.4.2 Rehabilitation and Acquisition of Locomotives, Rolling Stock and Maintenance Equipment, MR

4.7 <u>Dar es Salaam Port Transport System</u>

The main projects in the Dar es Salaam System are estimated to cost a total of US$863.5 million. US$603.0 million or 70% of this is secured including funding under negotiation (Table 2F).

a) Projects with full funding secured:

1.4.3 Road Link Balaka-Salima-Karonga-Uyole, Malawi/Tanzania
1.4.4 Road Shuttle Service Malawi/TAZARA
1.9.8 Rehabilitation of the TANZAM Highway, Zambia
3.8.1 Development of Navigation of Lake Niassa/Nyasa/Malawi, Malawi, Mozambique, Tanzania

b) Projects requiring additional external funding:

1.8.3 Rehabilitation/Strengthening of the Tanzam Highway, Tanzania
2.8.1 TAZARA 10-Year Development Plan and Malawi-Dar es Salaam Projects
3.8.2 Development of the Port of Dar es Salaam, Tanzania

c) Project with no secured external funding:

None

4.8 <u>Lobito Port Transport System</u>

The programme includes 6 main projects concerning the Lobito System, again consisting of numerous sub-projects. The projects in the Luanda Port are also included in this system. The total estimated cost is US$577.7 million, of which only US$54.6 million (10%) is secured including funding under negotiation (Table 2G).

a) Projects with full funding secured:

1.9.1 Study on Angola - Zambia Road Link

b) Projects requiring additional external funding:

0.1.1	Multimodal projects in the 10-year Plan for the Lobito Port Transport System
1.1.3	Roads and Road Transport Projects in the 10-year Plan Lobito Port Transport System
2.1.1	Benguela Railways Projects in the 10-year Development Plan for Lobito Port Transport System
3.1.1	Port and Water Transport Projects in the 10-year Development Plan for Lobito Port Transport System
3.1.2	Development of the Port of Luanda

c) Projects with no external funding secured:

None

4.9 <u>Intra-Regional Surface Transport Projects</u>

Altogether 36 projects are included in this category, with a total cost estimate of US$1.412 billion, of which US$597.9 million (42%) is secured including funding under negotiation (Table 2H).

a) Projects with full funding secured:

1.5.2	Rehabilitation of the Zimbabwe-Tete-Malawi Road, Mozambique
1.9.5	Rehabilitation of the Lusaka-Kapiri-Chingola-Zaire Border road, Zambia
1.9.7	Improvement of the Road Lusaka-Mongu, Zambia
2.2.7	Establishment of Dry Ports/ICD's, Botswana
2.4.3	Establishment of Dry Ports/ICD's, Malawi
2.10.1	Repair Tracks and Wagon Maintenance Equipment, NRZ, Zimbabwe
2.10.2	Equipment for Central Elect. Workshop, NRZ, Zimbabwe
3.9.1	Study of Navigability of Zambezi and Shire Rivers

b) Projects requiring additional external funding:

1.2.1	Partial Reconstruction of Nata-Kazangula Road, Botswana
1.2.2	Construction of Jwaneng-Mamuno Road Link, Botswana
1.4.2	Study on the Upgrading of the Road Blantyre-Milanje-Mocuba, Malawi/Mozambique
1.8.1	Rehabilitation and Upgrading of the Mtwara-Songea - Mbamba Bay Road, Tanzania
1.9.3	Rehabilitation of the Lusaka-Kafue-Livingstone -Kazangula Road, Zambia
2.5.8	Rehabilitation and Maintenance of Wagons CFM, Mozambique

2.5.11	Computerized Wagon Control System for CFM, Mozambique
2.5.12	Rehabilitation and Acquisition of Locomotives for CFM, Mozambique
2.9.1	Zambia Railways 10-Year Development Plan
2.10.4	Acquisition and Rehabilitation of Locomotives, NRZ, Zimbabwe
3.5.4	Navigational Aids, Mozambique

c) Projects with no secured external funding:

1.1.1	Study on the Road N'Zeto-Soyo
1.1.2	Studies of Four Roads, Angola
1.2.3	Improved Ferry Service at Kazungula, Botswana/Zambia
1.2.4	Study on Maun-Ghanzi Road, Botswana
1.5.5	Study on Unity Bridge and Access Roads, Mozambique/Tanzania
1.6.1	Construction of the Gobabis-Buitepos Roads, Namibia
1.6.2	Improvement of route Rundu, Katima, Mulilo and Ngoma, on border to Botswana, Namibia
1.6.4	The Ovamboland Road Network Improvement Master Plan, Namibia
1.6.5	Construction of a bitumen surfaced road between Goabeb and Aus, Namibia
1.6.6	Climbing/passing lanes on road between Windhoek and Windhoek International Airport
2.3.1	Establishment of Dry Port/ICD in Lesotho
2.4.4	Improvement of Communications Systems, Malawi Railways
2.7.2	Establishment of Dry Port/ICD in Swaziland
2.10.5	Acquisition of Coaches for the National Railways of Zimbabwe
2.10.6	Procurement of Rail Trolleys for the National Railways of Zimbabwe

4.10 Civil Aviation

The total estimated cost of the 25 civil aviation projects in the programme is US$362.7 million, of which US$71.4 million or 20% are secured including funding under negotiation (Table 2I).

a) Projects with full funding secured:

4.2.1	Acquisition of New Aircraft for Air Botswana
4.10.4	Improvement and Expansion of Radar Coverage, Zimbabwe

b) Projects requiring additional external funding:

4.1.1	Civil Aviation Projects in the 10-Year Development Plan for the Lobito Port Transport System
4.2.2	Contingency Improvement to Gaborone Airport, Botswana
4.4.1	New Airport at Mzuzu, Malawi
4.7.1	Development of Matsapa Airport, Swaziland

c) Projects with no secured external funding:

Under this heading there are a number of projects, which have not been funded during a number of years. As they are of fundamental importance for the flight safety more detailed arguments are given.

In spite of its importance for the flight safety project 4.0.8(1) Rehabilitation of Aeronautical Telecommunications (US$30,0 million) has got no pledges for funding.

Already in November 1985 the ICAO Nairobi office declared that: "Lack of implementation of the Telecommunication Air Navigation Plan among the SADCC States is one of the major obstacles to the provision of efficient and safe Air Transportation in the region". (Statement at the joint meeting of DCA/Airlines Chief Executives in Arusha).

In the general overview of the Telecommunications Ten-Year Development Plan (issued March 1987) it is stated that the requirements for improvement and rehabilitation - including training and organizational establishment - were outlined by an ICAO study in 1980 and updated in 1983. (SATCC project 4.0.8). In general the region's facilities were found to be inadequate and to represent a threat to air safety (paragraph 3.1.4).

These statements are even more valid today.

The Projects with no secured external funding are:

4.0.8	Rehabilitation of Aeronautical Telecoms in the Region
4.2.3	Flight Information Region for Botswana
4.3.3	Acquisition of New Aircraft for Air Lesotho
4.3.4	Rehabilitation of Aeronautical Telecommunications, Lesotho
4.3.5	Extension of Moshoeshoe I International Airport, Lesotho
4.5.3	Civil Aviation Projects in Beira Port Transport System Development Plan
4.5.5	Development of Maputo Airport, Mozambique
4.5.6	Development of Inhambane Airport, Mozambique
4.5.7	Development of Vilanculos Airport, Mozambique

4.5.8	Improvement of ATC Equipment in Beira FIR, Mozambique
4.6.1	ATC Training, Namibia
4.6.2	Installation of an Air Traffic Control Radar at Windhoek Airport, Namibia
4.6.3	Installation ILS at Windhoek Airport, Namibia
4.6.4	En-route Navigation Aids for Civil Aviation, Namibia
4.6.5	Technical Assistance Civil Aviation Department, Namibia
4.7.3	Development of Royal Swazi National Airways
4.9.1	Study on Improvement of Livingstone, Ndola and Southdown Airports, Zambia
4.9.4	Study on New Hangar at Lusaka International Airport, Zambia
4.9.6	Lusaka International Airport Development, Zambia
4.10.3	Modernization of AFTN Message Switching Centre at Harare International Airport

4.11 <u>Telecommunications</u>

The 44 telecommunications projects included in the programme are estimated to cost a total of US$1.030 billion, of which US$416.6 million (40%) is secured including funding under negotiation (Table 2J).

a) Projects with full funding secured:

5.1.2	Expansion of the International Telecommunication Services, Angola
5.2.5	Rural Telecommunications Development Study, Botswana
5.7.3	Expansion of the National Microwave Trunk Network, Swaziland
5.7.4	Provision of Group and Channel Translating Equipment at Ntondosi for ITSC, Swaziland International
5.8.3	Standard A Earth Satellite Station at Dar es Salaam, Tanzania
5.9.1	Extension of the International Telephone Switching Centre (ITSC) in Lusaka, Zambia
5.9.4	Microwave Link Zambezi - Luene, Zambia
5.9.6	Microwave Link Kariba (Zimbabwe) - Siavonga (Zambia) Lusaka
5.10.6	Provision of Packet Switching for Data Network in Zimbabwe

b) Projects requiring additional external funding:

5.1.1	Telecommunications Projects in the 10-Year Development Plan for Lobito Port Transport System
5.1.10	Provision of Domestic Satellite Network ANGOSTAT for Angola

5.2.3	Expansion of the Microwave Trunk Network, Botswana
5.3.2	Rural Communications System, Lesotho
5.5.1	National/Regional Satellite Communications System, Mozambique
5.5.3	National Telecommunications Development Project with Connections to Neighboring Countries (reg. Part)
5.5.5	Telecommunications Projects in Beira Port Transport System Development Plan
5.5.6	Maritime Radio Communications Projects, Mozambique
5.9.2	Expansion of the Earth Station at Mwembeshi (Lusaka)
5.10.7	Supply of Digital Telephone Exchanges, Zimbabwe

c) Projects with no secured external funding:

5.1.8	Provision and Expansion of National Telex Exchanges, Angola
5.1.9	Provision of Digital Exchanges for Angola Development Programme (1990-2000)
5.3.3	Rural Automatic Telephone Exchanges, Lesotho
5.3.4	Fundamental Master Plan and Planning Unit, Lesotho
5.3.5	Provision of New ITSC and Digitalization of National Exchanges, Lesotho
5.4.3	Supply of Digital Equipment for the Expansion of Telephone Exchanges in Blantyre-Lilongwe-Zomba
5.6.1	Extension of International Telecommunications Services, Namibia
5.6.2	Telecommunications Master Plan Study, Namibia
5.6.3	Extension of Backbone Trunk Network, Namibia
5.7.5	Extension of National Switching Centre and Associated Network Digitalization, Swaziland
5.8.2	Extension of ITSC Capacity, and Associated Telephone exchanges Dar es Salaam, Tanzania
5.8.4	New Transit Digital Telephone and Telex Exchange for Dodoma, Tanzania
5.8.5	Digital Microwave Link Dar-Dodoma-Zanzibar and Exp. of Multiplex Equip. at Dodoma
5.8.7	Provision of Digital Microwave Link Dar es Salaam-Mtwara-Songea, and exchange at Songea, Tanzania
5.8.8	Provision of Digital Exchanges, Tanzania
5.8.9	Rehabilitation of Trunk PANAFTEL Links, Tanzania
5.9.3	Microwave Terminal at Chingola to Complete the Link Zambia-Zaire
5.9.7	Zambia Message Switching System in Lusaka
5.9.9	Masterplan Study and Fundamental Planning Unit for Zambia
5.9.10	Upgrading Lusaka-Livingstone Microwave Trunk Network, Zambia

5.10.8 Expansion of the Earth Station at Mazowe, Zimbabwe
5.10.9 Provision of Telex Exchange and Network, Zimbabwe
5.10.10 Extension of ITSC GWERU, Zimbabwe
5.10.11 Digital Microwave Link Gweru (Zimbabwe) to Maputo, Mozambique

4.12 **Meteorology**

The number of meteorology projects in the programme is 10. The total cost is estimated at US$18.9 million and US$9.3 million (49%) is secured including funding under negotiation (Table 2K).

a) Projects with full funding secured:

6.0.2 Regional Drought Monitoring Centre, Harare
6.0.8 Data Rescue Project

b) Projects requiring additional external funding:

6.0.4 Regional Maintenance Support of Meteorological Services
6.0.5 Data Processing in Meteorological Services
6.0.6 Meteorological Observing Networks
6.0.7 Meteorological Telecommunications

c) Projects with no external funding:

6.0.3 Regional Meteorological Telecommunications HUB and Data Exchange, Lusaka
6.5.1 Meteorological Buoys for Mozambique
6.5.2 Aeronautical Equipment for Airports in Mozambique
6.8.1 Meteorological Buoys for Tanzania

4.13 **Postal Services**

The programme includes 4 projects in postal services, with a total cost of US$31.6 million, of this, US$13.7 million or 43% is secured including funding under negotiation (Table 2L).

a) Projects with full funding secured:

None

b) Projects requiring additional external funding:

7.0.3 Technical Assistance to Postal Services
7.0.4 Regional Programme for the Development of Postal Terminals
7.5.1 Sorting Centre and Stamp Printing Facilities in Maputo, Mozambique

c) Projects with no secured external funding:

7.0.2 Feasibility Study on the Introduction of a Postal Giro System in the SADCC Countries.

TRANSPORT AND COMMUNICATIONS

Multi Modal/Operational Coordination

XXX

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Figures

Figure 1 Regional Surface Transport Networks and Airports

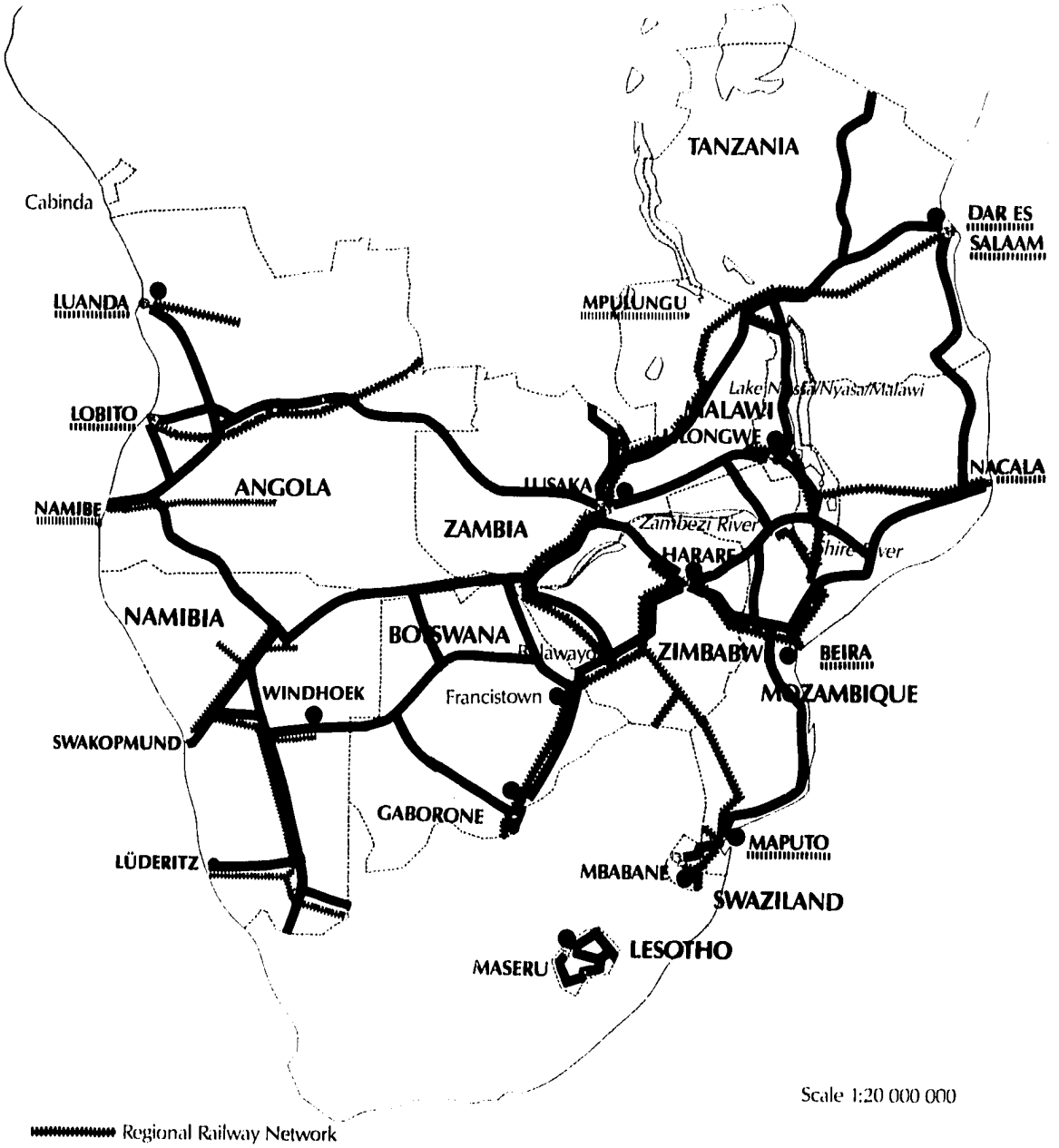


Figure 2 Railway, Road, Port and Water Transport Projects

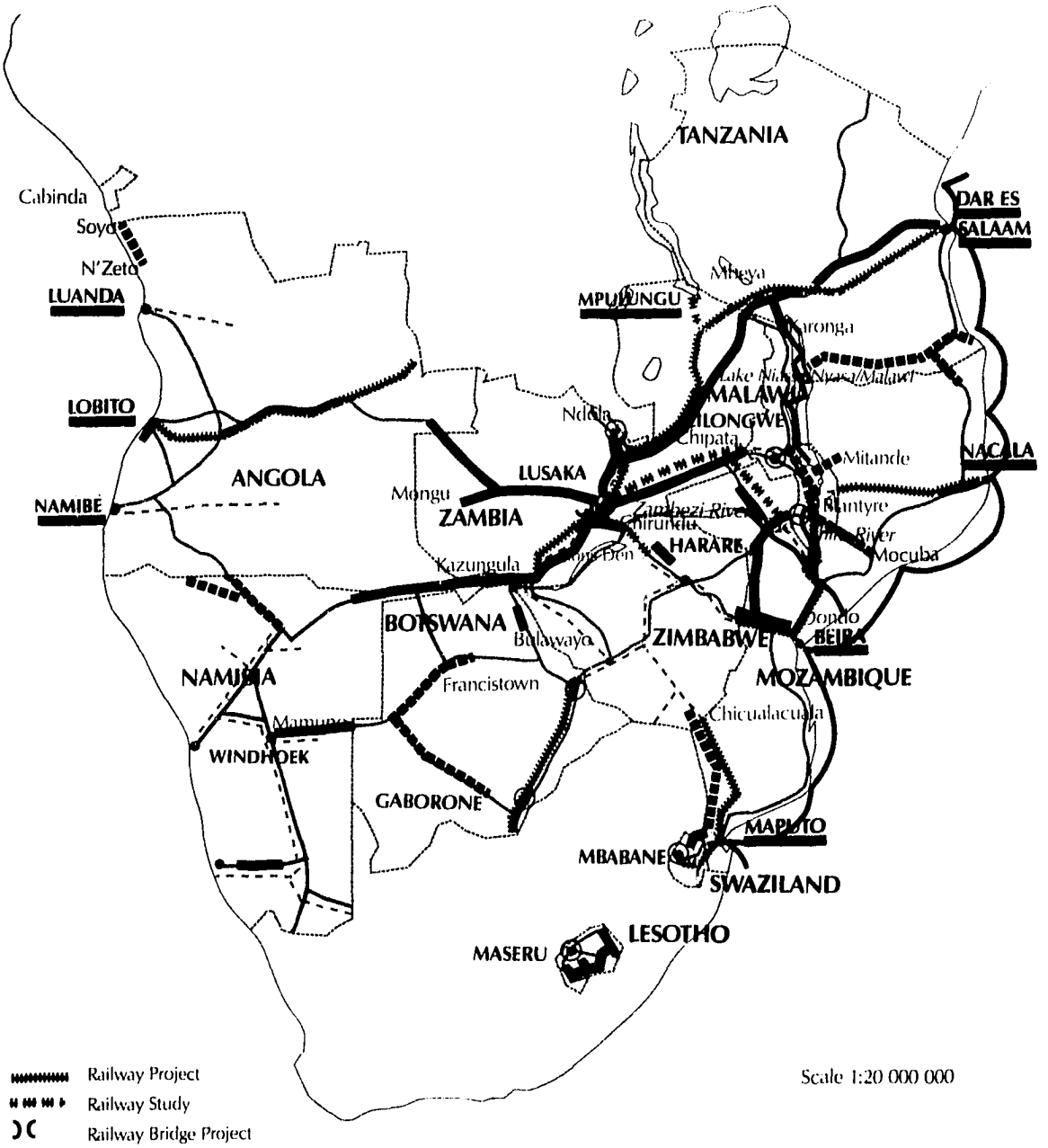
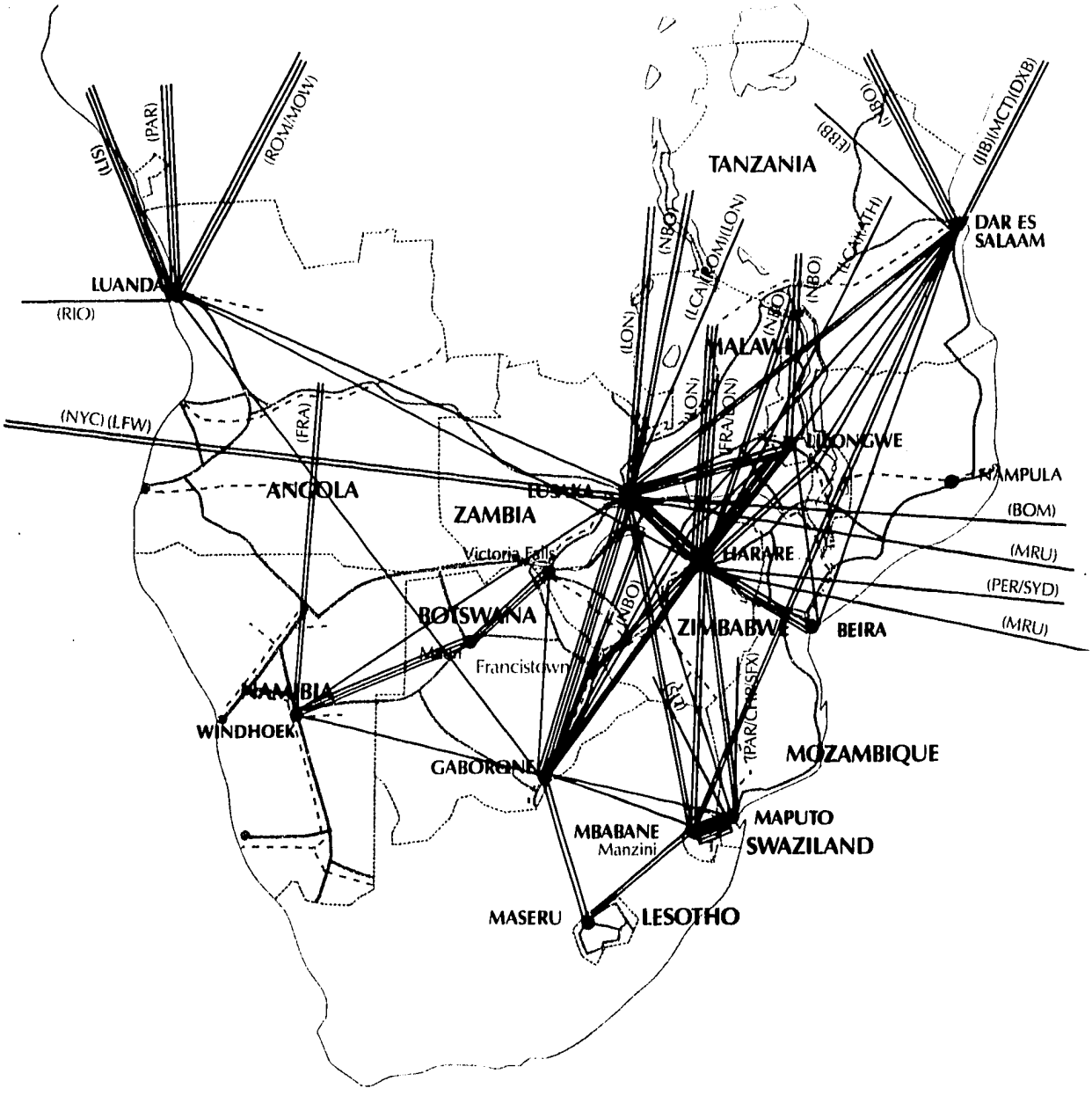


Figure 3 Regional and Overseas Flights by SADCC National Airlines



Weekly Regional connections

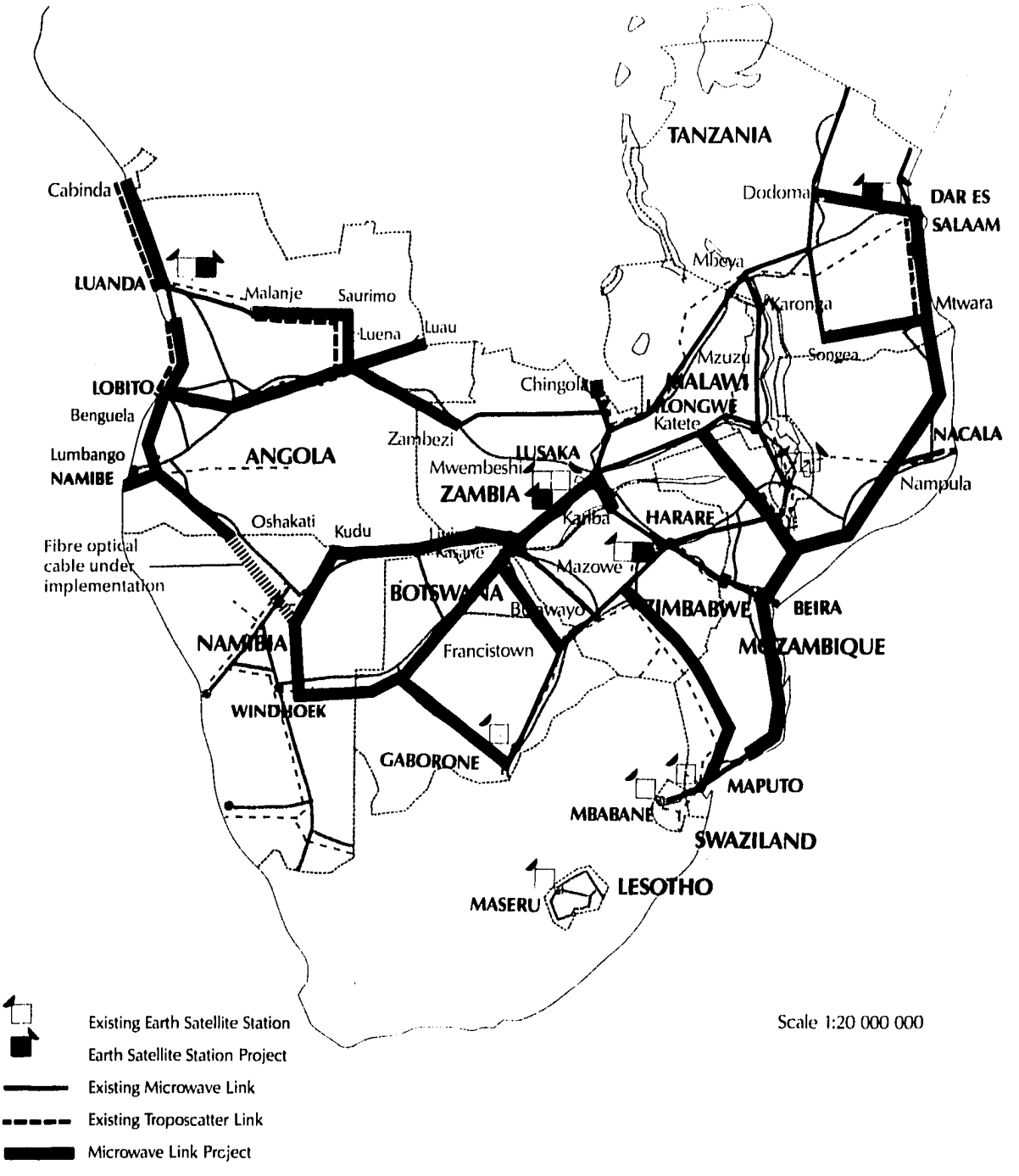
5 pairs of connections

1 pair of connections

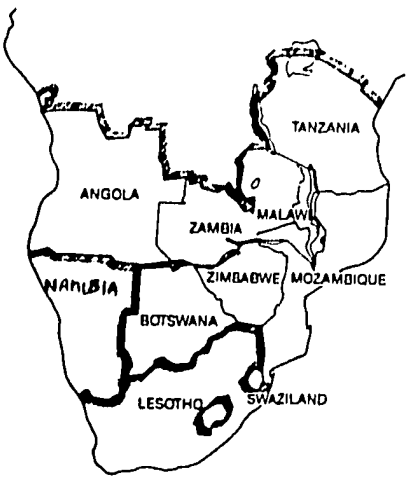
Weekly connections to and from destinations outside the SADCC-Region

1 pair of connections

Figure 4 Telecommunications System Projects



0.0.1 Technical Assistance to the SATCC



Estimated Costs
Total : USD 10.0 million
Foreign : USD 9.0 million
Local : USD 0.5 million

Funding Secured
Foreign : USD 1.5 million
Local : USD 0.5 million (SADCC)

Funding Under Negotiation
Total : USD 3.0 million

Financing Gap:
Total : USD 5.0 million

Executing Agency:
SATCC

Start : 1981
Duration: 10 Years

Objective : Upgrading and digitalization of the main Lusaka-Livingstone, PANAFTEL microwave trunk network to provide high quality transmission capability for natural regional and international traffic through to Zimbabwe, Botswana and Namibia.

Description: The exiswting 960 channel analogue microwave radio system is old and channel capacity is approaching saturation in the transmission of national, regional and international traffic. The system carries the main PANAFTEL traffic to Zimbabwe, Botswana as well as the intermediate national traffic.

Currently the multiplex parte of link is being upgraded by NORAD to allow limited growth of channel capacity for international and regional traffic.

The project consists of:

- 140 MBits digital radio equipment with appropriate spurs along the route
- Expansion of power, housing and associat facilities
- Provision of spares, test equipment, and training of maintenance technicians

A detailed propagation survey and technical specification of requirements is necessary for project implementation.

Status : Financing is required for project implementation.

September 1990

0.0.2 Operational Coordination Development Programme

Estimated Costs
Total : USD 4.7 million
Foreign : USD 4.7 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 3.4 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.3 million

Financing Gap:
Total : USD 1.0 million

Executing Agency:
SATCC

Start : 1983
Duration: To 1990

Objectives : Promotion of regional operational co-ordination within all sectors. The programme encompasses eleven identified sub-sectors and aims at harmonization, standardization or more general co-operation between the Member States in the identified fields.

Description: Operational co-ordination has high priority in the SATCC work. The Technical Unit of SATCC is directly involved in the initiation of these activities. There is, however, a need for supplementary technical assistance concerning preparation of meetings and follow-up work in order to secure timely implementation of the work programmes. Due to this outside financing is needed for each activity.
Eleven sub-sectors / activities have been identified so far :

(1) Road Infrastructure
(2) Road Traffic and Transport
(3) Railway Administrations
(4) Civil Aviation
(5) National Airlines
(6) Port Administrations
(7) Shipping Development
(8) Telecommunications
(9) Meteorology
(10) Postal Services
(11) Survey for Regional Frequency Management and Radio Monitoring

In 1982-1983 the work was initiated and meetings were convened for the first six activities. Operational co-ordination of port administrations was initiated in 1984 and that of postal services and meteorlogy in 1985. Australia has financed operational coordination 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.

Status : Additional funds needed.

September 1990

0.0.2(11) Survey for Regional Frequency Management and Radio Monitoring

Estimated Costs
Total : USD 0.3 million
Foreign : USD 0.3 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.3 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
SADCC

Start : 1990
Duration: 2 Years

Objectives : To determine the needs and requirements for frequency management and radio monitoring stations in the region to assist in the assignment, co-ordination, and monitoring of radio frequencies.

Description : The project consists of survey for the following parts in order to co-ordinate the usage of the radio spectrum :

- survey of staff needs and requirements for Radio frequency management for the SADCC Administrations;
- determine the requirements for computer aided Frequency Management techniques to be used in connection with the selection and co-ordination of regional frequencies;
- survey and determine frequency range, geographical positions, size, tasks and number of fixed and mobile monitoring stations in each SADCC member country with detailed list of type of equipment to be used;
- devise systematic frequency selection procedures in the region to allow for ease of frequency co-ordination among adjacent countries; determination of principles for establishing SADCC agreements on co-ordination of frequency assignments in border areas; and determination of procedures and functions of the Interference Investigation Service; and
- determine appropriate training programme and seminar.

Status : Negotiations underway with GTZ.

0.0.3 Training Development Programme

Estimated Costs
Total : USD 2.1 million
Foreign : USD 2.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.8 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.9 million

Financing Gap:
Total : USD 0.4 million

Executing Agency:
SATCC

Start : 1987
Duration:

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

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

The activities included in the project are listed below.

Preliminary costs are indicated in brackets:

(1) Road traffic and transport training, study and establishment of a Task Group (US dollars 595 000) Duration 2 years
(4) Training course in national telecommunications network planning (US dollars 500,000) Duration 2 years
(5) Satellite communications technology course (USD 250,000) (see separate brief)
(7) Workshop/Seminar on Telecommunications Switching Signalling System in the Sub-Region (new project, see Separate brief 0.0.3(7) (USD 50 000) TIU financed the provision of lectures and fellowships for the seminar (see separate brief)
(8) Local Network (External Plant) Planning Course (see separate brief 0.0.3(8).
(9) Telecommunications Training Needs Survey (USD 150 000); Duration 1 year. Financing is required for this activity to assess the needs and requirements for training in telecommunications which will provide proposals and future training programmes
(10) Telecommunications course in Traffic, Tariffs and Accounting procedures (USD 200,00)
(11) Seminar on Rural Telecommunications Planning (see separate brief 0.0.3(11)).

Status : Financing for the study (USD 295 000) (1) and (5) has been secured under the CIDA / SADCC Technical Services Fund. Satellite Communications technology first course was completed end August, 1987; Financing is required for the follow-up course in Satellite Communication. (4) is to be financed by Sweden and SWEDEL has undertaken a regional survey to define the final content of the course for implementation. The first course ended June 1989 (8) Italy has financed the first course, June 1988; financing is required for the follow-up course.

(10) Canada and ITU financed Tariff Courses in 1990; financing is required for Traffic Course.
Financing is sought for (9), (10) and (11).

September 1990

0.0.3(05) Satellite Communications Technology Course

Estimated Costs
Total : USD 0.4 million
Foreign : USD 0.4 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.2 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.2 million

Executing Agency:
SATCC

Start : 1990
Duration: 8 weeks

Objective : To provide detailed and complete understanding of communications by satellite technology to operations and maintenance staff presently working or intending to work at the Satellite Earth Stations in SATCC Member Countries.

Progress : Satellite Earth Station 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, a network of direct satellite links besides other international links will be established between SADCC countries. Lack of the competent local operations and maintenance personnel is one of the major problems of concern affecting operation of Satellite Earth Stations in SATCC Member Countries. Hence, this type of trining is initiated in order to ensure total localization in maintenance and therefore minimizing operational costs, without degradating performance efficiency.
Further there is a need to develop planning and operational expertise in IDR/DCME new digital technologies.

The first course was held in Malawi in 1987 and attended by two trinees from each of the nine Member Countries; similarly a second course was held in Lesoth in March 1990.

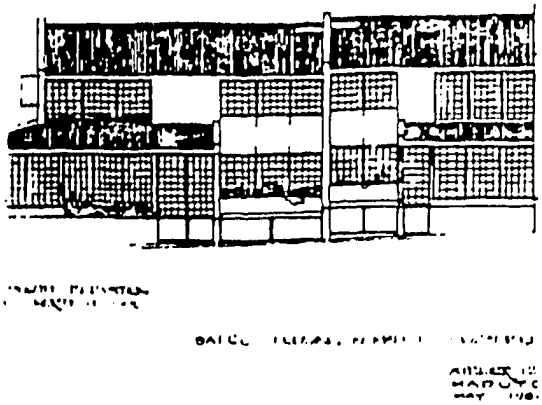
It is recommended to conduct a study survey to determine course and manpower requirements and demand for satellite technology training.

Status : Financing for the present programme was secured under the CIDA/SATCC Technical services Fund.

Financing is required for the study survey and development of the follow-up courses emanating from the study.

September 1990

0.0.7 SAICC Housing in Maputo



Estimated Costs
Total : USD 2.2 million
Foreign : USD 2.2 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.2 million

Executing Agency:
SAICC

Start : 1990
Duration: 18 months

Objectives : Construction of 20 houses for the use of SAICC expert staff.

Description: The SAICC Technical Unit is currently accomodated in 9 flats in Bairro Coop in Maputo.

With the regionalization of the SAICC/TU staff effectively started in 1989, it is expected that there will be between 15 and 20 experts in need of family houses within one years time.

Since there is a serious lack of housing in Maputo the fastest and best way of solving the housing problem for SAICC staff is construction of new houses, preferably as one project including water supply, sewerage, electricity, landscaping and other external work.

Status : A plan has been prepared and preliminary design of the houses has been made in scale 1:100.

Housing site remains to be identified.
Funding is being sought.

September 1990

0.0.3(07) Workshop/Seminar on Telecoms Switching Signalling Systems in the Sub-Region

Estimated Costs
Total : USD 0.1 million
Foreign : USD 0.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.1 million

Executing Agency:
SADCC

Start : 1990
Duration: 1 Week

Objectives : To promote in co-operation with manufacturers the detailed and complete Understanding of the signalling systems to telecommunications operations and planning staff in SADCC Member Countries.

Progress : The Signalling systems in use in the SADCC countries concerning service features for world wide international semi automatic and automatic telephone traffic are met by the following recommendations :

- CCITT (Red Book Fascicle VI.4)
- CCITT No. 5 (Red Book Fascicle VI 2)

Also PANAFTEL R2 is used for traffic through the national switching centres between adjacent countries or local exchanges in the case of frontier relations.

No plans have been forumlated up to now to make CCITT No. 7 for regional use.

The first seminar was held in Gaborone, March 1989, to harmonize the interpretation of the above signalling formats and features. It was attended by two participants from each administration, the manufacturers and ITU.

A follow-up seminar is to be held in 1990 to agree on a harmonized technical specification for CCITT No.7 Signalling System.

Status : ITU / UNDP financed the provision of lecturers and fellowship for one participant from Administrations for the first seminar.

Financing is sought to provide fellowships to attend the second seminar.

September 1990

0.0.3(08) Local Network (External Plant) Planning Course

Estimated Costs
Total : USD 0.2 million
Foreign : USD 0.2 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.2 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
SADCC

Start : 1990
Duration: 8 weeks

Objectives : The course is aimed at providing a complete understanding, comprehension and capability of Local Network telecommunications external plant, planning techniques.

Progress : Current telephone population in all SADCC countries is 400,000 accounting for an average penetration of less than 1 per 100 population with a potential waiting list of more than 100,000 subscribers who are unable to obtain service due mainly to lack of external plant planners and construction personnel which is on of the major problems retarding the growth and extension of telephone service. Hence, this type of training is initiated in order to ensure and improve increased telephone penetration in the SADCC countries.

The first course for 36 trainees was held in Zimbabwe in June/July 1988 financed by Italy. A follow up course with revised syllabus is necessary in 1989.

Status : Italy has been approached for the preparation of the syllabus and running of the follow-up course in 1990.

September 1990

0.0.3(09) Telecommunications Training Needs Survey

Estimated Costs
Total : USD 0.1 million
Foreign : USD 0.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.1 million

Executing Agency:
SATCC

Start : 1990
Duration: 1 year

Objectives : To determine the medium and advanced level training requirements taking into account as far as possible all national telecommunications training facilities in order to provide a co-ordinated training programme over the next 5 to 10 years.

Description: The project is to undertake a telecommunications training needs survey to make recommendations for a co-ordinated programme of training rather than in a piecemeal fashion. The project is required to:

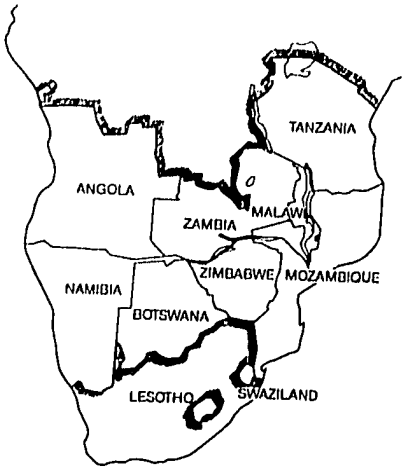
- assess the performance capabilities of existing national and regional training centres and draw conslusions as to what type and level of training courses should be developed for implementation in order to meet the identified needs.

- provide participating co-operating partners and agencies with an estimate of the physical, manpower, and financial resources which would be needed to support a recommended implementation programme.

Status : Financing is required to undertake the study survey.

September 1990

0.0.3(10) Telecommunications Course in Traffic, Tariffs and Accounting Procedures



Estimated Costs
Total : USD 0.3 million
Foreign : USD 0.3 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.2 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.1 million

Executing Agency:
SADCC

Start : 1990
Duration: 8 weeks

Objective : The course is aimed at comprehension and understanding of basic principles of teletraffic and calculations for accounting rates, collection charges and accounting revenue division procedures for the international circuit used for telephony, telex and private leases.

Description: Most Administrations in SADCC countries are experiencing difficulties in qualitatively quantifying traffic and dimensioning their networks for interworking with national, regional and international relations.
Further there are disparities in the region of charges collected by Administrations for public use of the international telephone service and accounting rate per traffic unit agreed between Administrations for the establishment of international accounts.
The course will initially be for two fellowships from each SADCC Telecommunication Administration.

The course will cover the following:

- teletraffic engineering, traffic measurement procedures and computerisation of traffic database (It is envisaged that provision of computer facilities to Administrations will form part of the programme);
- accounting rate and collection charges;
- various procedures for remunerating Administrations;
- determination of accounting rate shares and collection charges; etc.

Status : Financing is required to finance and develop the courses.

September 1990

0.0.3(11) Seminar on Rural Telecommunications Planning

Estimated Costs
Total : USD 0.1 million
Foreign : USD 0.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.1 million

Executing Agency:
SADCC

Start : 1990
Duration: 4 weeks

Objective : To provide detailed comprehension and skills for integrated planning and maintenance operations of rural systems into the main trunk telecommunication networks.

Description: Penetration of telecommunication services in the rural development areas is very low despite the availability of PANAFTEL Microwave trunk routes forming the main backbone of the regional networks.
The seminar will cover:
- design parameters for rural transmission extension.
- identification and selection of appropriate technology.
- identification of logistic constraints in the operations and maintenance of the systems.

Seminar will be attended by two participants from each of the SADCC countries, manufacturers, and specialized lecturers.

Status : Financing is required to cover the organization, development of the seminar and the two fellowships from each SADCC Administration.

September 1990

0.0.4 Transit Transport Project

Estimated Costs
Total : USD 10.3 million
Foreign : USD 10.3 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 4.8 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 5.5 million

Executing Agency:
UNDP/UNCTAD/SATCC

Start : 1984
Duration: Till 1991

Description : Improvement of the performance and utilization of existing transit tranport facilities and support to the transport sector in the region.

Progress : 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 extension from 1984 onwards is geared to assist SATCC on a operational and organizational matters in the regional transport system. The Project is assiting SATCC at the level of the Groups of Experts established for operational co-ordination, in particular those dealing with ports and shipping, railways and road traffic and transport.

Status : An Evaluation mission was carried out in July - August 1987, by UNDP/UNCTAD. On that basis the project has been extended until 1991 to complete the ongoing activities. To achieve tangible outputs as planned, i t has become evident that additional funding, is needed.

September 1990

0.0.5 SADCC Technical Services Fund

Estimated Costs
Total : USD 14.4 million
Foreign : USD 14.4 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 12.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 2.4 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
SADCC

Start : 1985
Duration: 6 Years

Objectives : To contribute within the SADCC Member States for the identification, analysis and resolution of current and potential bottlenecks in the regional transportation and communications systems.

Progress : The Funds have been and are being used for the following types of activities and studies:

- Activities related to the work of the Groups of Experts on operational co-ordination;
- Training and courses;
- Project identification and preparation;
- Studies;
- General tasks of regional importance beyond the capacity of the SADCC Technical Unit.

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. The Memorandum of Understanding for the period 1988-1991 is for CAD 8.4 million (USD 6.4 million).

An agreement has been signed with NORAD on NOK 3 million (USD 0.4 million) for the same purposes.

Several studies financed under the Funds are in progress.

Discussions underway for additional funding from Australia and Federal Republic of Germany.

0.0.9 Package of Transport Statistics Programmes

Estimated Costs
Total : USD 2.1 million
Foreign : USD 2.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.1 million

Executing Agency:
Transport Ministries in Member States
Start : 1990
Duration: 2 years

Objectives : Introduction of a harmonized system for transport statistics in the Member States as adopted by SADCC.

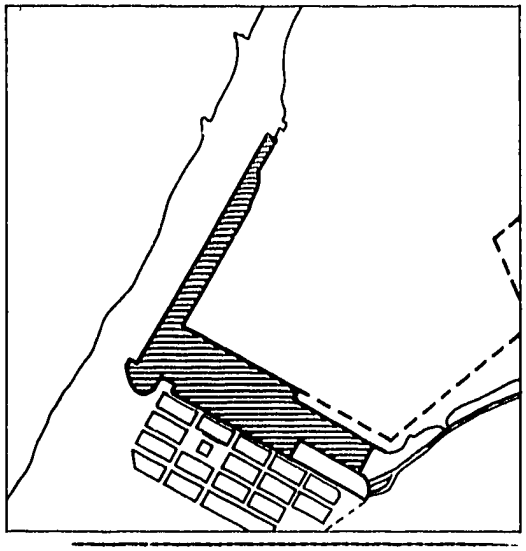
Description: Implementation of a uniform system for transport statistics is an important element in the development of a sound data base for transport planning at the regional and national level.
The project also aims at implementing the harmonized commodity classification nomenclature now being developed in the Region. The system will be based on the recommendations made as a result of the study on road traffic and transport statistics which was undertaken because statistics in this sector was most seriously lacking. Contributions from other sectors will be based on concepts similar to road traffic and traffic.

The project comprises 9 national projects and a regional component. At the national level it is envisaged that a transport statistics officer in the Ministry of Transport be responsible for the compilation of data and issuance of an annual publication named Transport Statistics.

Status : Project descriptions with detailed cost estimates are being prepared. Financing is being sought.

September 1990

0.1.1 Multimodal Projects in the 10- Year Plan for Lobito Port Transport System



Estimated Costs
Total : USD 86.4 million
Foreign : USD 86.4 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 13.8 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 5.5 million

Financing Gap:
Total : USD 67.1 million

Executing Agency:
Lobito Port Authority and
Benguela Railway
Start : 1990
Duration: 5 years

Objectives : General support for the implementation of the Ten Year Development Plan for the Lobito Port Transport System.

Description : The Plan includes the following general support projects :

Project		Cost USD, Million
G-M-1,	Project Co-ordination Unit	5.0
G-M-2,	Support to Workers and their Families	7.0
G-M-3,	Housing for Technical Assistance Staff in Lobito and Huambo	9.4
G-M-4,	Rehabilitation of Hotel Terminus	3.5
G-E-1,	Repair and Extension of Lamaum Hydroelectric Power Plant	42.0
G-OE-1,	Development of the Town of Lobito	13.5
G-OE-2,	Rehabilitation of Cement Factory	6.0
	Total	86.4

Status : Repairs to the dam, Project G-E-1, and installation and (repairs of equipment, will start in 1988 financed by Portugal (USD 10.8 million) and Federal Republic of Germany (USD 3.0 million). Additional funding sought.

September 1990

0.5.1 Multimodal Projects in the Beira Port Transport System Development Plan

Estimated Costs
Total : USD 47.1 million
Foreign : USD 41.4 million
Local : USD 5.7 million

Funding Secured
Foreign : USD 32.3 million
Local : USD 5.7 million

Funding Under Negotiation
Total : USD 6.0 million

Financing Gap:
Total : USD 3.1 million

Executing Agency:
Beira Corridor Authority

Start : 1986
Duration: 5 years

Objectives : Support to CFM(C) organization and manpower, development of the twon of Beira and project co-ordination.

Progress : The Development Plan for the Beira Port Transport system includes the following general support projects :

Code	Project	Estimated Cost (USD, million) Total	Foreign	Financing Secured/ Negotiated
(PR-M-02)	* Support to Workers	18.7	13.0	18.7
(PR-M-02)	B)Workers Transport	1.1	1.1	1.1(Sweden)
(PR-M-02)	C)Workers Housing	17.6	11.9	11.9 (Finland) Mozambique
(PR-M-04)	Core Staff for Beira Corridor Authority	5.8	5.8	5.8 (Nordcs)
(PR-M-06)	Training Facilities	4.8	4.8	4.8 (IDA/IBRD)
(PR-M-08)	Technical Assistance C)Central Services	10.2	10.2	6.7 (IDA/IBRD) 0.4 (UNDP)
(PR-M-09)	Technical Assistance to implementation of Management information System (MIS)	6.0	6.0	6.0 (IDA/IBRD)
(PR-M-10)	Housing for TA Personnel	1.5	1.5	1.5 (IDA/IBRD)

(PR-M-11)	Studies	0.1	0.1	0.1 (IDA/IBRD)
	A) Private Sector Involvement B) Incentive Scheme			
	Total	47.1	41.4	44.0

Status : The above subprojects are being implemented

September 1990

Roads

1.0.1 Package of Road Safety Programmes

Estimated Costs
Total : USD 14.0 million
Foreign : USD 14.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Nagotiation
Total : USD 1.8 million

Financing Gap:
Total : USD 12.2 million

Executing Agency:
Road Safety Authority in each member state.
Start : 1990
Duration: 3 Years

Objectives : Implementation of road safety programmes in SADCC Member States.

Description : Regional cooperation on matters related to road safety has taken place since 1983. Recommendations have been approved for Organisation of road safety work, accident recording systems, actions against drunken driving, motor vehicle testing, control of overloading, driver training and licensing and harmonization of road traffic legislation. For the implementation of recommendations related to road safety the following country programmes have been prepared :

		USD MILLION
(1)	Angola Road Safety Project	2.0
(2)	Lesotho Road Safety Project	2.0
(3)	Malawi Road Safety Project	2.0
(4)	Mozambique Road Safety Project	1.8
(5)	Swaziland Road Safety Project	1.8
(6)	Tanzania Road Safety Project	1.6
(7)	Zambia Road Safety Project	1.8
(8)	Zimbabwe Road Safety Project	1.0
	TOTAL	14.0

Status : A road safety programme in Botswana is already being implemented, financed by SIDA. Detailed project descriptions have been prepared for Lesotho, Malawi, Mozambique, Swaziland, Tanzania and Zambia. Cost estimates for Angola, as given above, are rough estimates, subject to corrections when detailed descriptions have been finalized.
Finland is interested in funding the project in Zambia.
Draft project description has been prepared for Zimbabwe.
A seminar was held in Harare between 12-15 June 1990 to which representatives of CIDA, FINNIDA, NORAD, SIDA ans World Bank were invited.
Member states participated.
Financing is being sought.

1.0.2 Package of Weighbridge Programmes

Estimated Costs
Total : USD 2.3 million
Foreign : USD 1.8 million
Local : USD 0.5 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.8 million

Executing Agency:
Road Authorities in Member States
Start : 1990
Duration: 3 years

Objectives : Introduction of ways and means to control overloading of motor vehicles in order to prevent the deterioration of the road network due to that factor and on commercial and safety grounds.

Description : The project includes establishment of fixed weighbridge stations, provision of portable weighbridges, organizational improvements, technical assistance and training of personnel.

The project consists of the following subprojects :

	USD MILLION	
	Foreign	Local
(1) Angola Weighbridge Project	0.3	0.1
(2) Botswana Weighbridge Project	0.2	0.0
(3) Lesotho Weighbridge Project	0.1	0.0
(4) Malawi Weighbridge Project	0.2	0.0
(5) Mozambique Weighbridge Project	0.2	0.0
(6) Swaziland Weighbridge Project	0.2	0.1
(7) Tanzania Weighbridge Project	0.2	0.1
(8) Zambia Weighbridge Project	0.2	0.1
(9) Zimbabwe Weighbridge Project	0.2	0.1
Sub-Total	1.8	0.5
TOTAL	2.3	

It is estimated that once efficient control of overloading has been introduced, the costs of the project will be covered within a year by reduced road maintenance costs.

Status : Project descriptions have been prepared. Financing is being sought. SIDA has assisted purchase of Weighbridges for Zimbabwe.

September 1990

1.0.3 Implementation of Harmonized Road Maintenance Management System in SADCC Countries

Estimated Costs
Total : USD 2.6 million
Foreign : USD 2.4 million
Local : USD 0.2 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.2 million

Funding Under Negotiation
Total : USD 0.5 million

Financing Gap:
Total : USD 1.9 million

Executing Agency:
Road Authorities in Member States
Start : 1990
Duration: 4 years

Objectives : Strengthening the capacity of the road authorities in the member states for road maintenance planning and management through the implementation of a harmonized Road Maintenance Management System - RMMS.

Description: Deficient maintenance is one of the main problems in the road infrastructure sector in the SADCC Region today. This is due to both insufficient budget allocations and inadequate planning and management capacity to use the available resources efficiently in an optimal way. The implementation of a Road Maintenance Management System, harmonized regionally to the extent feasible, has been identified by the road authorities in the member states as a major step forward in helping to improve the situation.

The preparatory work for the project has been undertaken under the auspices of the SADCC Working Group on Road Infrastruture which has agreed on the principles of the contents and implementation of a harmonized RMMS in the Region.

The RMMS will enhance the medium to long-term planning of strategies and actions on the road network, both at project and network level based on economic evaluation of alternative options and lines of action. The system to be implemented will use the Highway Design and Maintenance Standard Model (HDM III), developed by the World Bank, for pavement performance prediction and economic evaluation.

The RMMS to be implemented will have the following features and capabilities:

- road data bank including road inventory and traffic data;
- data management with user-friendly input and reporting facilities;
- data evaluation through on-screen graphical presentation of data and sectioning;
- on-screen assignment of maintenance options;
- automatic input of the formatted data to HDM III model.

The project includes acquisition of equipment (PC computers, trip metres, pavement roughness metres), training of personnel in the use and maintenance of

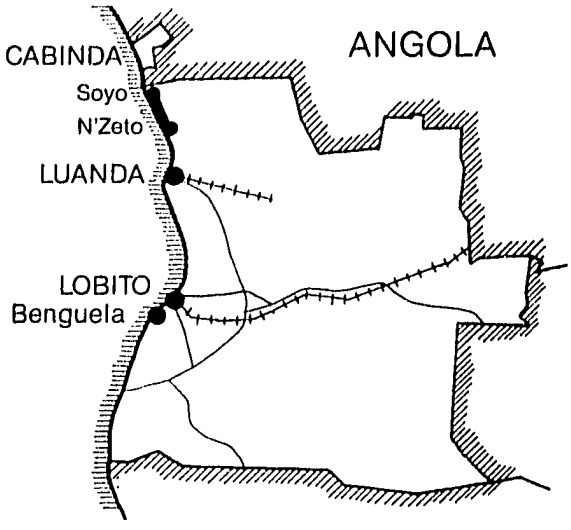
the system, and technical assistance in initiating the RMMS and in calibration of the pavement performance prediction models to local conditions. The system will be implemented stage wise starting with the main trunk roads and expanding the coverage to the whole road network in the course of the implementation period (4 years).

Status : Background documentation, including outline of implementation and training programme, has been prepared. An evaluation of available Road Maintenance Managements Systems was conducted in Harare in July 1990.

Negotiations are underway with Denmark.

September 1990

1.1.1 Study on the Road N'Zeto - Soyo



Estimated Costs
Total : USD 1.1 million
Foreign : USD 1.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 1.1 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
Ministry of Construction, Angola
Start : 1990
Duration: 1.5 years

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

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

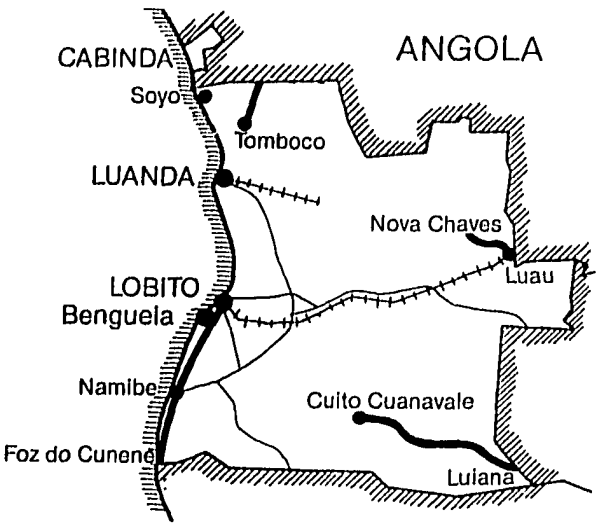
The construction of a new road of adequate standard is a high priority for the Government. This is justified by the economic importance of the area of influence of the road, including existing oil storage and loading facilities, ongoing off-shore oil exploitation and the imminent start of exploitation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

Negotiations are under way with the ADB for the financing of the studies.

September 1990

1.1.2 Studies of Four Roads in Angola



Estimated Costs
Total : USD 1.6 million
Foreign : USD 1.6 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.6 million

Executing Agency:
Ministry of Construction, Angola
Start :
Duration:

Objectives : Feasibility studies of the following four roads :

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

Tomboco - Noqui (Zaire border), 180 km;

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

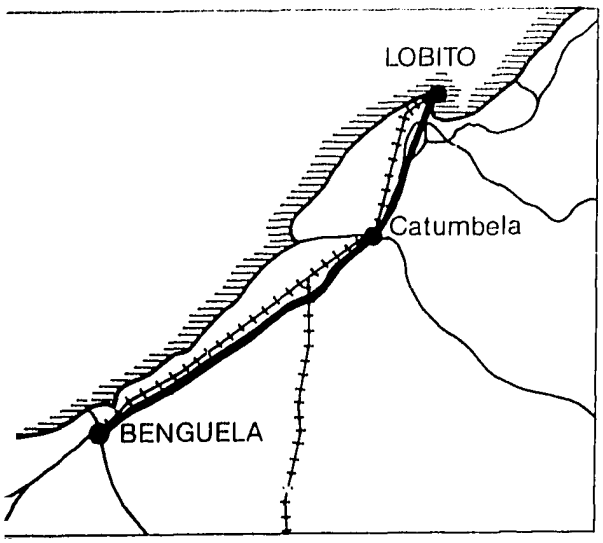
Cuito Cuanavale - Luiana (Zambian border), 650 km.

Description: These projects aim at providing links with the neighbouring countries as well as feeders to the Benguela Railway. 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. Funding is being sought.

September 1990

1.1.3 Roads & Road Tranport Projects in the 10 Year Develop Plan - Lobito Port Transport System



Estimated Costs
Total : USD 24.4 million
Foreign : USD 24.4 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.4 million

Financing Gap:
Total : USD 24.0 million

Executing Agency:
Ministry of Construction,
Roads Department
Start : 1990
Duration: 5 years

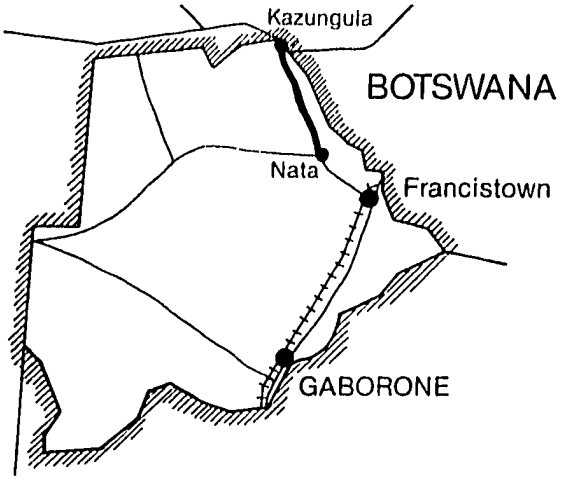
Objectives : Improvement of access roads to serve the Lobito port and strengthening of road haulage capacity.

Description : The Ten Year Development Plan for the Lobito Port Transport System includes the following road and road transport subprojects :

Project		Costs USD, million
RD-CE-1,	Benguela - Lobito Road and Access Roads to the Port and Railway in Lobito	17.4
RD-TR-1,	Reinforcement of the Capacity of the Road Transport Company	7.0
	Total	24.4

Status : A Technical Co-ordination Conference to discuss the 10-Year Plan was held in January 1989. Follow-up contacts with donors are in progress.

1.2.1 Partial Reconstruction of Nata - Kazungula Road



Estimated Costs
Total : USD 8.9 million
Foreign : USD 7.1 million
Local : USD 1.8 million

Funding Secured
Foreign : USD 3.3 million
Local : USD 1.8 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 3.8 million

Executing Agency:
Ministry of Works, Transport and Communications, Botswana
Start : 1989
Duration: 2 years

Objectives : Reconstruction of 86 Kms of the road Nata-Kazungula.

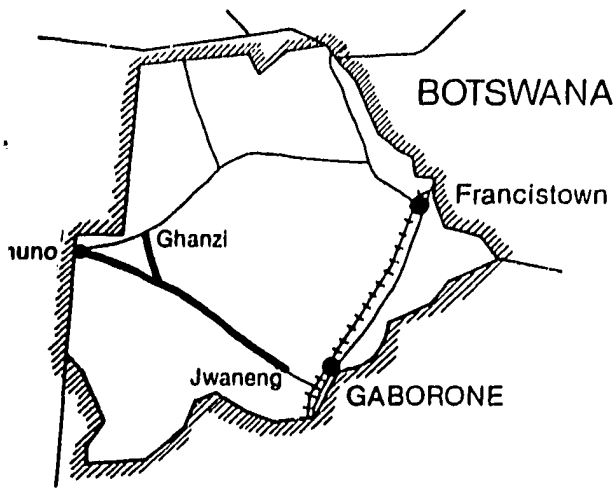
Description: The 300 km Nata-Kazungula road connects Botswana to neighbouring countries of Zambia and Zimbabwe and has proven to be an important transportation link for countries north of Botswana including Malawi.

This road was upgraded from gravel to bitumen standard in 1983 but has suffered premature failures due to unforeseen material problems. Comprehensive investigations by the roads department indicate that progressive failures are likely to continue. High maintenance costs are therefore anticipated and reconstruction of the 86 Km towards Kazungula will be necessary within the next year.

Status : Contract documents have been prepared.

Financing of USD 3.3 million has been secured from Sweden. Contract for the first 30 Km was signed in 1989, works on this section to be completed by end of 1990. The remainder of required financing is being sought.

1.2.2 Construction of Jwaneng-Mamuno Road Link, BOTSWANA



Estimated Costs
Total : USD 108.0 million
Foreign : USD 92.0 million
Local : USD 16.0 million

Funding Secured
Foreign : USD 7.0 million
Local : USD 16.0 million

Funding Under Nagotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 85.0 million

Executing Agency:
Ministry of Works, Transport and Communications, Botswana
Start : 1990
Duration: 5 years

Objectives: Construction of a new all weather heavy traffic road between Jwaneng and the Namibia border at Mamuno, with a spur to Ghanzi, about 670 Km.

Description: The proposed road from Jwaneng to the border post at Mamuno will be the main road link between Botswana and Namibia, including the Namibia ports.

A spur road (41 Km) to connect the road with Ghanzi, the main administrative centre and highly productive cattle area in Western Botswana is included in project.

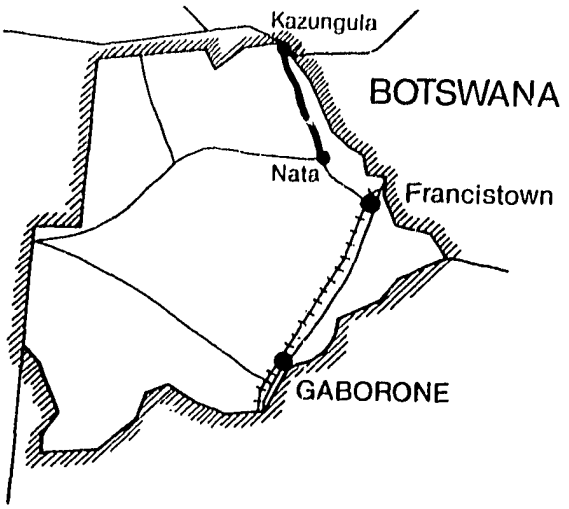
The route has been subject of a Feasibility Study and Preliminary Design under the earlier SADCC study project 1.2.2, funded by Swedish funds administered by ADB. The final report has been received by the Government of Botswana.
A demonstration project of the cost and water saving impact compaction technique for building roads in Kalahari conditions has been successfully executed over the first 7 Km of the project.

The Government of Botswana has approved domestic funds for the next 74 Kilometres to Sekoma, whose construction is due to start during 1990.

The Feasibility Study has revealed that considerable benefits from the road are antecipated from reduced transport costs for goods imported by Namibia, thorugh Botswana, thus giving the road a rate of return of around 20%.

Status: Financing is sought for the construction of the 590 Km west of Sekoma. This is to be constructed in four contracts.

1.2.3 Improved Ferry Service at Kazungula, Botswana/Zambia



Estimated Costs
Total : USD 3.0 million
Foreign : USD 2.0 million
Local : USD 1.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 1.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.0 million

Executing Agency:
Ministries of works, Botswana and Zambia
Start : 1989
Duration: 1 Year

Scope : Improvement of the existing ferry service across the Zambezi River at Kazungula River at Kazungula between Botswana and Zambia.

Description : The territories of Botswana and Zambia touch at one single point on the middle of the River Zambezi. The point isthe junction of the border lines between the four countries Botswana, Namibia, Zambia and Zimbabwe.

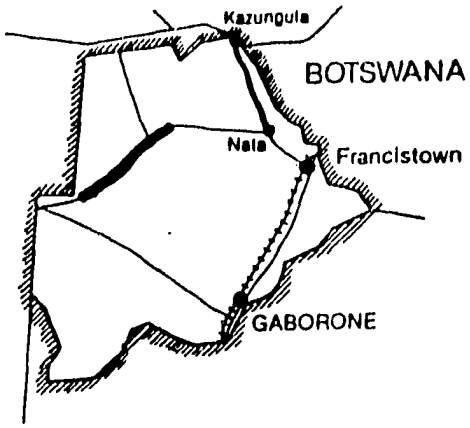
The ferry service across the river at Kazungula is the only direct link between Botswana and Zambia. The existing service is operated by the Government of Zambia. The road Gaborone - Francistown - Kazungula - Livingstone - Lusaka is part of Regional Trunk Road Network defined by SADCC.

Under an earlier SADCC Project No. 1.8.2, Study on Kazungula Bridge and Pandamatenga - Victoria Falls Road, a feasibility of alternative improvements of the Kazungula crossing was studied in detail. The study was completed in 1987. The study recommends physical and institutional improvements to the ferry service, covering vessels and shore facilities as well as aspects related to border crossing.

The project covers acquisition of a new ferry to be operated by Botswana and improvement of other facilities at the crossing.

Status : New project, funding sought. Customs and immigration facilities are under construction on Botswana side with local funding. Agreement has been signed between Botswana and Zambia on institutional and operating aspects of the new ferry. Funding is being sought.

1.2.4 Study on Maun - Ghanzi Road, Botswana



Estimated Costs
Total : USD 0.8 million
Foreign : USD 0.8 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.8 million

Executing Agency:
Ministry of Works, Transport and Communications, Botswana
Start : 1990
Duration: 1 Year

Objectives : Feasibility study on a new upgraded road Maun - Ghanzi.

Description : The existing earth - sand road is impossible for much of its length for all but heavy trucks and four wheel drive vehicles. With the independence of Namibia, the road plays a regional role in providing, together with the Section Nata - Maun under construction, a direct route from Zambia and Zimbabwe to the Namibian border post as Mamuno.

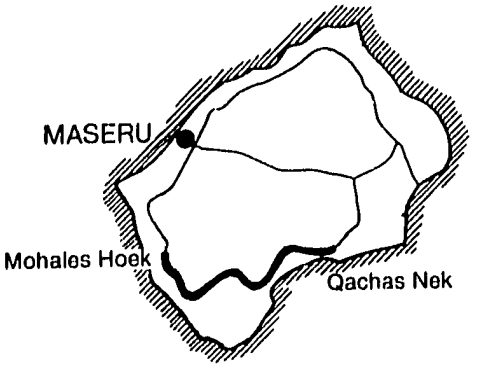
The project road will link with a proposed new road, (project 1.2.2) from Jwaneng (in south-east Botswana) to Mamuno.

Status : An economic pre-appraisal study was carried out in 1989. The road Nata - Maun is under construction.

September 1990

1.3.1 Upgrading of the Road Mohales Hoek-Quthing-Qachas Nek, Lesotho

LESOTHO



Estimated Costs
Total : USD 89.0 million
Foreign : USD 81.0 million
Local : USD 8.0 million

Funding Secured
Foreign : USD 54.5 million
Local : USD 8.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 26.5 million

Executing Agency:
Ministry of Works, Lesotho

Start : 1981
Duration: 8 years

Objectives : The upgrading of the Southern Perimeter Road 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.

Progress : The project has a top priority for the Government.

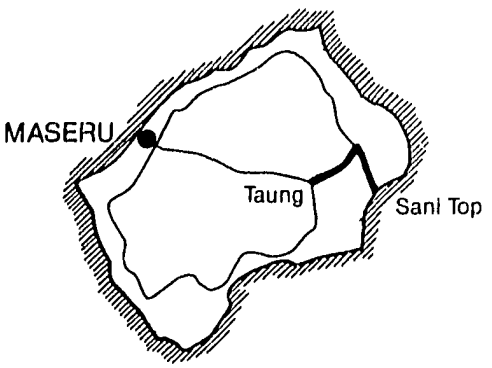
On Mohale's Hoek -Quthing section work has started in January 1985 from Mohale's Hoek to Mekaling (28.5 Km) section on EEC financing.
On the section from Mekaling to Quthing redesign started in April 1986. On Quthing - Mt. Moorosi section construction to bitumen standard commenced in June 1986. Bitumenization of Mt. Moorosi-Mphaki section is being carried out. On Mphaki-Qacha's Nek section construction of 13.6 Km to gravel standard completed.

Status : Financing for section Mekaling - Quthing secured from EEC. Denmark has agreed to finance construction of Seaka Bridge on the same section.

Financing of the remaining portion of the road to Qachas Nek is being sought.

1.3.2 Upgrading and Reconstruction of the Road Taung-Mokhotlong- Sani Top, Lesotho

LESOTHO



Estimated Costs
Total : USD 50.0 million
Foreign : USD 41.0 million
Local : USD 9.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 9.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 41.0 million

Executing Agency:
Ministry of Works, Lesotho

Start : 1990
Duration: 3 years

Objectives : To reconstruct the existing track, 118km, to classified bitumen road standard, in order 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.

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

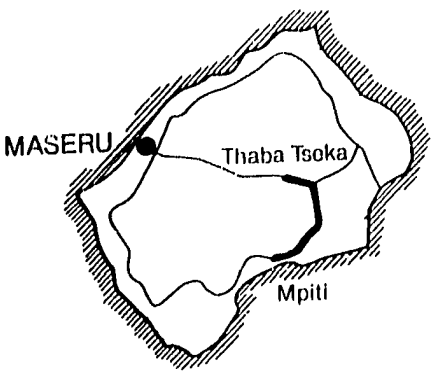
Some spot improvement works have been carried out on the road section Thabang-Sani Pass in order to upgrade the road to all weather standard. These works have been financed by the World Bank under the Third Highway Project. As a result the traffic on this road section has increased from about 10 to 50 vehicles per day, demonstrating the potential importance of the road.

Status : Despite the above mentioned spot improvements the road section needs more extensive upgrading. A feasibility study and engineering design have been completed, financed by UK.
Financing for the implementation of the works is being sought.

September 1990

1.3.3 Upgrading of the Road Thaba Tseka-Taung-Mpiti, Lesotho

LESOTHO



Estimated Costs
Total : USD 35.7 million
Foreign : USD 28.5 million
Local : USD 7.2 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 7.2 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 28.5 million

Executing Agency:
Ministry of Works, Lesotho

Start : 1990
Duration: 3 years

Objectives : To upgrade to an all weather standard the road Thaba Tseka – Taung – Mpiti (145 km). The project is part of a scheme to reduce the dependence on the South African transport system.

Description: The section is part of the north-south connection in eastern Lesotho. Extensive agricultural projects are in progress in Thaba – Tseka area with support from Ireland and Canada. 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 6.0m formation.

The feasibility study (1979), which was financed by Canada, shows a low viability of the project. However, in view of the recent floods in September 1987, it is considered necessary to realize and reconstruct the road. The Government of Lesotho proposes the implementation in two stages:

1. Temporary improvement to be carried out soonest, cost estimate USD 13.85 million.

2. Final upgrading works to be implemented starting 1993, cost estimate USD 21.85 million.

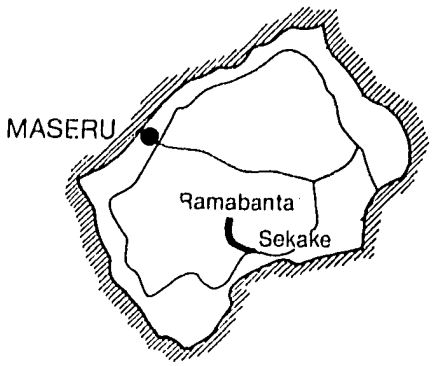
The cost of engineering design is estimated at USD 1.5 million.

Status : Financing is being sought now for the design of the road and the implementation of the temporary improvement (1st stage).

September 1990

1.3.4 Construction of a New Road Ramabanta-Semonkong-Sekake, Lesotho

LESOTHO



Estimated Costs
Total : USD 36.8 million
Foreign : USD 29.4 million
Local : USD 7.4 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 7.4 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 29.4 million

Executing Agency:
Ministry of Works, Lesotho

Start : 1990
Duration: 3 years

Objectives : Upgrading to classified gravel road standard of the existing road Ramabanta - Semonkong, approx. 50 Km, and construction of a new road Semonkong - Sekake, approx. 60 Km.

Description: 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 road Ramabanta - Semonkong is in need of improvement. 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. Updating of the study is required in view of the changed situation.

All the road passes through mountainous terrain with rough conditions.

Design of section Ramabanta - Semonkong is completed financed by F. R. Germany (0.3 million USD). The implementation of this section is estimated to cost USD 18.0 million and the design and implementation of the section Semonkong - Sekake USD 18.8 million.

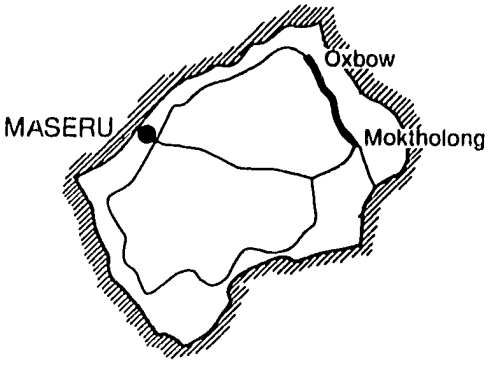
However, in view of the development of the Semonkong area it is now deemed necessary to revirew the studies of the section Ramabanta-Semonkong, as the traffic demand might now justify a higher (bitumenized) standard.

Status : Funding is being sought for the section Ramabanta - Semonkong, which is more urgent of the two sections.

September 1990

1.3.5 Upgrading of the Road Mokhotlong-Oxbow, Lesotho

LESOTHO



Estimated Costs
Total : USD 51.3 million
Foreign : USD 44.0 million
Local : USD 7.3 million

Funding Secured
Foreign : USD 34.0 million
Local : USD 7.3 million

Funding Under Negotiation
Total : USD 10.0 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
Ministry of Works, Lesotho

Start : 1989
Duration: 3 years

Objectives : Upgrading to bitumen standard of the road section Mokhotlong - Oxbow, 110 Km.

Description: The section between Mokhotlong and 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.

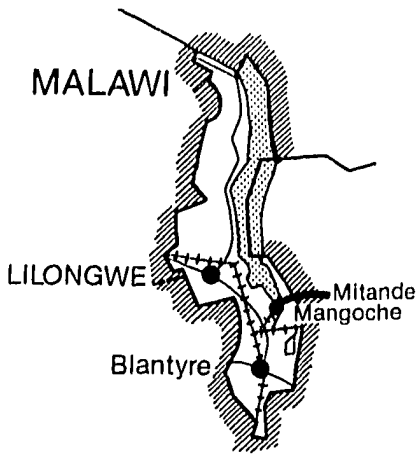
The project includes upgrading of the road to bitumen standard.

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

ADB has made an appraisal of the project. Financing secured from ADB (USD 22 million), BADEA (USD 10 million) and OPEC Fund (USD 2 million), and being negotiated with Kuwait Fund (USD 10 million).

September 1990

1.4.1 Study on Upgrading of the Road Mangochi-Mandimba-Mitande, Malawi/Mozambique



Estimated Costs
Total : USD 0.2 million
Foreign : USD 0.2 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.2 million

Executing Agency:
Min.of Works/Supplies,Malawi
Min.Const./Water,Mozambique
Start : 1991
Duration: 6 months

Objectives : Feasibility Study on the upgrading of 51 Km of the main road M3 in Malawi and of 51 Km of the EN3 in Mozambique, with the objective to open up a link from the central part of Malawi to Mozambique and the nearest ports, Beira 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.

Description: The existing road has been realigned and improved on one section near Mangoche and one section above the escarpment to Mamwera. 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.

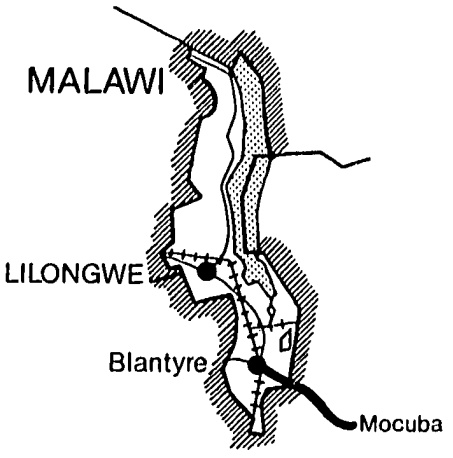
The route in Mozambique is an earth road which is expensive to maintain. The topography traverses easy gently undulating terrain.

Status : Terms of Reference for feasibility and engineering studies have been prepared. The Malawi section is on the World Bank 5th Highway Project Rehabilitation Programme.

Action : Financing of the feasibility study is being sought.

September 1990

1.4.2 Study on the Upgrading of the Road Blantyre-Milanje-Mocuba, Malawi-Mozambique



Estimated Costs
Total : USD 0.5 million
Foreign : USD 0.5 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.2 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.2 million

Financing Gap:
Total : USD 0.1 million

Executing Agency:
SATCC (Feasibility Study)

Start :
Duration:

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

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

Description: 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.

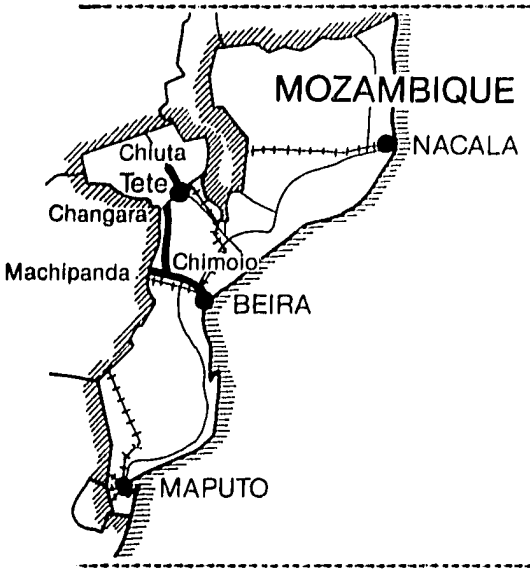
In Mozambique the existing road is a 6 m road of mainly earth standard, the alignment generally following the terrain. Existing condition is poor.

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

Status : Terms of Reference have been prepared for the studies. Engineering designs made for about 100 Km of the Mozambique section. Feasibility of the Malawi section studies in connection with other road projects in Malawi. EEC to finance design on the Malawi section, consultants being shortlisted.

Project feasibility study included in tentative programme to be financed by CIDA/SATCC Technical Services Fund.

1.5.1 Road Projects in the Beira Port Transport System Development Plan



Estimated Costs
Total : USD 42.8 million
Foreign : USD 39.9 million
Local : USD 2.9 million

Funding Secured
Foreign : USD 18.4 million
Local : USD 2.9 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 21.5 million

Executing Agency:
Beira Corridor Authority, Min. of Const. and Water, Mozambique
Start : 1988
Duration: 5 years

Objectives : To rehabilitate the road sections included in the Beira Port Transport System 10-Year Development Plan.

Progress : The Beira System Development Plan includes the following road projects:

(USD. million)

		Estimated Cost		Financing
		Total	Foreign	Secured or negotiated
(RD-CE-1)	Rehabilitation of the Beira-Machipanda, Road. A.1. Emergency Repairs, Sofala	8.6	7.2	7.2 (Sweden) 1.4 Mozambique
(RD-CE-1)	A.2 Emergency Repairs, Manica	5.4	5.4	5.4 (EEC)
(RD-CE-1)	B) Equipment and Technical Assistance to Road Maintenance Units	4.8	4.8	4.8

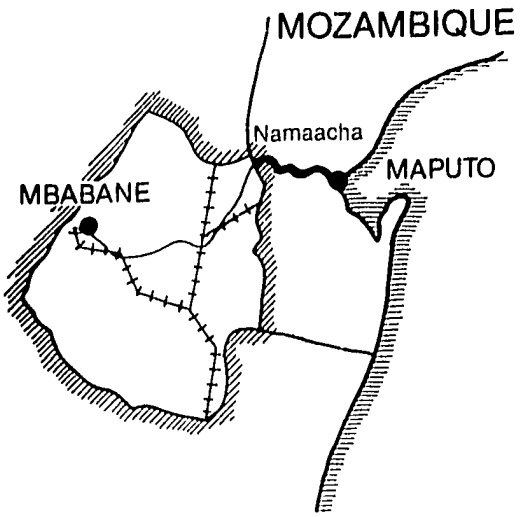
(RD-CE-1)	C) Beira - Machipanda, Reconstruction	14.5	14.5	1.0 (ADB)
(RD-CE-2)	*Lusaka - Kafue Junction	0.0	0.0	0.0
(RD-CE-3)	Chimoio - Changara	3.0	3.0	0.0
(RD-CE-4)	Matundo - Chiuta	6.5	5.0	1.5 Mozambique
	Total	42.8	39.9	21.3

Status : Beira - Machipanda road : financing secured for emergency repairs by Sweden in Sofala province (3.3 million), and Mozambique (1.3 million). EEC expected to finance emergency repairs in Manica province and maintenance equipment (USD 4.8 million). Works started early 1988. ADB financing design of rehabilitation works and establisment of maintenance organisation (USD 4.4 million). Japan expected to provide additional USD 2.5 million for equipment for the 2nd phase of projects.

Other roads : Funding is being sought.

September 1990

1.5.4 Rehabilitation of the Road Maputo - Swaziland Border, Mozambique



Estimated Costs
Total : USD 21.0 million
Foreign : USD 17.0 million
Local : USD 4.0 million

Funding Secured
Foreign : USD 0.8 million
Local : USD 4.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 16.2 million

Executing Agency:
Ministry of Construction and Water, Mozambique
Start : 1988
Duration: 4 years

Objectives : Rehabilitation and upgrading of the road Maputo-Boane-Namaacha-Border to Swaziland, 75 Km. 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.

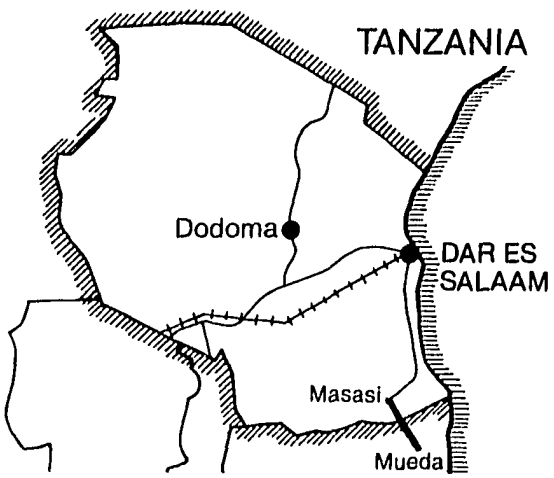
Progress : The existing road is asphalt-paved, mostly in poor condition. A section of about 62 Km of the total 75 Km has a heavily damaged surface, broken down along the edges and very bumpy. The width is less than 6 m along most of the section and does not provide room for overtaking and passing on the damaged sections. Some spot repairs are being made by local funding.

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

Status : A feasibility study has been completed. Engineering design for the road to be made. Financing has been secured from Sweden for the Matola bridge works, which have started in January 1988, and for equipment and materials for the resealing of the section km 35 - 75. Additional funding is being sought.

September 1990

1.5.5 Study on Unity Bridge and Access Roads, Mozambique/ Tanzania



Estimated Costs
Total : USD 0.9 million
Foreign : USD 0.9 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.9 million

Executing Agency:
The Governments of Mozambique and Tanzania
Start :
Duration: 10 months

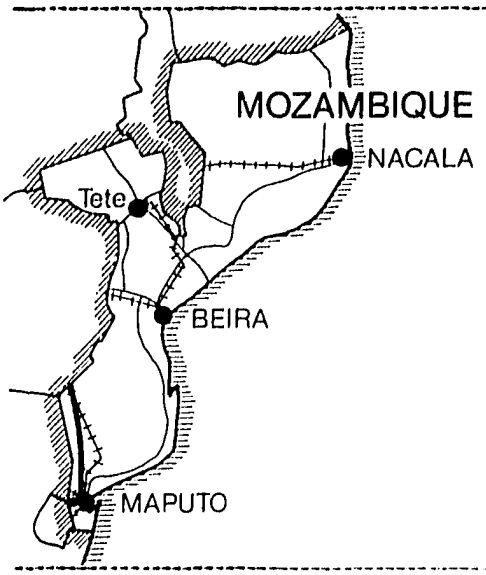
Objectives : Technical and economic feasibility study, including preliminary design, for the construction of a new road link between Mozambique and Tanzania.

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

Status : Terms of Reference for the study have been prepared.
Funding is being sought.

September 1990

1.5.6 Road Linking Southern Zimbabwe with the Maputo Area, Mozambique



Estimated Costs
Total : USD 25.0 million
Foreign : USD 17.5 million
Local : USD 7.5 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 7.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 17.5 million

Executing Agency:
Ministry of Construction and Water, Mozambique
Start : 1990
Duration: 3 years

Objectives : To upgrade the earth track running parallel to the Limpopo railway line between Chicualacuala at the Mozambique/Zimbabwe border and Chokwe, and further to Manhica (approx. 410 Km altogether), to provide a service road for the railway rehabilitation and operation. In the second instance, to study the feasibility of a higher standard road transport link between Maputo and Zimbabwe.

Description: The first phase of the Limpopo railway rehabilitation is in progress. The requirements of the second phase have been studied, and the works are expected to continue into that phase upon completion of the first phase. An improved road running parallel to the railway is essential for the rehabilitation, maintenance and rescue operations of the railway line. The road should preferably be constructed to a minimum 3 m asphalted standard at this stage.

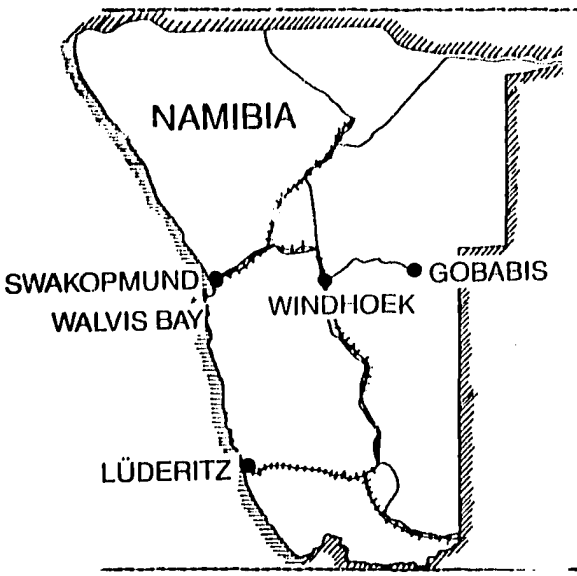
A feasibility study is also envisaged to establish the final desirable standard of a road transport link between Maputo and Zimbabwe.

The road will also be of great importance for agricultural development in the Limpopo Valley area.

Status : The construction of the service road is a new addition to the project. Its implementation is urgent in view of the needs of the Limpopo railway. Financing is sought in connection of the 2nd phase of the Limpopo line rehabilitation.

September 1990

1.6.1 Construction of the Gobabis to Buitepos Roads, Namibia.



Estimated Costs
Total : USD 14.1 million
Foreign : USD 14.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 14.1 million

Executing Agency:
Department of Transport

Start : 1991
Duration: 45 Months

Objectives : To provide an all-weather high standard road, linking Namibia and Botswana. Both countries will reap the benefits of this road link, especilally in terms of co-operation, trade and transport.

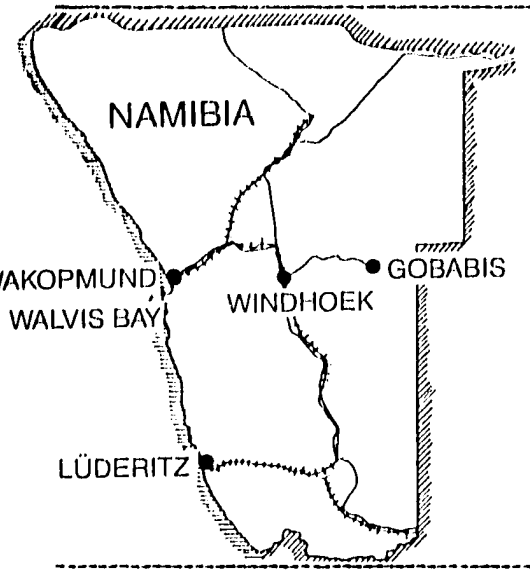
Description : The construction of this road to black-top standard and if necessary the realignment thereof over certain sections is only viable should corresponding developments take place in Botswana. The Botswana Government contracted a Swedish company, V.I.A.K., to carry out a feasibility study which envisages the construction to be in two stages. Approval has been given for the construction of the first section between Jwaneng and Sekoma (80km). The feasibility study on the second stage (~565km) between Sekoma, Ghanzi and Mamuno on the Botswana side of the border was completed in November 1989. Based on a forecast of 200 vehicles per day crossing the border at the turn of the century an economic return of 20% is expected.

On the Namibian side, the first 16 km of the 119 km between Gobabis and Buitepos has already been provided with a bituminous seal. Generally, the existing gravel road has a good alignment with the exception of a relatively short section which passes through rolling to hilly terrain with sub-standard sight distances. Various alignment alternatives over the second half of the route were investigated and it may be possible to reduce the lenght by 8 km. The choice of the final enlignment will however depend very much on the availability of road building materials and water.
Required initially is a feasibility study on the improvement to bituman surfaced standard of the road between Gobabis and Buitepos including a route selection report, followed by detail design and construction.

Status : A preliminary route investigation has been carried out. Funding is being sought.

September 1990

1.6.2 Improvement of route Rundu, Katima,Mulilo,and Ngoma, on border to Botswana, Namibia.



Estimated Costs
Total : USD 57.0 million
Foreign : USD 51.2 million
Local : USD 5.8 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 5.8 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 51.2 million

Executing Agency:
Transportation/Roads

Start :
Duration: 10 Years

Objective : The completion of the all-weather bitumen surfaced road between Rundu, Katima Mulilo and Ngoma will provide a high standard link with the neighbouring states, being northern Botswana, Zimbabwe and Zambia, promoting the development of trade and co-operation between these countries and Namibia. A bitumen surfaced road will also reduce road maintenance costs, vehicle operating costs and the present high accident rate.

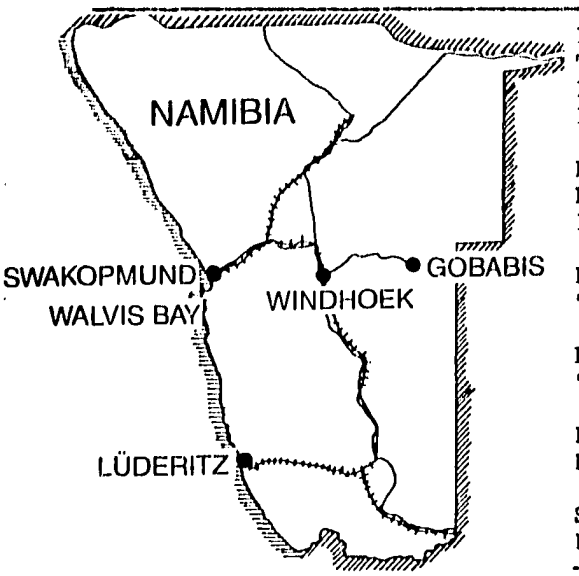
Descritpion : Traffic on this road varies from between 100 and 200 vehicles per day some 50 km east of Rundu to between 50 and 100 between Divundu and Kolonga with a 15% heavy vehicle component. Deterioration of the road surface occurs fairly rapidly after grading and its condition becomes unacceptable within a matter of days. The accident frequency on the Rundu - Divundu section is particularly high costing the country some R6, million per annum and is mainly attributable to a lack of sight caused by the dusty conditions on the gravel road. Of the road 521 km road lenght between Rundu in the Kavango and Katima Mulilo in the Caprivi, the first section of 52 km between Kongola and Katima Mulilo, totalling 124 km, have already been constructed and provided with a bituminous surfacing. Thus there exists a 345 km gravel section between Takwasa and Kongola which needs to be replaced by a bitumen surfaced road. Progress with the planning, design and documentation of this sections has already advanced to some degree.

The traffic volume on the Katima Mulilo to Ngoma road, a distance of 61 km, is about 400 vehicles per day at Katima Mulilo and decreases to about 10 to 15 vehicles crossing the border at Ngoma. During the rainy season this road very often becomes unpassable due to the softening of the wearning course gravel. From Katima Mulilo south towards Ngoma, the Department is currently upgrading the first 12 km and providing it with a light bituminous seal. A preliminary investigation of the remaining 49 km to Ngoma has confirmed the acceptability of the existing road alignment for a high standard road.

Status : The project is seen as an ongoing project to be executed in sections, and depending on the particular section requires a feasibility study, design and construction.

Funding is being sought.

1.6.4 The Ovamboland Road Network Improvement Master Plan, Namibia



Estimated Costs
Total : USD 1.1 million
Foreign : USD 1.0 million
Local : USD 0.1 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.1 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.0 million

Executing Agency:
Department of Transport

Start :
Duration: 1 Year

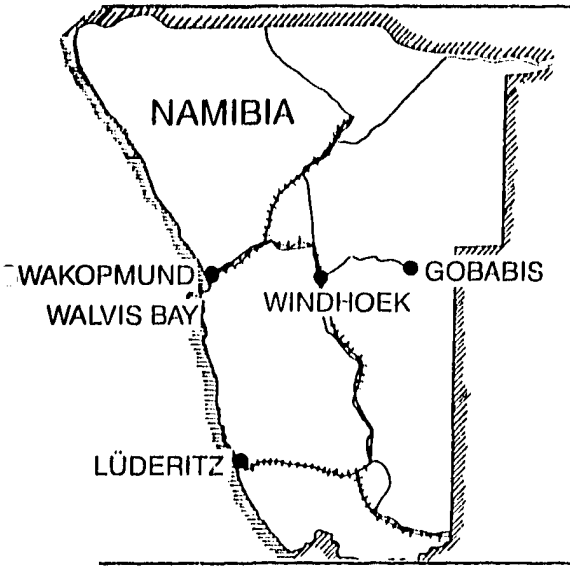
Objective : To determine priorities for construction, upgrading and maintenance, standards and the organization necessary to provide Ovamboland with an adequate road network.

Description : A master plan according to which the road network of Ovamboland is to be improved and extended is urgently required. This study would need to determine priorities for construction, upgrading and maintenance standards, and the organisation necessary to provide this area with an adequate road network which would stimulate economic growth. The study should also concentrate on road links with other areas, for example the necessity or otherwise of a road linking Ondangwa to Opuwa in the west and a road linking Ondangwa via Nkurenkuru to Rundu in the Kavango.

Ovamboland, which is the most heavily populated area in Namibia with approximately 50% of the countries population occupying 6% of it's area, has shown one of the highest growths in vehichle registrations.
Due to the recent war situationin especially the northern areas, little could be done to develope the road network according to the needs of the population.
The maintenance of gravel roads was seriously neglected and virtually no new gravel roads were constructed in the area during the last decade. The road network of Ovamboland presently consists of 446 Km reasonably well maintained bitumen surfaced roads and 733 Km gravel and earth roads.

Status : Funding is being sought.

1.8.6 Climbing/passing lanes on road between Windhoek and Windhoek International Airport Namibia.



Estimated Costs
Total : USD 0.6 million
Foreign : USD 0.4 million
Local : USD 0.2 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.2 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.4 million

Executing Agency:
Department of Transport

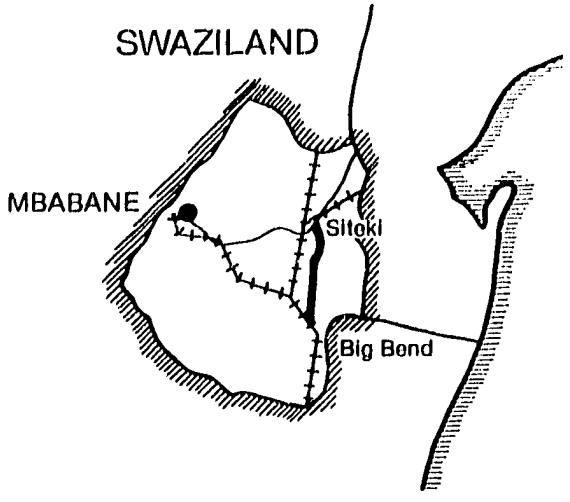
Start :
Duration: 24 Months

Objective : To achieve a decrease in the accident rate on the road, which is presently estimated to cost in excess of USD 1,5 million per annum.

Description : The road between Windhoek and Windhoek International Airport passes through hilly to mountainous terrain and currently carries about 1 800 vehicles per day with high peaks of 300 vehicles per hour coinciding with aircraft movements at the airport. Accident costs on this section have been estimated to be in excess of USD 1,5 million per annum. The existing road is a two-lane two-way highway provided with an eight metre bituminous surfacing and one and a half metre gravel shoulders. It is essential that climbing and passing lanes be provided where necessary, that structures along the route be widened and that major at grade intersections be improved. Preliminary investigations have indicated that seven kilometres of climbing lanes are warranted.

Status : Required is a feasibility study and if justifiable the detail design and construction of the improvements. Funding is being sought.

1.7.1 Rehabilitation/Upgrading of the Road Mozambique Border at Lomahasha-Siteki-Big Bend



Estimated Costs
Total : USD 22.0 million
Foreign : USD 18.7 million
Local : USD 3.3 million

Funding Secured
Foreign : USD 8.9 million
Local : USD 3.3 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 9.8 million

Executing Agency:
Ministry of Works and Communications, Swaziland
Start : 1992
Duration: 2 years

Objectives : Upgrading and bitumenization of the gravel road sections :

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

Description: 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).

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 agriculture 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.

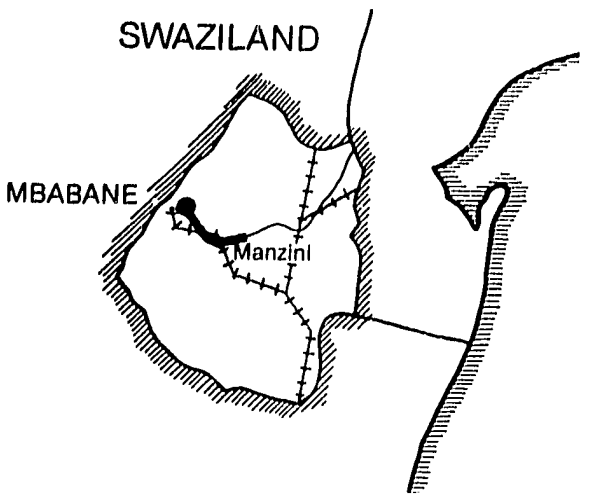
The upgrading includes widening to 6.7 m asphalted carriageway on a 10.3 m formation.

The road section Lomahasha - Siteki has traffic volumes between 175 and 700 vehicles per day.

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 construction of the section Lomahasha - Lonhlupenko completed, financed by ADB, Sweden and Swaziland. Financing is sought for the section Lonhlupenko - Big Bend.

1.7.2 Improvement of the Mbabane- Manzini Road, Swaziland



Estimated Costs
Total : USD 28.9 million
Foreign : USD 23.1 million
Local : USD 5.8 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 5.8 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 23.1 million

Executing Agency:
Ministry of Works and Communications, Swaziland
Start : 1990
Duration: 2 years

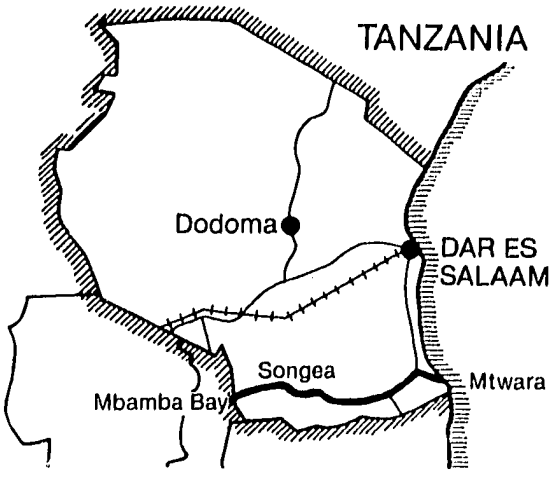
Objectives : Improvement of the road between Mbabane and Manzini by widening of the existing road over 14.6 km and construction of a new road section of 19.4 km, as well as upgrading of a 15 km relief road between Lobamba and the Matsapha Industrial Area to dual carriageway standard.

Description: The road between Swaziland's capital Mbabane and Manzini, the main industrial centre, is one of the most heavily trafficked roads in the country, and part ofthe SADCC Regional Trunk Road Network. The 1986 traffic counts indicate some 8.000 vehicles per day between Matsapha Industrial Area and Manzini and 5.000 vehicles per day between Mbabane and Ezulwini Valley. Up to 25 per cent are heavy goods/timber vehicles. Due to volume of traffic and nature of the terrain serious capacity and safety problems exist on the present road. The road also exhibits signs of distress and will require major rehabilitation in the very near future. Therefore a major improvement is envisaged, consisting of partly constructing a new road and partly widening the existing road to four lane standard, and constructing the relief road to dual carriageway standard.

Status : Tender invitation for feasibility study and detailed design being prepared, funding by ADB.
Financing for implementation is being sought.

September 1990

1.8.1 Rehabilitation and Upgrading of the Mtwara- Songea- Mbamba Bay Road, Tanzania



Estimated Costs
Total : USD 80.0 million
Foreign : USD 54.0 million
Local : USD 26.0 million

Funding Secured
Foreign : USD 8.0 million
Local : USD 26.0 million

Funding Under Negotiation
Total : USD 24.5 million

Financing Gap:
Total : USD 21.5 million

Executing Agency:
Ministry of Communications and Works, Tanzania
Start : 1989
Duration: 3 years

Objectives : 1. Studies and design for the section between Masasi and Songea, upgrading of section Masasi-Songea, 445 Km, to engineered gravel standard.

2. Upgrading of section Songea-Mbinga Mbamba Bay, 160 Km, to bitumen standard.

The main aim of the Southern Trunk Road as a regional project is to carry traffic to and from the port of Mtwara and serve as a link to the port and shipping services on Lake Malawi at Mbamba Bay (c.f. project No. 3.7.1).

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

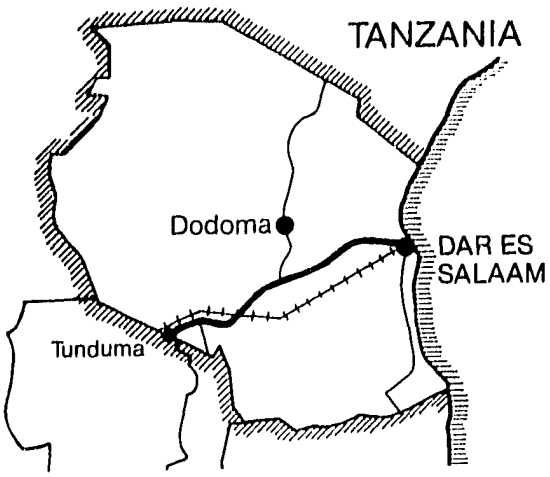
Description: The road section Mtwara-Masasi, 200 Km, has been upgraded to bitumen standard in 1978. The existing road Masasi-Tunduru-Songea, 445 Km, is partly earth, partly engineered gravel standard, 6.5-7 m wide, partly in a poor condition. The terrain is generally rolling to hilly. Some repair works have been carried out.

The existing road from Songea to 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.

Status : UK has financed the construction of the road Mkambako-Songea, linking the proposed road to the Tanzam Highway. Review of detailed design for section Songea-Mbamba Bay and feasibility study for section Masasi-Songea have been completed.

USD 8 million have been secured from Netherlands for section Masasi - Songea. Financing of section Songea - Mbinga (100 km) being discussed with EEC. The remaining financing is being sought.

1.8.3 Rehabilitation/Strengthening of the TANZAM Highway, Tanzania



Estimated Costs
Total : USD 62.0 million
Foreign : USD 41.5 million
Local : USD 20.5 million

Funding Secured
Foreign : USD 39.5 million
Local : USD 20.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.0 million

Executing Agency:

Start : 1988
Duration: 2 years

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

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

This road carries considerable heavy national and regional traffic. The section between Dar es Salaam and Morogoro carries also traffic for the 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.

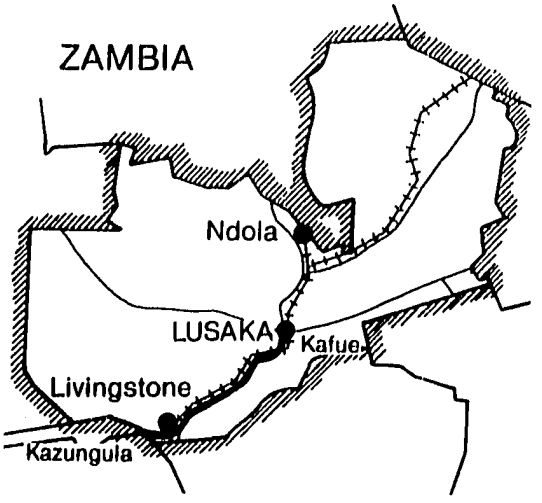
The road pavement within certain sections has shown signs of distress in the form of potholes, surface cracks and surface deformation. At certain places, especially between Dar es Salaam - Mikumi (289 km) and Iyayi - Mbeya - Tunduma (228km), the road has failed completely, with the pavement destroyed.

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.

Financing has been secured for a total of USD 60 million by ADB - 19.4 million, IDA - 13.2 million, Norway - 6.9 million and Tanzania - 20.5 million, leaving a gap of USD 2 million.

The project has been divided in four contract sections. Two contracts have been signed and the works started in September 1988.

1.9.3 Rehabilitation of the Lusaka- Kafue-Livingstone-Kazungula Road, Zambia



Estimated Costs
Total : USD 189.0 million
Foreign : USD 189.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 49.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 140.0 million

Executing Agency:
Ministry of Works and Supply, Zambia
Start : 1988
Duration: 3 years

Objectives : Rehabilitation and upgrading of the road Lusaka - Kafue - Livingstone - Kazungula, - Katima Mulio, 591 Km

Description: Upgrading work has been completed in 1986 on the section Zimba-Livingstone (42 Km) with financing from Norway. This road section has been upgraded from a 3.5 m wide surface to a 6.1 m bitumen surface with 2 m shoulders (USD 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.

Status : Denmark has financed feasibility and engineering studies (USD 0.7 million), together with 3 other roads in Zambia (projects 1.8.5, 1.8.6, 1.8.8). Studies have been completed in early 1986.

Lusaka-Kafue Bridges 56 Km prequalification for consultants Done. Consultants shortlisted from 20 to 8 USAID Funding rehabilitation. (Funded in the Beira Port Transport System Development Plan. Project 1.5.1)
Estimated cost USDOL 20.0 Million.

Kafue Bridge-Mazabuka-Monze 130 Km
USAID Pledge 100 funding all works.
First phase to Mazabuka 69Km, contract awarded to contractor. Contract USDOL 21 Million. Contract already signed. Work start 1990. Second phase to Monze estimated cost USDOL 28.00 Million.

Monze-Zimba 210 Km. Funding being sought.
Estimated cost USDOL 74.0 Million.

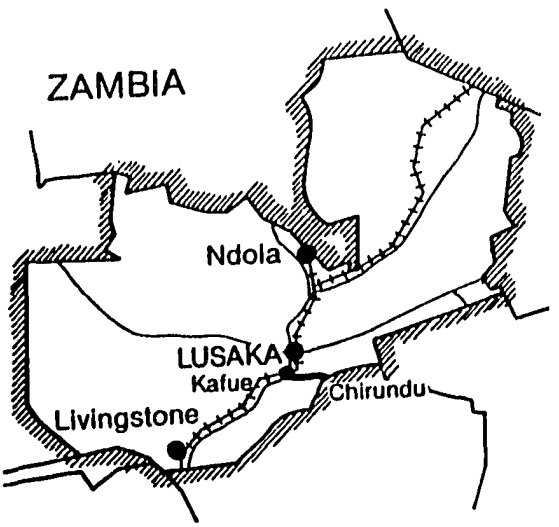
Zimba-Livingstone rehabilitation works completed.

Livingstone-Kazungula Pontoon-Katima Mulilo Pontoon.
195 Km Zambia-Botswana-Namibia Link.
Donor to Fund rehabilitation sought. TRRL/ODA have indicated need to carry out research on Link. Estimated cost rehabilitation USD 66.0 Million.

Interim report for feasibility study for Kafue Bridge reconstruction received from VIOA.
Interested in funding new bridge.

September 1990

1.9.4 Rehabilitation of Kafue- Chirundu Road, Zambia



Estimated Costs
Total : USD 38.0 million
Foreign : USD 35.0 million
Local : USD 3.0 million

Funding Secured
Foreign : USD 13.0 million
Local : USD 3.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 22.0 million

Executing Agency:
Ministry of Works and Supply, Zambia
Start : 1983
Duration: 5 years

Objectives : Strengthening and partial reconstruction of damaged sections of the Kafue-Chirundu Road.

Progress : 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.

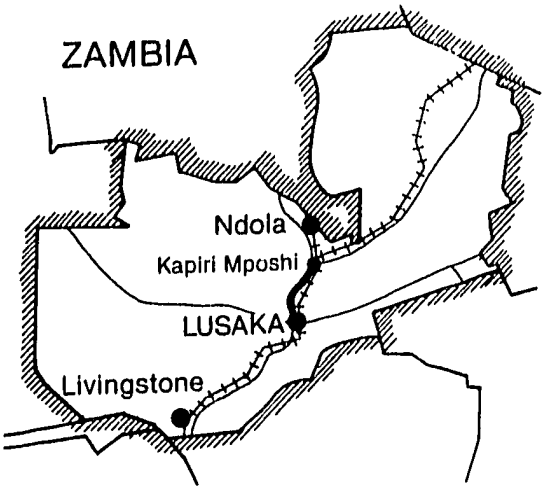
A three-day, Friday-Sunday, traffic count on the road in July 1983 showed 667 vehicles/day of which 42% trucks at a point near the Lusaka-Livingstone road and 391 vehicles/day of which 66% trucks at a point close to Chirundu.

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.
Second phase 20 Km surface dressing completed 6.3 Km widening carriageway being carried out by force account USAID. Estimated cost for second phase USD 22 Million. Funding is being sought.

September 1990

1.9.5 Rehabilitation of the Lusaka - Kapiri-Chingola-Zaire Border Road, Zambia



Estimated Costs
Total : USD 144.0 million
Foreign : USD 144.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 144.0 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
Ministry of Works and Supply, Zambia
Start : 1990
Duration: 4 years

Objectives : Strengthening/partial reconstruction of the road Lusaka - Kapiri Mposhi - Zaire border (460 km).

Description: This road was built more than 15 years ago and carries a heavy volume of traffic. 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.

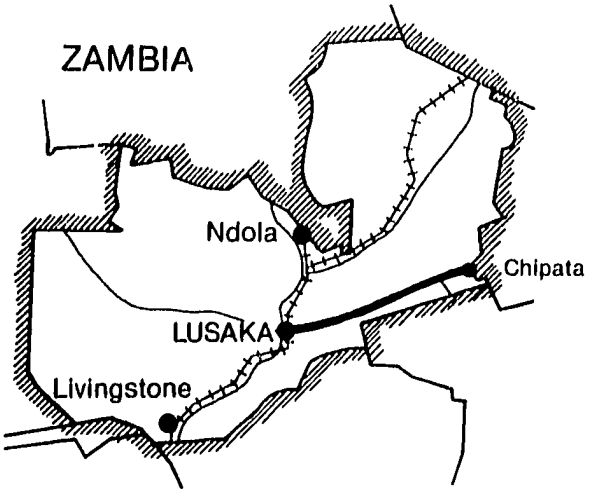
Rehabilitation works have been carried out over selected sections in the past including reconstruction, surface dressing and premix overlay. However, due to the lack of funds it has not been possible to keep up with the deterioration and it is now imperative to take urgent action.

Status : Denmark has financed feasibility and engineering studies (USD 0.6 million) together with 3 other roads in Zambia (Projects 1.8.3, 1.8.8(, completed in early 1986.
Lusaka - Kapiri 200 Km design in progress by Brian Colhoughon and Inietec.

Kapiri - Chingola - Zaire border 210 Km . Estimated cost USD 74 million. Funding is being sought.

September 1990

1.9.6 Rehabilitation of the Road Lusaka - Chipata, Zambia



Estimated Costs
Total : USD 54.0 million
Foreign : USD 54.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 54.0 million

Executing Agency:
Ministry of Works and Supply, Zambia
Start : 1990
Duration: 3 years

Objectives : Strengthening/partial reconstruction of approximately 180 Km damaged sections of the road Lusaka - Chipata.

Description: 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.

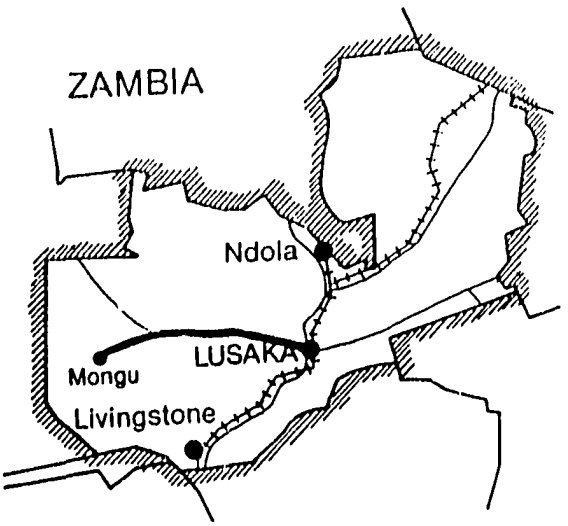
Urgent rehabilitation works are required.

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

Status : Denmark has financed 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), completed in early 1986.

Funding is being sought.

1.9.7 Improvement of the Road Lusaka -Mongu, Zambia



Estimated Costs
Total : USD 63.3 million
Foreign : USD 63.3 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 63.3 million

Executing Agency:
Ministry of Works and Supply, Zambia
Start : 1988
Duration: 3 years

Objectives : Rehabilitation/improvement of the road Lusaka-Mongu.

Progress : 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.

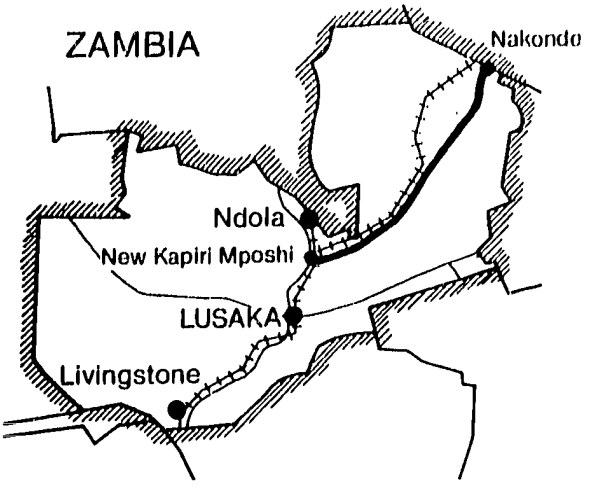
Traffic flows are approximately 200 vehicles per day with over 60 per cent heavy vehicles. Due to poor soil conditions, long sections of the road are showing signs of distress and already several kilometers have had to be reconstructed. Some surface dressing works have been made.

In order to avoid further deterioration, rehabilitation works of a large scale are required.

Status : Financing has been secured from P.R. China and works started by a Chinese construction team in May 1988.
Kaoma - Mongo 186 Km requires donor agency. Estimated cost USD 63.3 Million Funding is being sought.

September 1990

1.9.8 Rehabilitation of the TANZAM Highway, Zambia



Estimated Costs
Total : USD 9.3 million
Foreign : USD 5.9 million
Local : USD 3.4 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 3.4 million

Funding Under Negotiation
Total : USD 5.9 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
Ministry of Works and Supply, Zambia
Start : 1990
Duration: 2 years

Objectives : Strengthening/partial reconstruction of the damaged sections of the Tanzam Highway in Zambia between Kapiri Mposhi and Nakonde (800 km).

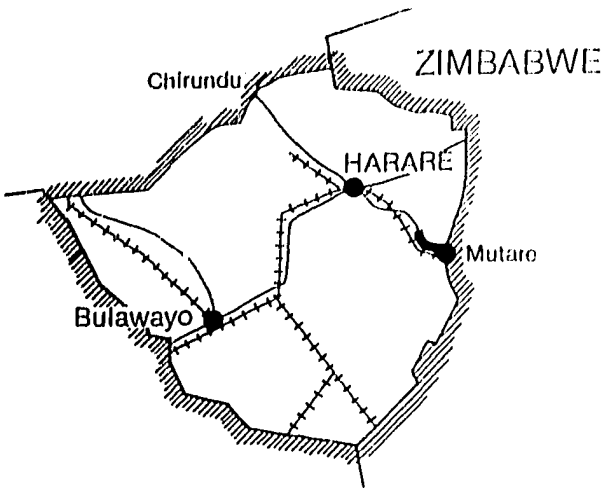
Description: The Kapiri - Nakonde road was built over 15 years ago and carriers a heavy volume of traffic. Recent counts show the flows to be 431 vehicles per day with 56 per cent heavy vehicles. Efforts are being made to ensure that vehicles comply with axle load limits by the weighbridges at Kapiri 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.

Status : Denmark has financed feasibility and engineering studies (USD 1.1 million, together with 3 other roads in Zambia (Project 1.8.3, 1.8.5 and 1.8.6), which completed in early 1986. Updating of the studies has been completed, financed by Denmark. Negotiations are underway with Denmark.

1.10.3 Upgrading of Eastern end of Harare-Mutare-Mozambique Border Road, Zimbabwe



Estimated Costs
Total : USD 22.0 million
Foreign : USD 18.0 million
Local : USD 4.0 million

Funding Secured
Foreign : USD 0.6 million
Local : USD 4.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 17.4 million

Executing Agency:
Ministry of Transport, Zimbabwe
Start : 1991
Duration: 2 years

Objectives : Upgrading the last 41 Km of the Harare - Mutare - Mozambique Border Road to a standard consonant with the rest of the highway and capable of accommodating expected increased heavy traffic in the Beira Corridor, along the existing road alignment and a new by-pass route around the southern end of the City of Mutare.

Description: The project road is part of the principal road link in the Beira Corridor, connecting Zimbabwe with the Port of Beira. In addition, the link provides a road connection to Beira from Zambia, Malawi and potentially Botswana and South-eastern Zaire. Emergency repair works on the road from Zimbabwe border to Beira are in progress.

In the national context, the project forms part of the Zimbabwean state road network providing the connection between the capital and the fourth largest city, Mutare, as well as the adjacent land use and Eastern/South-Eastern parts of the country.

The Harare-Mutare road is mostly a 6.7/9.7 metre wide bitumen surfaced road in a fair to good condition with few sections in need of strengthening. The present route passes through the commercial centre of Mutare, along the City's street network to the Mozambique Border along a 6 metre wide surfaced road.

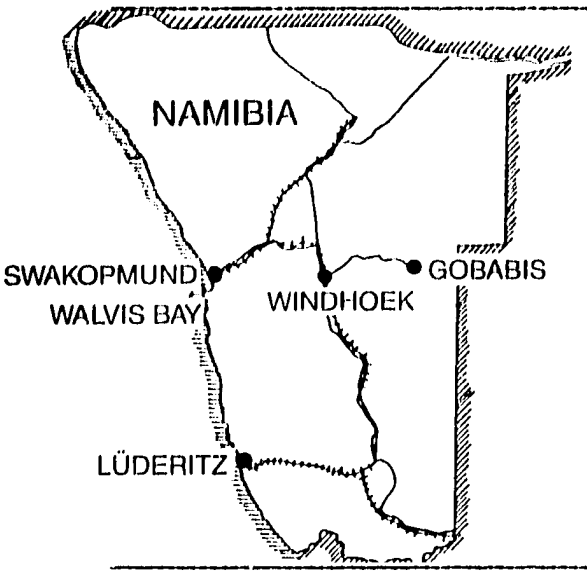
The traffic volumes vary from 800 to 2000 vehicles per day west of Mutare and are less than 100 vehicles per day near the border. The terrain in the project area is mainly mountainous. The last 30 Kilometres of the Harare-Mutare road were constructed some 30 years ago and require to be reconstructed and stren gthened.

A feasibility and preliminary engineering study, funded by Finland, was carried out and the Final report produced in November, 1987.

The study recommends the construction of the Mutare by-pass.
The project comprises the construction of 16,8 Km of new road, upgrading of 8,2 Km of existing road and the construction of 6 new bridges. The internal rate of return of this option is approx. 18 percent (baseline traffic forecast).

Status : Finland has agreed to fund detail design. Additional funding sought.

1.10.6 Construction of a bitumen surfaced road between Gobabis and Aus, Namibia.



Estimated Costs
Total : USD 14.7 million
Foreign : USD 14.7 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 14.7 million

Executing Agency:
Department of Transport

Start :
Duration: 48 Months

Objective : To provide an adequate road connection to the town of Luderitz, its fishing and tourist industries, the mining town of Rosh Pinah and the diamond mines at Oranjemund. A decrease in road user and accident costs is also expected as a result.

Description : Of the total distance of 334 Km between Keetmanshop, Aus and Luderitz (125) were upgraded to tarred road standards during the seventies. There now remains a 103 Km gravel section between Gobabis and Aus. The completion of this route was discontinued as a result of the scarcity of funds over the past decade, other priorities and, due to the low traffic volume, the economic justification of the project.

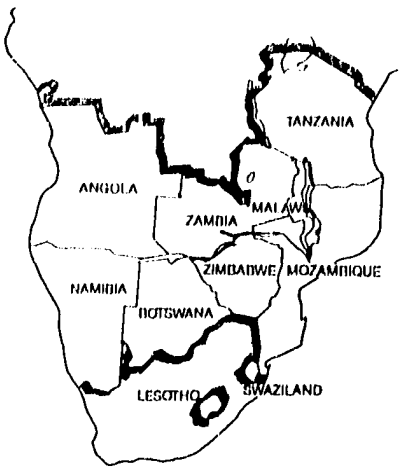
The alignment of the proposed new road bwteen Gobabis and Aus partly follows the existing route (43km) and partly a new alignment (56km) reducing the length to 99 km and elimination certain drainage problems. The project was divided into two sections with the first stretching from Gobabis to Weltevrede, a distance of 58 km, and the second from Weltevrede to Aus, a distance of 41 km. The geometric, material and drainage designs of the first section have been completed and of the six bridges on this section two have been designed and are in the process of being constructed. Survey work and the materials investigations on the second section have been finalised. Outstanding at this stage is therefore the design of the remaining four bridges on the first section, the geometric, materials and drainage design of the second section and documentation.

Status : Design in progress. Funding is being sought.

September 1990

Railways

2.0.6 Development of Railway Training, Regional



Estimated Costs
Total : USD 8.6 million
Foreign : USD 8.6 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.6 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 9.0 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
SADCC Technical Unit.

Start : 1990
Duration: 3 Years

Objectives : To organise regional railway management and technical training for SADCC railways in order to provide adequate skilled manpower to cope with the maintenance and operations of railways.

Description : The project consists of the following sub-projects:

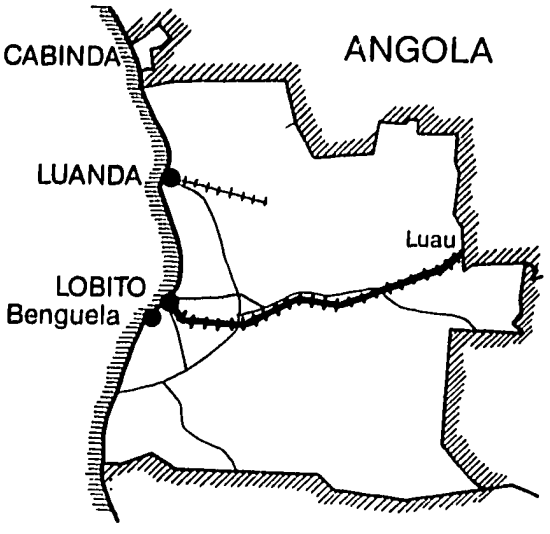
		USD (Thousand)
(i)	Management Development Courses	2.988,8
(ii)	Instructions' Training	830,1
(iii)	Language Training	500,0
(iv)	Specialist Courses for Managers	541,0
(v)	Technical Courses for Managers	500,0
(vi)	Provision of Training Aids	2.044,5
(vii)	Production of Handbooks and Manuals	565,8
(viii)	Support to Railway Training Subgroup Meetings	368,1
(ix)	SADCC Railways Training Expert (for 3 years)	261,0
	TOTAL	8.599,3

The plan includes 6 management development courses, 3 courses for instructors' training, language courses for portuguese speaking personnel to study English, 6 technical courses for engineers, 4 specialist courses for managers, plus support to these activities as listed under items (vi) - (vii) above.
The cost estimates include consulting services related to the various items.

Status : Project descriptions have been prepared as a sequel to P. 2.0.2, Study on Railway Training Programmes, carried out by DeConsult of Germany, financed by KFW. Pilot phase funded by GTZ conducted during 1989.
W Germany has pledged DM 8 Million and Switzerland DM 4,5 Million. A Railway Training Expert has been seconded from Zimbabwe to coordinate the program under the SADCC-TU.

September 1990

2.1.1 Benguela Railway Projects in the Ten Year Development Plan for Lobito Port Tran. System



Estimated Costs
Total : USD 346.2 million
Foreign : USD 346.2 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 2.5 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 343.7 million

Executing Agency:
CFB

Start : 1989
Duration: 10 years

Objectives : Rehabilitation and upgrading of the Benguela Railway to provide adequate capacity for future transport needs.

Description: The Ten Year Development Plan for the Lobito Port Transport System includes 24 railway subprojects (Benguela Railway) :

5 Manpower Development and Technical Assistance	(R-M)
1 Operational	(R-OP)
6 Civil Engineering	(R-CE)
2 Telecommunications	(R-ST)
3 Mechanical Engineering	(R-ME)
1 Energy	(R-E)

Project details have been published in the 10-Year development Plan for the Lobito Port Transport System. A series of subprojects which would be carried out during the first 18 months of the Plan (Preparatory Phase) has been identified.

Status : The status of costs and financing is presented in the following table:

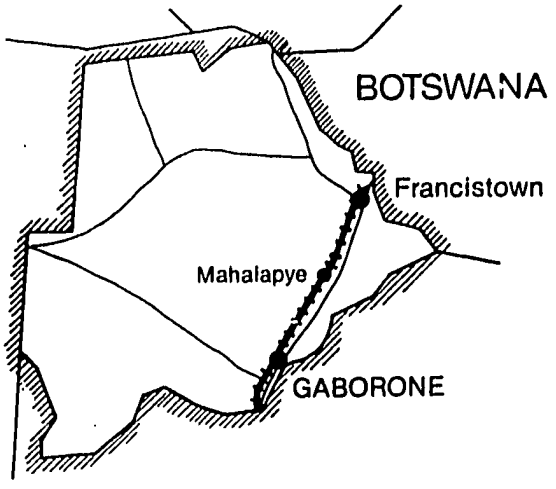
Status of Costs and Financing (USD, million)

Code	Project	Estimated Costs: Total	Estimated Costs: Preparatory Phase	Financing: Secured or Negotiated
R-M-1,	Manpower Development Plan (Study)	1.5	0.5	-
R-M-2,	Upgrading and Extension of Computer Facilities	0.9	0.0	-
R-M-3,	Railway Training Assistance	15.0	1.5	-

R-M-4,	Technical Assistance for Operation of the Railway	12.5	2.0	-
R-M-5,	Improvement of Railway Hospitals	6.0	3.0	-
R-OP-1,	Motive Power, Rolling Stock and Operation Plan	0.4	0.2	-
R-CE-1,	Track Repair and Upgrading	159.9	2.0	-
R-CE-2,	Establishment of Quarries	6.4	3.5	-
R-CE-3,	Sleeper Production Plants	3.0	2.0	-
R-CE-4,	Track Maintenance Equipment	16.0	6.2	-
R-CE-5,	Realignment Design - Cubal to Huambo	0.6	0.0	-
R-CE-6,	Realignment Study - Huambo to Luau	0.4	0.0	-
R-ST-1,	Train Control System and Telecommunications	14.5	0.0	-
R-ST-2,	Telephone Exchanges, CFB and Lobito Port	0.6 0.6	0.3 0.3	- -
R-ME-1,	Rehabilitation and Acquisition of Locomotives	20.0	2.5	2.5
R-ME-2,	Rehabilitation and Acquisition of Rolling Stock	65.0	2.0	-
R-ME-3,	Completion of Diesel Workshop and Re-equipment of Wheel Shop at Huambo	7.0	7.0	-
R-ME-4,	Conversion of the Steam Depot at Luena to Diesel Maintenance Depot	1.0	0.0	-
R-ME-5,	Workshop Facilities at Lobito	0.6	0.6	-
R-ME-6,	Review and Acquisition of Spare Parts and Reorganisation of Main Stores	10.3	0.3	-
R-ME-7,	Rescue Equipment and Accident Prevention Programme	1.1	0.0	-
R-ME-8,	Installation of 21 Automatic Barriers	1.6	0.0	-
R-ME-9,	Study on Improvement of Specialist Workshop in Huambo	0.1	0.0	-
R-E-1,	Electrical Supply and Distribution Systems for Lobito, Huambo and Luena	1.8	0.3	-
	Total	346.2	33.9	2.5

A Technical Co-ordination Conference to discuss the Plan was held in January 1989, and interest was expressed by donors for most of the projects in the Preparatory Phase of the 10-Year Plan. Follow-up contacts with donors concerned are in progress.

2.2.1. Rehabilitation of the Main Railway Line, Botswana



Estimated Costs
Total : USD 95.0 million
Foreign : USD 76.0 million
Local : USD 19.0 million

Funding Secured
Foreign : USD 3.0 million
Local : USD 19.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 73.0 million

Executing Agency:
Ministry of Works, Transport and Communications, Botswana
Start : 1984
Duration: 9 years

Objectives : Renewal of the track:

(1) Gaborone - Southern Border (120 Km),
(2) Francistown - Northern Border (85 Km), and
(3)Gaborone - Franscistown (435 Km)

Description : The railways in Botswana consist of a 640 Km main line which has two branch lines Serule - Selebi Pikwe (57 Km) and Palapye - Moropule (15 Km), in total 714 Km.

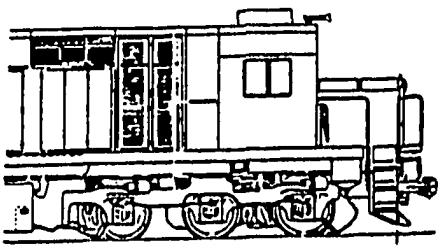
All rails and sleepers, with a few exceptions, were second -hand when laid in Botswana since 1961 from the Zimbabwe border southwards. After the track was constructed only normal maintenance were carried out but no systematic renewal of the track has been initiated. The track, especially some deteriorated sections, had reached a state where severe restrictions of speed and axle loads have to be applied. Therefore the renewal of the track or improvements of some bad sections were initiated in the following order of priority: (1) Gaborone - Southern Border (120 Km), (2) Franscistown - Northern Border (85 Km) and (3) Gaborone - Francistown. (435 Km)

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

Status : An agreement has been signed between the People's Republic of China and Botswana to finance the acquisition of rails and equipment and for technical assistance. To being with, the costs of sleepers, ballast and works is being financed by the Government of Botswana. The rehabilitation of the Gaborone-Southern Border (120 Km) and the Francistown -Northern Border (85 Km) sections has been completed. The project amounts to USD 114,0 millio including the cost of the completed track renewal.

A contract for USD 5.3 million covering cost of rails and technical assistance has now been signed with the People of China for the 88 Km section Francistown - Serule. Work commences Oct. 1990.
Funding is being sought for outstanding 347 Km.

2.2.6 Procurement of Shunting Locomotives and Rolling Stock, Botswana Railways



Estimated Costs
Total : USD 38.1 million
Foreign : USD 37.6 million
Local : USD 0.5 million

Funding Secured
Foreign : USD 18.5 million
Local : USD 0.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 19.1 million

Executing Agency:
Botswana Railways

Start : 1988
Duration: 5 years

Objectives : Procurement of adequate shunting locomotives and rolling stock for the (BR).

BR have been formally established and have taken over the operation of railways in Botswana from the NRZ. The NRZ need their rolling stock, formerly operated in Botswana, for their own operations. Passenger coaches will be withdrawn from the Botswana lines in 1989. Therefore BR need their own rolling stock.
Additional wagons are required for increased activity in the mining sector.
Several main line locomotives are used on shunting duties: shunting locomotives are needed.
The project includes the following acquisitions:

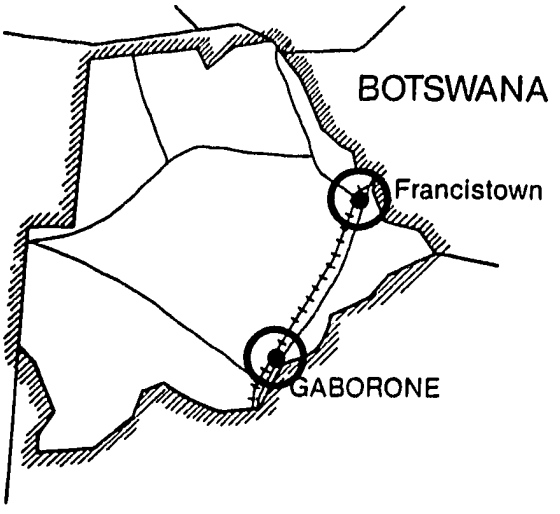
(i) goods wagons: 150 high side open, 230 drop side open (container carrying), 90 covered and 80 petrol/oil tanks;
(ii) 10 guards vans;
(iii) 41 passenger coaches in 1990 (US$ 16.750 million), spare parts (US$ 0.875 million), and maintenance facilities (US$ 0.5 million);
(iv) two coaches in 1994 (US$ 0.75 million);
(v) two coaches in 2002 (US$ 0.75 million);
(vi) 268 additional wagons by 1991: 101 high side open, 167 hopper (USD 9.4 million);
(vii) 8 shunting locomotives by 1992 (USD 7.0 million).

Passenger coaches (41), spares and maintenance facilities for passenger coaches are need in 1990 since NRZ need the present fleet (operated on hire basis) for their own operations after 1989. US$ 14,5 million are urgently needed for that purpose.

Status : Goods wagons and guard vans have been acquired from Zimbabwe financed by Japan (US $18.5 million). and are now in service.
BR is financing procurement of 41 passenger coaches (USD 15 million) contract has been signed and delivery commences June 1990 from U.K.
BR is financing procurement of 284 wagon 284 for Soda Ash. coal and salt (USD 11.6 million) contract signed with Chinese Supplier and delivery commences Feb 1991.

In addition DANIDA is financing purchase of 20 regrigerated containers. Additional funding is being sought.

2.2.7 Establishment of Dry Ports/ ICD's in Botswana



Estimated Costs
Total : USD 5.0 million
Foreign : USD 4.5 million
Local : USD 0.5 million

Funding Secured
Foreign : USD 0.5 million
Local : USD 0.5 million

Funding Under Negotiation
Total : USD 4.0 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
Ministry of Works, Transport and Communications, Botswana
Start : 1989
Duration: 2 years

Objectives : The establishment of dry ports/inland clearance depots in order to reduce transit transport costs and journey times through maritime ports and transit countries, achieve savings in foreign exchange payments, improve performance of the external trade and thereby contribute to economic development.

Description : In Botswana, two dry ports/ICD's facilities will be established at Francistown and Gaborone.

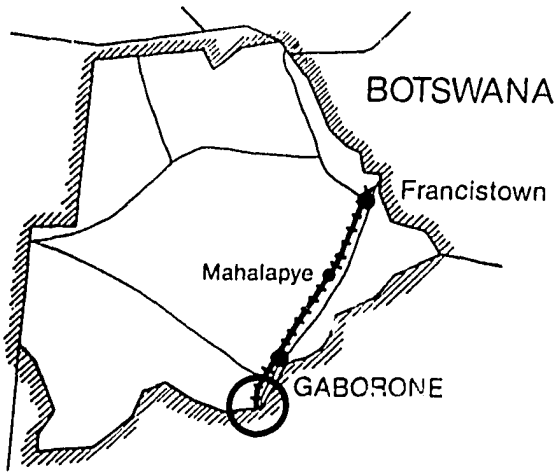
Dry port/inland clearance depot is a common used inland facility with public authority status equipped with fixed installations and offering services for handling and temporary storage of any kind of goods, including containers, carried under customs transit by any applicable mode of transport, placed under customs control and with customs and other agencies competent to clear goods for home use, warehousing, temporary admission, re-export, temporary storage for onward transit and outright export. *

Not all these features are to be incorporated in Phase 1, which will concentrate on providing container handling facilities, temporary storage of containers and customs clearance (including full loads from road haulage).

Status : Project descriptions have been prepared by the UNDP/UNCTAD Transit Transport Project RAF/77/017, including cost estimates and supporting documents covering customs matters of dry ports/ICD's operations, management and operations of dry ports /ICD's and documentation and legal matters.
Training of dry port personel is being discussed with UNDP/UNCTAD.
Work on both in advanced stage of design, target date for operations late 1991.
DANIDA has agreed to Fund 80% up to DKK 30 million for Gaberone terminal.Balance of Gaberone and complete Francistown terminal to be funded by Botswana Government.

* This definition of a dry port has been prepared by UNCTAD, Geneva, and has now been submited for clearence by the Customs Cooperation Council in Brussels.

2.2.8 Exchange Yard for Botswana Railways at Rakhuna



Estimated Costs
Total : USD 1.6 million
Foreign : USD 1.2 million
Local : USD 0.4 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.4 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.2 million

Executing Agency:
Botswana Railways

Start : 1987
Duration: 2 years

Objectives : To provide Botswana Railways with exchange facilities for international traffic at the Southern border in Botswana.

Description: The project includes the following components:

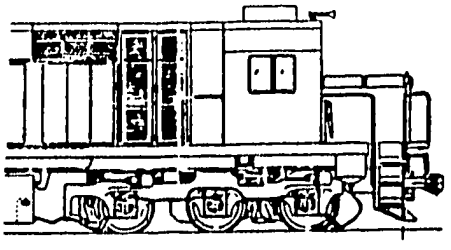
- 4 stabling / reception sidings;
- 1 engine run-round;
- 2 cripple sidings;
- 1 reversing triangle; and
- basic office space and a small number of houses for the yard staff.

Botswana Railways do not have free and unencumbered access to the marshalling yard at Mafeking in South Africa. Therefore the establishment of an exchange yard within Botswana has become necessary.

Status : Drawings and track formation lay-out have been prepared by the Botswana Railways. Track layout completed. Permanent housing replacing prefabricated structures now being built, funded by Botswana Railways Financing of the foreign currency part is being sought.

September 1990

2.2.10 Equipment for Maintenance Depots for Botswana Railways



Estimated Costs
Total : USD 4.2 million
Foreign : USD 4.2 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 4.2 million

Executing Agency:
Botswana Railways

Start : 1990
Duration: 2 Years

Scope : Equipment for the maintenance depots of the Botswana Railways.

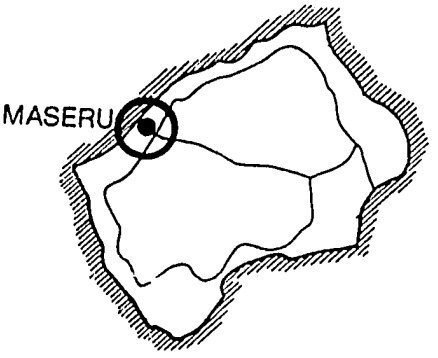
Contents : By the end of the first quarter of 1991, the Botswana Railways are scheduled to operate 40 diesel locomotives, 1085 wagons and 41 coaches, and one 95 tonnes rescue crane. The present facilities are not adequately equipped for maintenance purposes. The plan includes the following :

	USD, million
WHEEL SHOP (underfloor wheel lathe, 300 tonne wheel press, vertical turret lathe, axle lathe, magnaflux axle tester, oil injection extractor equipment, white metal crucible 5kg/ moulds, furnace, shaping machine)	2.835
STRUCTURAL SHOP (guillotine, plate rolls, plate bending machine, milling machine, marking out table, ultra sonic crack detector, surface grinder, bogie straightening press 100 tonne)	0.840
CARPENTRY SHOP (vertical band saw, combined woodworking machine)	0.018
FORGING SHOP (pneumatic drop forge hammer 500kg anvil and blacksmith's tools)	0.180
TESTING EQUIPMENT (test benches for compressors/exhausters, vacuum brake cylinders and air brake valves, single car air brake testing device, spectrograph/flash point/viscosity anlyser)	0.265
TOTAL	4.138

Status : A description has been prepared by the Botswana Railways. DANIDA have agreed to fund a final study on the extension to the Workshop at Mahalapye together with required equipment.
Funding is still required for the machinery especially the under floor wheel lathe.

2.3.1 Establishment of Dry Port/ICD in Lesotho

LESOTHO



Estimated Costs
Total : USD 1.4 million
Foreign : USD 1.0 million
Local : USD 0.4 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.4 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.0 million

Executing Agency:
Ministry of Transport and Communications, Lesotho
Start : 1990
Duration: 2 years

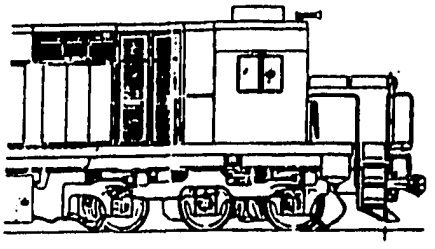
Objectives : The establishment of a dry port/inland clearance depot in order to reduce transit transport costs and journey times through maritime ports, improve performance of the external trade sector and thereby contribute to economic development.

Description: Lesotho is connected to the South African railway system by a single track line which terminates at the 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. Containerization is growing rapidly.

At present, overseas containers must be opened, regrouped and cleared at South African ports due to the absence of a customs terminal and the absence 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. The project ranks very high in the national plans, as it is very crucial to development efforts of Lesotho especially in view of the fact that is is geared towards promotion of Lesotho's trade links with SADCC member states by facilitating cargo handling and transportation and thereby reducing the country's overwhelming dependence on the Republic of South Africa. The project has been incorporated in the regional programme for the establishment of dry ports in the land locked countries of the Region.

Status : A feasibility study was completed in 1985. Design study has been made, financed by EEC. Funding is being sought.

2.4.2 Rehabilitation and Acquisition of Locomotives, Rolling Stock and Maintenance Equipment, MR



Estimated Costs
Total : USD 14.6 million
Foreign : USD 14.6 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 14.6 million

Executing Agency:
Malawi Railways

Start : 1990
Duration: 2 years

Objectives : Provision of adequate motive power rolling stock and track maintenance equipment for international traffic on the Nacala Line.

Description: International traffic on the Nacala-Malawi railway line has been interrupted for a few years. The rehabilitation works have progressed so that the line will be reopened for international traffic in 1989. CFM motive power will be inadequate to begin with since motive/power units are needed for rehabilitation works. Malawi will have to supply additional motive power. The rolling stock fleet has deteriorated to such an extent that additional wagons will have to be acquired. In addition a rescue crane and equipment for track maintenance are needed.

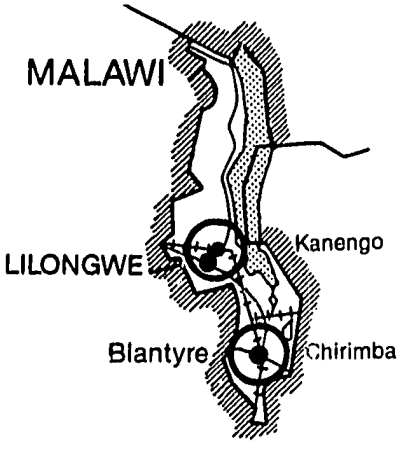
The project consists of the following parts:

		USD million
(i)	Rehabilitation 40 wagons	0.28
(ii)	Acquisition of 180 goods wagons, passenger coaches and vans;	11.65
(iii)	One tamper	0.52
(iv)	10 MW diesel generators and associated water pumps for outstations;	0.20
		12.65
	Contingencies	1.90
	TOTAL	14.55

Status : Detailed project descriptions have been prepared by Malawi Railways. Financing is being sought.

September 1990

2.4.3 Establishment of Dry Ports/ ICD's in Malawi



Estimated Costs
Total : USD 4.0 million
Foreign : USD 3.2 million
Local : USD 0.8 million

Funding Secured
Foreign : USD 0.5 million
Local : USD 0.8 million

Funding Under Negotiation
Total : USD 2.7 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
Ministry of Transport and Communications, Malawi
Start : 1989
Duration: 2 years

Objectives : The establishment of dry ports/inland clearance depots in order to reduce transit transport and costs and journey times through maritime ports and transit countries, achieve savings in foreign exchange payments, improve performance of the external trade sector and thereby contribute to economic development.

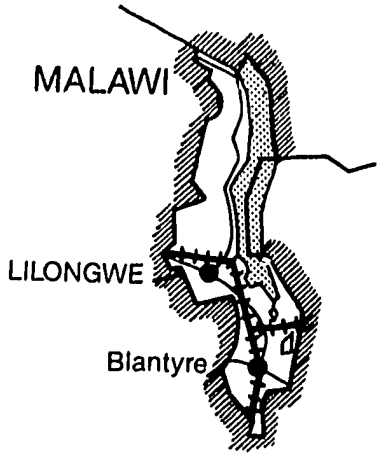
Description: In Malawi, one dry port/ICD facility will be established at Chirimba industrial site in Blantyre and one at the Canadian rail site at Kanengo in Lilongwe.

Dry port/inland clearance depot is a common user inland facility with public authority status equipped with fixed installations and offering services for handling and temporary storage of any kind of goods, including containers, carried under customs transit by any applicable mode of transport, placed under customs control and with customs and other agencies competent to clear goods for home use, warehousing, temporary admission, re-export, temporary storage for inward transit and outright export. *

Status : Project descriptions have been prepared by the UNDP/UNCTAD Transit Transport Project RAF/77/017, including cost estimates and supporting documents covering customs matters of dry ports/ICD's operations, management and operations of dry ports/ICD's and documentation and legal matters. A feasibility Study will be financed by Denmark. Negotiations are underway with Denmark.

* This definition of a dry port/ICD has been prepared by UNCTAD, Geneva, and has now been submitted for clearance by the Customs Cooperation Council in Brussels.

2.4.4 Improvement of Communications Systems, Malawi Railways



Estimated Costs
Total : USD 0.8 million
Foreign : USD 0.8 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.8 million

Executing Agency:
Malawi Railways

Start : 1990
Duration: 1,5 years

Objectives : Improvement of communication systems of Malawi Railways for efficient operations.

Description: The project components are included in the Telecommunications Ten-Year Development Plan of 1987. The project consists of the following parts :

(i) Rehabilitation of Shipping Communications on Lake Niassa/Nyasa/Malawi, operated by Malawi Railways, USD 0.35 million;

(ii) Locomotive Radio Communication system for the Nkaya - Nacala route, USD 0.15 million;

(iii) Replacement of PABX for Malawi Railways headquarters, USD 0.25 million; and

(iv) Upgrading of an open wire carrier system, USD 0.05 million.

The current equipment for shipping communications on the Lake was installed in the late 1960's. It is practically unreliable and spares are difficult to obtain. Therefore it needs improvement to cope with the anticipated increase of lake traffic.

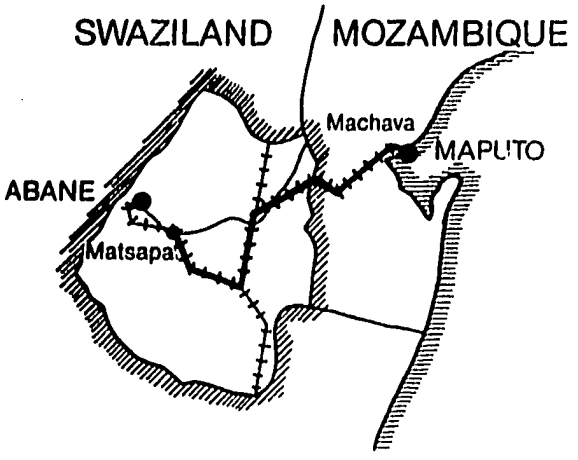
For safety and operational reasons, it is proposed to equip the four locomotives operating on the Nacala route with HF communications.

The existing PABX at Limbe is an obsolete Strowger exchange which has to be replaced.

The open wire system between Blantyre and Mozambique border will be upgraded from 5 channels to 12 channels.

Status : Funds are being sought for implementation.

2.5.1(03) Rehabilitation of Swaziland Railway, Matsapha - Mozambique Border



Estimated Costs
Total : USD 37.0 million
Foreign : USD 26.0 million
Local : USD 11.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 11.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 26.0 million

Executing Agency:
Swaziland Railway

Start : 1990
Duration: 3 years

Objectives : Rehabilitation of the Swaziland Railway, Matsapa-Mozambique Border, to provide adequate infrastructure for international traffic between Swaziland and Mozambique.

Description: The project consists of the following parts:

		USD (Thousands)
(i)	Earthworks and drainage	2570.4
(ii)	Protection works	1507.8
(iii)	Track, including ballast and sleepers	29526.2
(iv)	Turnouts	740.0
(v)	Signalling	1175.0
(vi)	Contingencies	1480.6
	TOTAL	37000.0

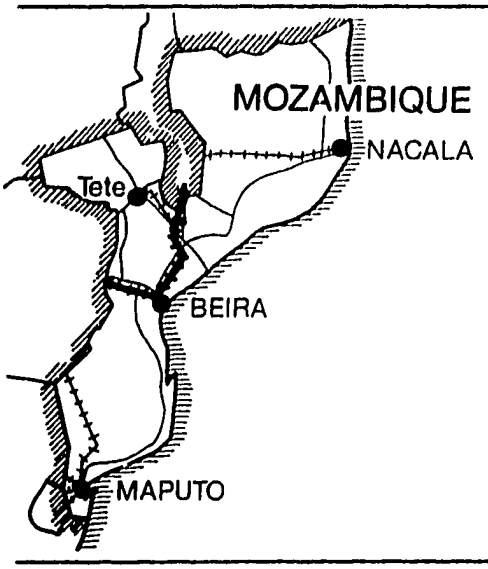
The 114.4 Km long line Matsapa-Mozambique border consists of 40 Kg/m rails on timber sleepers and with staggered joints. The track has deteriorated to such an extent that major rehabilitation is needed to provide adequate infrastructure for the anticipated traffic in the future. Project No. 2.5.1 (02) covers the Mozambique side of the line. Both subprojects should be implemented simultaneously since they constitute parts of the same main projects.

The future standard will be 48 Kg/m rails (as on the other sections of the Swaziland lines) on concrete sleepers with FIST fastenings permitting 20 tonne axle loads.

Status : Final Report of a Technical Study and Improvement of Machava-Swaziland Railway (P 2.5.1 (01)) has been completed by SOTECNI Consultants, financed by Italy. Option of rehabilitation with maximum use of existing permanent way material now preferred.

Funding is sought for implementation.

2.5.3 Railway Projects in Beira Port Transport System Development Plan



Estimated Costs
Total : USD 168.3 million
Foreign : USD 150.6 million
Local : USD 17.7 million

Funding Secured
Foreign : USD 97.5 million
Local : USD 17.7 million

Funding Under Negotiation
Total : USD 28.1 million

Financing Gap:
Total : USD 25.0 million

Executing Agency:
Beira Corridor Authority
(Partly Malawi/Zambia/Zimb.)
Start : 1986
Duration: 10 years

Objectives : Rehabilitation and upgrading of the railway lines to the Port of Beira and provision of facilities to provide adequate transport capacity for the future traffic demand.

Description: The 10-Year Development Plan for the Beira Port Transport System includes the following railway subprojects:

2 technical assistance (R-TA);
2 operational (R-OP);
6 civil engineering (R-CE);
6 telecommunications (R-ST); and
7 mechanical engineering (R-ME) projects, altogether 23 projects.

Project details have been published in the 10-Year Development Plan for the Beira Port Transport System.

Status : The status of costs and financing is presented in the following table.

Status of Costs and Financing (USD, million)

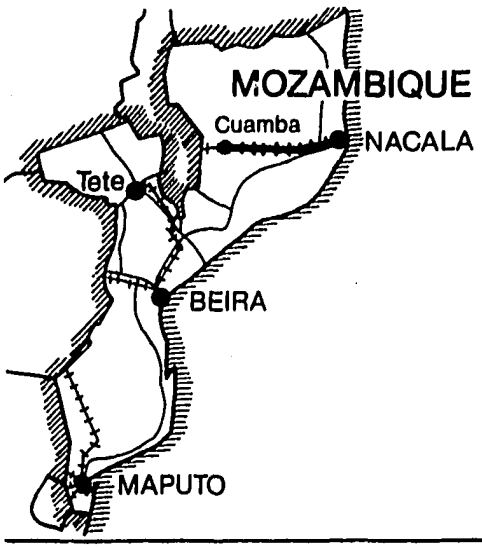
	Code	Project	Estimated Costs Total	Estimated Costs Foreign	Financing Secured or Negotiated
	(R-CE-03)	Track Rehabilitation Blantyre-Border	15.5	12.4	3.1 Malawi (12.4) UK
	(R-CE-04)*	Rehabilitation Dondo - Vila Nova / Moatize	83.8	70.8	75.2 (7.8)
	(R-CE-04)	A) Quarry and Sleeper Factory	19.0	19.0	19.0 (Italy)
	(R-CE-04)	B) Rehabilitation of Dondo - Inhaminga (156 Km)	64.0	51.0	43.2 (Italy) 13.0
Mozambique (7.8) OPEC	(R-CE-04)	C) Studies for Restauration and Strenghtening of Zambezi Bridge	0.8	0.8	0.0
	(R-CE-05)	Study, Rail Link Kafue - Lions	0.8	0.8	0.0
	(R-CE-06)	Line Boubling Beira to Dondo	8.0	6.4	1.6 Mozambique
	(R-CE-07	Track Maintenance CFM (C)	3.5	3.5	1.0 (Austria) (2.5) Can.
	(R-ME-01)	Scrapping, Salvaging and Rehabilitation of Wagons, Conversion to R.B'rings CFM (C)	2.5	2.5	0.0
	(R-ME-02)	C) Acquisition of Shunting Locomotives	5.4	5.4	0.0 (5.4) IDA/IBRD
	(R-ME-03)	Replacement of Malawi Railway Wagons	2.0	2.0	0.0
	(R-ME-04)	Rehabilitation of Locomotive Workshops CFM (C)	5.0	5.0	5.0 (USA)
	(R-ME-05)	Extension of Limbe Workshop	0.6	0.6	0.6 (UK)

(R-ME-06)	Facilities, Spares, Equipment for CFM (C) Workshops	6.2	6.2	0.0
(R-CE-07)	Rescue Cranes and Rerailing Equipment	2.0	2.0	2.0 (UK)
(R-CP-02)	Electrification Study	0.7	0.7	0.0
(R-ST-02)	Radio Telecommunication System for Beira - Machipanda	6.4	6.4	6.4 (Italy)
(R-ST-03)	Train Control System CFM (C)	4.8	4.8	2.8 (Italy) (2.0)
(R-ST-04)	Wagon Control System CFM (C)	1.0	1.0	0.0
(R-ST-05)	Replacement of Railway Telephone Exchanges CFM (C)	0.5	0.5	0.0
(R-ST-06)	Solar Power Panels, Blantyre to Border	0.1	0.1	0.0
(R-TA-01	A) Technical Assistance to CFM (C) Rail Division	3.5	3.5	3.5 (Spain)
(R-TA-01)	Railway Training	5.0	5.0	5.0 (IDA/IBRD)
(R-TA-02)	Technical Assistance to Malawi Railways	2.0	2.0	0.0
(R-TA-03)	Rehabilitation of CFM Wagons	3.2	3.2	3.2 (Denmark)
(R-TA-1)	B) Technical Assistance to Technical Dpartments	5.8	5.8	5.8 (IDA/IBRD)
	TOTAL	168.3	150.6	143.3

The projects are mostly being implemented. The importance of R-CE-4C, Study for restauration and strengthening of Zambeze River Bridge between Dona Ana and Sena, is emphasized.

Additional funds are being sought.

2.5.5 Rehabilitation of the Nacala - Entre-Lagos Railway, Mozambique



Estimated Costs
Total : USD 181.5 million
Foreign : USD 152.1 million
Local : USD 29.4 million

Funding Secured
Foreign : USD 110.8 million
Local : USD 29.4 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 41.3 million

Executing Agency:
DNPCF/EMN/MOZAMBIQUE

Start : 1983
Duration: 12 years

Objectives : To rehabilitate and upgrade the line between Nacala and Cuamba and to improve the stretch between Cuamba and Malawi border (Entre Lagos) by heavy maintenance, and rehabilitation and acquisition rolling stock and other facilities in order to provide means for international traffic between Nacala and Malawi and for Mozambique's internal development.

Description : The project is composed of the following parts:

	Cost (USD, million)	
	Foreign	Local
1. Track Rehabilitation		
(i) 1st Phase (Nacala-Nampula 192 Km)	0.0	0.0
(ii) 2nd Phase (Nampula-Cuamba 346 Km)	121.4	22.2
(iii) 3rd Phase (Cuamba-Entre Lagos 77 Km)	12.8	5.9
2. Rehabilitation of 7 GE Locomotives	3.5	0.0
3. Rehabilitation of 30 coaches	1.1	0.0
4. Railway Telecommunications	6.8	0.1
5. Workshop equipment and material	6.5	1.2
Total	152.1	29.4

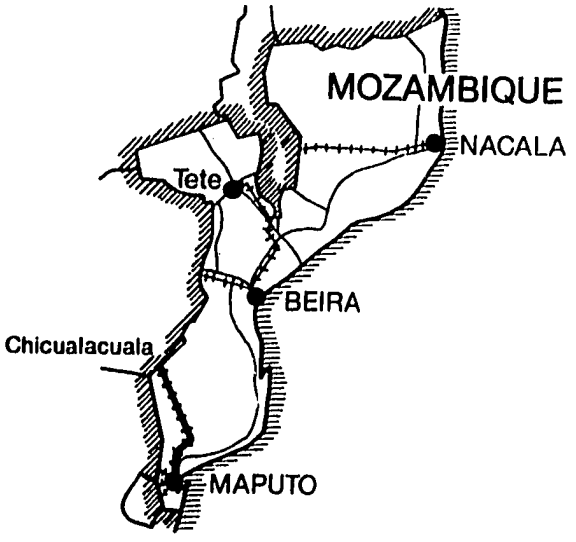
Acquisition of new locomotives, wagons, coaches, additional maintenance equipment etc. are programmed after 1994 (not included in the above). Rehabilitation of wagons is included in P. 2.5.8 and acquisition of new locomotives for CFM as a whole, in P. 2.5.12.

Status : The 1st Phase of the track rehabilitation (USD 101.5 million) has been completed, and the 2nd phase is ongoing. The project amounts to USD 283 million including the cost of the completed part.

The following funds have been secured (including completed Phase 1(i)):

France USD 99.8 million, Portugal 40.4, Canada 35.7, EEC 30.0, Italy 4.0, UK 2.1, Finland 1.5 and Mozambique 30.3 million. Additional USD 41.3million is needed to complete the programme.

2.5.6(03) Rehabilitation of Maputo - Chicualacuala Railway



Estimated Costs
Total : USD 229.4 million
Foreign : USD 220.9 million
Local : USD 8.5 million

Funding Secured
Foreign : USD 105.1 million
Local : USD 8.5 million

Funding Under Negotiation
Total : USD 21.8 million

Financing Gap:
Total : USD 94.0 million

Executing Agency:
DNPCF/EMS Mozambique

Start : 1986
Duration: 15 years

Objectives : Rehabilitation and upgrading of the track, motive power, rolling stock, workshops and other facilities to make it possible to reopen the line for international traffic and to provide adequate capacity for the future traffic demand.

Progress : The first phase of the project was initiated in 1986, financed by UK and Mozambique, and continues until 1989. The second phase, based on the Study on Rehabilitation, Operation and Maintenance of Limpopo Line by Mott, Hay and Anderson of UK and SLI Consultants of Canada, has also been initiated.

On that basis, the project is composed of the following subprojects :

		Cost Estimate USD ('000)		
		Total	Foreign	Local
(i)	First Phase			
	Operations study, track renewal km 471-525; Resleepering ballasting and welding km 4-84; Track renewal in Maputo yard; quarry; sleeper factory; welding plant; railway telecommunications Maputo-Chicualacuala; tools and equipment; technical assistance and training.	27,000	25,000	2,000
(ii)	Second Phase: Core Programme			
C-QO-1	Quarry equipment	744	739	5
C-QO-2	Ballast for track upgrading/renewal	1,369	0	1,369
C-SF-1	Equipment for sleeper factory	399	394	5
C-SF-2	Sleepers for track renewal	3,203	2,689	514
C-MD-1-2	Equipment and yard improvement, Machava rail depot	1,077	1,072	5

C-TM-1	Steel sleepers by NRZ	10	10	0
C-TM-2	New rails (70 km)	5,128	5,123	5
C-TM-3	New turnouts	645	640	5
C-BG-1-2	Bridge works	4,255	4,250	5
C-RM-1	Track renewal operations by BMS	3,766	1,632	2,134
C-RM-2	Ballast Wagons	3,830	3,825	5
C-RZ-1	Oberheads and Preliminaries by NRZ	4,655	4,655	0
C-RZ-2	Ballast, concrete sleepers by NRZ	17,968	17,968	0
C-RZ-4	Provisional Items, by NRZ	4,734	4,734	0
C-RZ-5	Accomodation Works, by NRZ	2,540	2,540	0
C-RZ-3	Track renewal operations by NRZ	2,138	2,138	0
C-OM-1	Workshop organization and methods study	600	600	0
* C-LO-1	Spare parts and materials for locomotive workshops	6,450	6,450	0
	C-LO-2 Repairs to tools and equipment (locos)	750	750	0
C-LO-3	New tools and equipment (locos)	2,500	2,500	0
C-LO-4	Building repairs, loco workshops	1,747	1,525	222
* C-LO-5	Technical assistance and training (loco workshops)	800	800	0
C-LO-6	Accommodation, technical assistance (locos)	3,000	2,700	300
** C-WA-1	Spare parts and materials, wagon workshops	-	-	-
** C-WA-2	Equipment repair and replacement (wagons)	-	-	-
** C-WA-3	Building repairs (wagon workshops)	-	-	-
** C-WA-4	Technical assistance and training (wagon workshops)	-	-	-
		-	-	-
** C-WA-5	Accommodation for technical assistance	-	-	-
C-BR-1	Repair and rehabilitation, other buildings and services	823	715	108
C-BR-2	Rehabilitation of Permanent Water Supplies	1,792	1,670	122
C-BR-3	Rehabilitation of Power Generation Facilities	1,046	1,000	46
*** C-RD-1	Road Maputo-Chokwe-Chicualacuala	-	-	-
C-TA-1	Management assistance to BMS	2,240	2,229	11
C-TA-2	Technical Assistance for Track Rehabilitation Programme	6,460	6,460	0
C-TA-3	Management and Technical Assistance to CFM (S)	1,753	1,753	0
C-TA-4	Accommodation for technical assistance	1,000	900	100
C-FC-1	Technical Assistance for Financial Control	1,125	1,125	0
C-RC-1	Rescue Crane and Rerailing Equipment	6,400	6,400	0
C-SC-1	Stores and Inventory Control:Equipment	941	941	0
C-SC-2	Stores and Inventory Control:Technical Support	566	560	6
C-ST-1	New Signal System between Maputo and Machava: Study	500	475	25
C-ST-2	New Signal System between Maputo and Machava: Implementation	5,000	4,475	525
C-TE-1	Heavy Equipment for Track Maintenance	4,271	4,266	5
C-TE-2	Track Light Equipment and Tools	2,134	2,129	5
C-TL	Telecommunications	3,300	3,250	50
	Subtotal, Core Programme	111,659	106,082	5,577

* USD 2.4 million for spares and 4.0 million for technical assistance are included in Project No. 2.5.12, Rehabilitation and Acquisition of Locomotives for C.F.M.

** Project Cost USD 10,612 million, included in Project No. 2.5.8, Rehabilitation and Maintenance of Wagons-CFM.

*** Project cost, USD 24,970 million, included in Project No. 1.5.6, Road Linking Southern Zimbabwe with Maputo Area.

(iii) Second Phase: Additional Support Programme

A-LO-1	Spare parts and materials (loco workshops)	26,550	26,550	0
A-LO-2	Technical assistance and training (loco workshops)	27,200	27,200	0
A-LO-3	Accommodation for technical assistance	2,000	1,800	200
A-WA-1	Spare parts and materials (wagons)	2,250	2,250	0
A-WA-2	Technical assistance and training (wagon workshops)	27,200	27,200	0
A-WA-3	Accommodation for technical assistance	2,000	1,800	200
A-BR-1	Railway housing	738	645	93
A-BR-2	Station buildings	920	800	120
A-BR-3	Other buildings	1,839	1,605	234
	Subtotal, Additional Support Programme	90,697	89,850	847
	Grande total	229,356	220,932	8,424

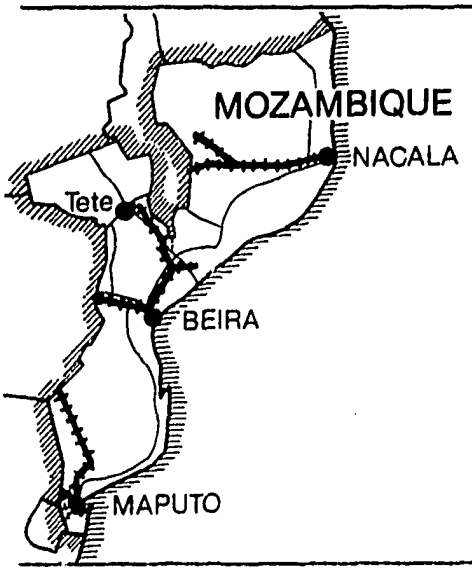
Status : The first phase is fully financed by UK (USD 25.0 million) and Mozambique (USD 2.0 million).

The following funds have been secured for the Core Programme of the second phase :

UK	USD 23.9 million
Canada	USD 17.0 million
USA	USD 21.6 million
Mozambique	USD 8.5 million
FRG	USD 25.1 million
Botswana	USD 3.6 million
Portugal	USD 0.8 million
EEC	USD 14.0 million
Sweden	USD 1.5 million
Others	USD 2.0 million

USD 9.7 million under negotiation with: FRG, US and others.
The funding gap of the Core Programme is USD 7.1 million.

2.5.8 Rehabilitation and Maintenance of Wagons - CFM, Mozambique



Estimated Costs
Total : USD 30.1 million
Foreign : USD 27.0 million
Local : USD 3.1 million

Funding Secured
Foreign : USD 3.8 million
Local : USD 3.1 million

Funding Under Negotiation
Total : USD 4.2 million

Financing Gap:
Total : USD 19.0 million

Executing Agency:
DNPCF, Mozambique

Start : 1987
Duration: 4 years

Objectives : Rehabilitation of rolling stock, change over to roller bearings and provision of facilities for wagon maintenance.

Description: The project includes the following sub-projects :

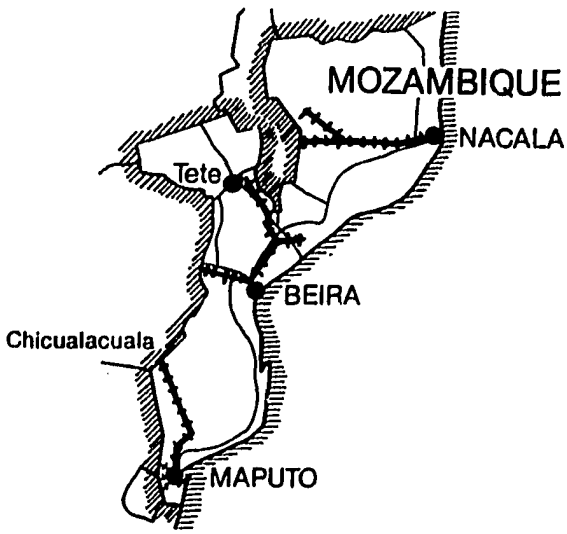
		Cost (USD, million) Total	Foreign
(i)	Workshop for CFM-N (Nampula), repair tracks at key locations, spares, materials, tools, technical assistance;	6.4	5.9
(ii)	Rehabilitation and salvaging of wagons; provision of spare parts,equipment,building repair and Technical Assistance for Wagon Workshop,Maintenance Depots and Repair Tracks of CFM (S);	16.7	15.5
(iii)	Conversion of 1000 CFM-S and CFM-N wagons to roller bearings, and refurbishment	7.0	5.6
	Total	30.1	27.0

Corresponding projects for CFM-C are included in Project No. 2.5.3, related to the 10-Year Development Plan for the Beira Port Transport System.
Workshop improvements, and spare parts,including technical assistance for CFM-S have now been included under this project.
The above sub-projects are based on the findings of Project No. 2.0.1, Study of Railway Rolling Stock, carried out by KAMPSAX-SWEDRAIL.
Former Projects No. 2.5.8, Change Over to Roller Bearings and Reconditioning of Wagons; 2.5.9, Facilities, Materials, Spares and Equipment for Workshops; and 2.5.10, Wagon Rehabilitation CFM-S, have been combined under this project.

Status : Part of item (ii), Rehabilitation of 150 Wagons CFM-S, completed financed by Italy and Mozambique (USD 3.0 million). UK will finance roller bearings for 200 wagons for CFM-N (USD 1.0 million).

Additional funding is being sought. USD 4.2 million under negotiation with Italy. CIDA, DANIDA and Japan have pledged participation in the project.

2.5.11 Computerized Wagon Control System for CFM, Mozambique



Estimated Costs
Total : USD 2.5 million
Foreign : USD 2.0 million
Local : USD 0.5 million

Funding Secured
Foreign : USD 1.5 million
Local : USD 0.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.5 million

Executing Agency:
DNPCF, Mozambique

Start : 1989
Duration: 1 year

Objectives : Introduction of computerized wagon control for Mozambique Railways (CFM), pilot project for CFM(S).

Description: Several studies for computerized wagon control have been made. The basic concepts proposed by RITES have been approved for implementation covering 10 sub-systems of CFM(S) (cost estimate USD 9.0 million). To begin with a pilot project (2.5 million) for CFM-South has been approved for implementation.

The long term project includes 10 sub-systems but the present pilot project only 3-4 such systems. It includes training of personnel and provision of expert services.

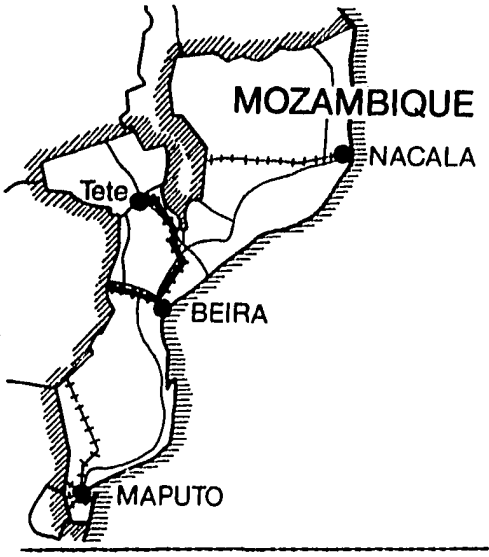
The part not yet funded is composed of :

- Equipment	USD 140.000
- Consultancy and training	USD 110.000
- Transfer of existing applications	USD 250.000
Total	USD 500.000

A computerized system is already in operation in Zimbabwe. Similar services should be available in Mozambique for the proper control of international operations. The advantages include better utilization of wagons, less hire charges, better maintenance, better customer services and proper accounting of hire charges.

Status : USD 1.5 million have been secured from Kuwait and 0.5 million in local currency. Four soft-ware specialists have been contracted. USD 0.5 million should be provided to complete the implementation of the pilot project. A site has been allocated to the computer centre and a project office has been established.

2.5.12 Rehabilitation and Acquisition of Locomotives for CFM



Estimated Costs
Total : USD 103.0 million
Foreign : USD 103.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 13.5 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 12.4 million

Financing Gap:
Total : USD 77.1 million

Executing Agency:
DNPCF, Mozambique

Start : 1989
Duration: 5 years

Objectives : Provision of adequate motive power for main line operations for the Mozambique Railways to cope with the traffic.

Description: The project consists of the following parts :

(i)	Rehabilitation of 10 GE locomotives	USD 9.0 million
(ii)	Purchase of 45 new locomotives	USD 90.0 million
(iii)	4 GE locomotive power packs	USD 3.2 million
(iv)	Contingencies	USD 0.8 million

The above includes the initial supply of spare parts and tools, and provision of technical assistance.
At present the main line fleet consists of 63 GE and 2 AEI diesel electric locomotives. Altogether 34 units are operational and 22 planned for local repairs. Another 13 units are considered for rehabilitation. In addition 6 steam locomotives have been rehabilitated for main line operations. Other steam locomotives are not worth while to repair but will be scrapped. (A separate programme is going on to repair the fleet of diesel hydraulic shunting locomotives locally).
8-10 units are needed for track rehabilitation works on each of the following lines : Nacala - Malawi; Beira - Zimbabwe and Maputo - Zimbabwe. Similar needs will arise in the near future for the Beira - Malawi and Maputo - Swaziland lines.
In total 45 new main line locomotives are needed, based on the recent RTMS Study of Locomotives for DNPCF-Mozambique, commisioned by the World Bank:
- 11 for CFM (S)
- 20 for CFM (C)
- 14 for CFM (N)

The shortage of motive power, to cope with the above works and present and anticipated traffic, will be covered in the first place by the above programme.

Status : A project description has been prepared. USAID will finance the rehabilitation of 8 GE locomotives, USD 6.4 million (of which 2.4 million for spares and 4.0 million for technical assistance and training). Japan will finance the acquisition of 5 locomotives. Additional funds are sought. USD 12.4 million in negotiation with IBRD.

2.5.13 Development of Railway Training for Portuguese speaking Personnel

Estimated Costs
Total : USD 25.3 million
Foreign : USD 24.2 million
Local : USD 1.1 million

Funding Secured
Foreign : USD 24.2 million
Local : USD 1.1 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
SATCC

Start : 1984
Duration: 6 Years

Objectives : Development of training of Portuguese speaking executives and personnel in Mozambique and Angola to provide them with basic professional knowledge for their work.

Description: When Mozambique gained independence an exodus of Portuguese railway personnel, especially of executives, took place. The personnel remaining in the railway service had to assume duties for which they had not been prepared. To overcome these problems a study was carried out by SOFRERAIL/NORMA/SEDES Consultants. The facilities will be available also for Angola.

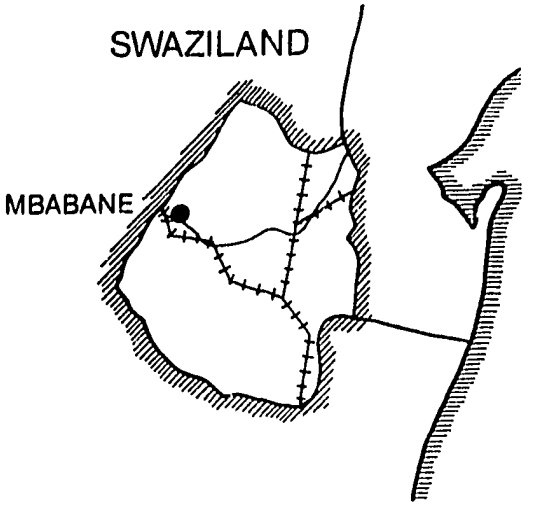
Based on the recommendations of the consultants a 3-phase programme has been approved.

		Cost USD Million
1st Phase		
Development of the Railway School at Inhambane, short term courses and pedagogical training	Foreign	10.9
	Local	0.4
	Total	11.3
2nd Phase		
Technical assistance, development of school activities and on the job training and rehabilitation of regional training centres	Foreign	13.3
	Local	0.7
	Total	14.0

3rd Phase
To be defined later on the above basis.

Status : France, Portugal and Mozambique have financed the 1st phase (USD 11.3 million) which has been completed in June 1987. French and Portuguese financing for the 2nd phase is USD 5.9 million. The rest is financed by EEC. A detailed programme for the 2nd phase has been prepared by SOFRERAIL/SEDES/NORMA.

2.7.1 Rolling Stock for Swaziland Railway



Estimated Costs
Total : USD 16.5 million
Foreign : USD 16.0 million
Local : USD 0.5 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 16.0 million

Executing Agency:
Swaziland Railway

Start : 1990
Duration: 3 years

Objectives : To provide Swaziland Railway with adequate rolling stock and maintenance facilities to cope with the traffic demand.

Description : The project consists of the following parts:

	Cost (USD), Million)
(i) Acquisition of 120 dropsided, 100 coal, 75 fruit, 48 timber, 24 covered, 15 flat, and 51 molasses tank wagons;	15.0
(ii) Conversion of 130 old iron ore wagons to high-sided wagons for bulk transport;	0.5
(iii) Wagon and machine workshop and equipment	1.0
Total	16.5

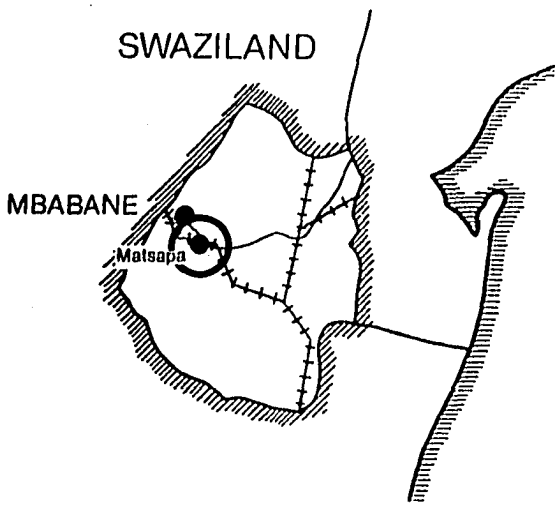
At present the Swaziland Railway hires wagons from the neighbouring countries partly because the previous stock has been of wrong type and has deteriorated. In essence the project aims at replacing the hired wagons by their own and at providing maintenance facilities for their own fleet.

Only a small shelter at Sidvokodvo is available for wagon repairs with inadequate facilities. A new combined wagon workshop and repair track is urgently needed.

Status: Funding is sought for implementation.

September 1990

2.7.2 Establishment of Dry Port/ICD in Swaziland



Estimated Costs
Total : USD 0.7 million
Foreign : USD 0.5 million
Local : USD 0.2 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.2 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.5 million

Executing Agency:
Ministry of Works and Communications, Swaziland
Start : 1990
Duration: 2 years

Objectives : The establishment of a dry port inland clearance depot in order to reduce transit transport costs and journey times through maritime ports, improve performance of the external trade sector and thereby contribute to economic development.

Description: In Swaziland, one dry port/ICD facility will be established at the railway yard at Matsapha between Manzini and Mbabane.

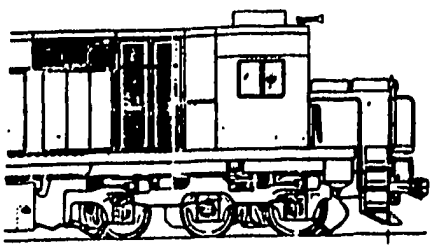
Dry port/Inland clearance depot is a common user inland facility with public authority status equipped with fixed installations and offering services for handling and temporary storage of any kind of goods, including containers, carried under customs transit by any applicable mode of transport, placed under customs control and with customs and other agencies competent to clear goods for home use, warehousing, temporary admission, re-export, temporary storage for onward transit and outright export. *

Status : Project description has been prepared by the UNDP/UNCTAD Transit Transport Project RAF/71/017, including cost estimates and supporting documents covering customs matters for dry ports/ICD's operations, management and operations of dry ports/ICD's and documentation and legal matters.

* This definition of a dry port/ICD has been prepared by UNCTAD, Geneva and has been submitted for clearance by the Customs Co-operation Council in Brussels.

September 1990

2.7.4 Dieselization of Swaziland Railway



Estimated Costs
Total : USD 40.0 million
Foreign : USD 40.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 40.0 million

Executing Agency:

Start : 1990
Duration: 4 years

Objectives : To replace the leased steam locomotives and to provide Swaziland Railway with their own diesel locomotives.

Description : Swaziland Railway is carrying most of Swaziland's bulk export like sugar, molasses, coal, pulp, citrus etc. All these are new traffic demands and require additional motive power.

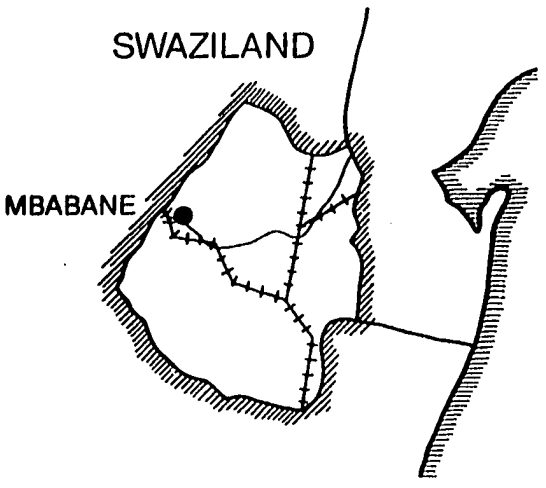
At present the trains are pulled by steam locomotives leased from South Africa. The hire charges are increased annually by 15-20 per cent and are considered exorbitant. The arrangement has made railway operations completely dependent on South Africa.

To provide security for the operations it is considered essential that the Swaziland Railway will acquire their own locomotive fleet. It has been decided to modernize the operations by diesel power. It is estimated that 19 diesel electric locomotives are needed to handle the anticipated traffic, mostly to and from Maputo.
Immediate needs for next five years, indicate that six diesel - electric locomotives plus augumentation of maintenance facilities are needed for stage 1 of project. (USD. 15.million)

Status : Funds are being sought for implementation.

September 1990

2.7.5 Provision of Operating, Security and Safety Related Equip. for Swaziland Railway



Estimated Costs
Total : USD 2.0 million
Foreign : USD 2.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.0 million

Executing Agency:
Swaziland Railway

Start : 1990
Duration: 2 Years

Objectives : Acquisition of relevant equipment to reduce Swaziland Railways' dependenne on RSA and to enhance the operating efficiency, security and safety of the railway operations between Swaziland and Maputo.

Description : The project is composed of the following parts :

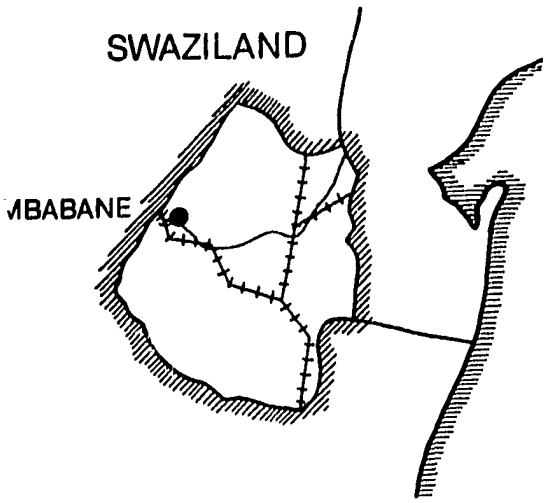
		Cost (USD, million)
(i)	500 bitumised tarpaulins	0.3
(ii)	Heavy track maintenance equipment	0.3
(iii)	Rescue equipment	0.25
(iv)	Weed control equipment	0.5
(v)	2 mechanical horses and 4x2 axle trailers (for containeir transport)	0.31
(vi)	Mobile clinic	0.06
(vii)	50 tonne portal container crane	0.28
	Total	2.00

At present tarpaulins are hired from SA, on the condition that traffic is directed partly over SA lines. Track maintenance equipment includes a bull-dozer, grader, sheepsfoot roller and vibrator grid roller. A 5-7 tonne lorry provided with a compressor, 4 air-controlled 50-tonne jacks and a bull-dozer are needed as rescue equipment. The present mobile clinic vehicle was bought in 1982 and should be replaced with modern equipment.

Status : Funds are sought for implementation.

September 1990

2.7.6 Integrated Telecommunications for Swaziland Railway



Estimated Costs
Total : USD 2.5 million
Foreign : USD 2.5 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.5 million

Executing Agency:
Swaziland Railway

Start : 1990
Duration: 2 years

Objectives : To provide Swaziland Railway with an adequate telecommunications system for operations and train control.

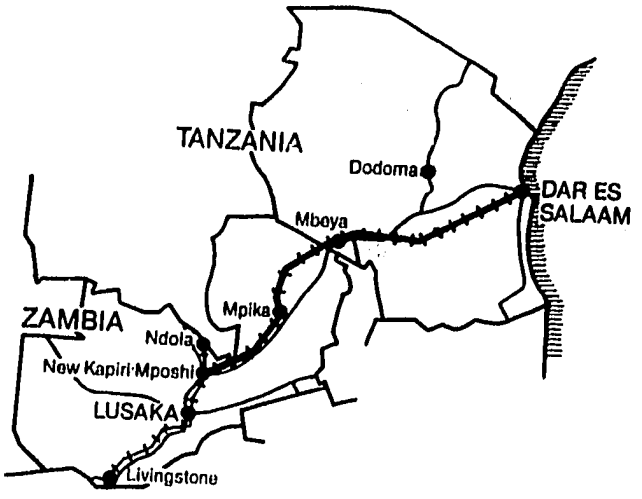
Description : Swaziland Railway operates its own trackside open-wire system for station-to-station communications. No multiplex equipment is used. An old 50 line Stromger PABX at Sidvokodvo is nearing the end of its useful life. Exchanges are necessary also at other sites.

The project comprises open-wire carrier equipment to increase the traffic capacity, six new PABX's, and two parrallel VHF mobile radio systems for train control and wayside communications. Associated antennae, towers, power equipment, test equipment, spares, engineering, installation and commissioning and training services are to be included.

Status : The project is based on the recommendations of the regional Study on Railway Telecommunications and Signalling (P. 2.0.4) carried out by SLI Consultants under the Canadian Technical Services Fund.
Funding is sought for implementation.

September 1990

2.8.1 TAZARA 10 Year Development Plan and Malawi-Dar es Salaam Projects



Estimated Costs
Total : USD 361.7 million
Foreign : USD 341.9 million
Local : USD 19.8 million

Funding Secured
Foreign : USD 152.1 million
Local : USD 19.8 million

Funding Under Negotiation
Total : USD 27.0 million

Financing Gap:
Total : USD 162.8 million

Executing Agency:
TAZARA

Start : 1985
Duration: 10 years

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

Progress : The Revised 10 Year Development Plan prepared by TAZARA with assistance from SATCC/TU includes permanent way and construction projects (CE Projects), signalling and telecommunication projects (ST Projects), motive power, rolling stock and mechanical equipment projects (ME Projects), and general management and training projects (GM Projects).

Projects to facilitate Malawi traffic to TAZARA have been added.
The projects are mostly being implemented. The status is described below.

Status : The following countries and organizations have pledged to finance TAZARA projects, Austria, Denmark, Federal Republic of Germany, Finland, Norway, People's Republic of China, Sweden, Switzerland, USAID, ADB and EEC. Related Malawi projects are financed by KfW, ODA and USAID.

The status of costs and financing is presented in the following table.

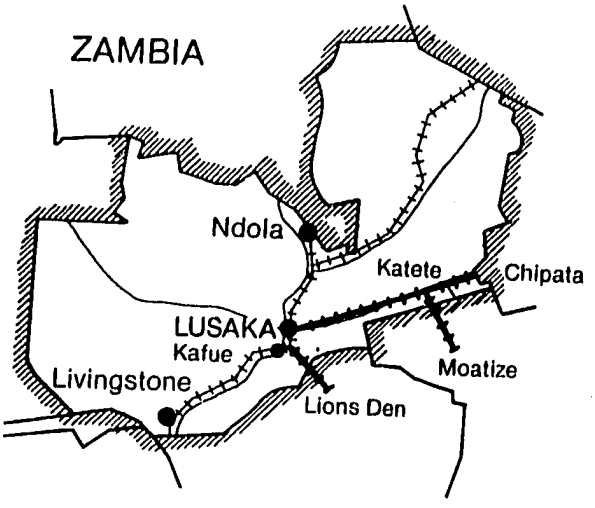
STATUS OF COSTS AND FINANCING (USD million)

	Estimated Cost		Financing	
	Total	Foreign	Secured or Under Neg.	Gap
CE:1 Rehabilitation of Quarries	17.9	16.2	17.9	0.0
CE:2 Permanent Rectification of Landslides	32.7	27.6	32.7	0.0

CE:3 A Mechanized Track Maintenance	22.0	21.9	11.2	10.8
CE:3 B Spare and Wear Parts	2.5	2.5	0.0	2.5
CE:3 C Manual Track Maintenance	18.0	15.0	3.0	15.0
CE:4 Rail Welding	23.4	18.7	4.8	18.6
CE:5 Rail Burn Repairs	8.1	7.6	8.1	0.0
CE:7 Railway Link TAZARA - Mpulungu Port, Zambia, Study	0.4	0.4	0.0	0.4
CE:8 Emergency Bridges	0.9	0.9	0.0	0.9
ST:1 Solar Power Panels *	4.3	3.4	4.3	0.0
ST:2 Back-up HF Radio Link combined with ST-1				
ST:3 Teleprinters combined with ST-1				
ST:4 Feasibility Study on Future Telecommunication System	0.7	0.7	0.0	0.7
ME:1 Locomotives	104.4	101.9	54.2	50.2
ME:2 A Goods Wagons	17.0	17.0	17.0	0.0
ME:2 B Phase II	30.0	30.0	0.0	30.0
ME:3 Trolleys and Trailers	12.5	12.5	3.2	9.3
ME:4 Handling Equipment for Goods Depot	0.5	0.5	0.0	0.5
ME:5 A Rescue Cranes and Rerailing Equipment	6.8	6.6	6.8	0.0
ME:5 B Accident Prevention	1.2	1.2	1.2	0.0
ME:6 A Wheel Lathes	3.7	3.6	3.7	0.0
ME:6 B Underfloor Wheel Lathes	1.5	1.5	0.0	1.5
ME:7 Mechanical Equipment for Workshops	10.4	10.4	1.8	8.6
ME:8 Coaches	10.0	10.0	0.0	10.0
GM:1 A Technical Assistance to Head Office	3.9	3.9	3.9	0.0
GM:1 B Job Evaluation	0.6	0.6	0.0	0.6
GM:2 Manpower Development Plan and Training	6.5	6.0	6.5	0.0
GM:3 Project Coordination Unit	5.5	5.0	5.5	0.0
Total TAZARA	345.4	325.6	185.8	159.6
MALAWI PROJECTS related to TAZARA				
ME:9 Tank Wagons and Tank Containers	1.3	1.3	1.3	0.0
CE:9 Malawi Cargo Centre, Mbeya	6.4	6.4	6.4	0.0
CE:10 Malawi Cargo Centre, Dar es Salaam	8.6	8.6	8.6	0.0
Total Malawi Rail Projects	16.3	16.3	16.3	0.0
GRAND TOTAL	361.7	341.9	202.1	173.8

Additional funds are being sought. The Plan has been reviewed and revised.

2.9.1 Zambia Railways 10-Year Development PLAN



Estimated Costs
Total : USD 314.9 million
Foreign : USD 227.1 million
Local : USD 87.8 million

Funding Secured
Foreign : USD 16.5 million
Local : USD 87.8 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 210.6 million

Executing Agency:
Zambia Railways

Start : 1990
Duration: 10 Years

Objectives : A 10-Year Development Plan has been prepared for the Zambia Railways for rehabilitation and for the purposes to handle the future traffic.

Description : The TYDP includes the following parts:
- 9 civil engineering projects
- 8 telecommunications projects
- 8 mechanical engineering projects
- 4 general management projects

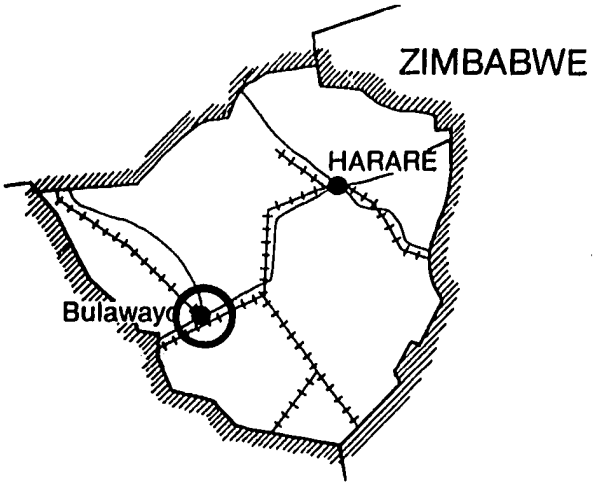
The details of the projects have been given in the booklet Zambia Railways Limited, 10-Year Development Plan, of January, 1990.

Status : The plan has been approved by SNTCC. A technical coordination conference was held in June 1990, as a result some pledges were made and are being followed up. Some aspect will be reviewed.

		USD, million			
		Estimated Costs		Financing	
Code	Project	Total	Foreign	Secured or Negotiated	Gap
CE:1	Track Renewal Sinwani to Livingstone	33.6	12.3	32.1	1.5
CE:2	Track Repair and Upgrading	75.0	30.0	45.0	30.0
CE:3	Establishment of Quarries	10.2	7.8	6.3	3.9
CE:4	Replacement of the Kafue Railway Bridge	17.8	14.0	3.8	14.0

	CE:5	Track Maintenance Equipment		3.2	2.6	0.6	2.6
CE:6		Realignments in the Kafue Lusaca Section	3.0	2.4	0.6	2.4	
CE:7		Replacement of the Itawa Bridge	1.0	0.8	0.2	0.8	
CE:8		Upgrading of Mulobezi Line to Branch line Standard	5.3	1.5	5.3	0.0	
CE:9		Construction of Mchinji - Chipata Rail Link and Feasibility Study for a Rail Link Connecting ZR or TZR with Malawi at Chipata	8.5	4.5	4.0	4.5	
ST:1		Replacement of Track Circuit Bond Wires	0.7	0.5	0.2	0.5	
ST:2		Repair and Replacement of Line Side and Exchange Equipment	9.4	8.4	1.0	8.4	
ST:3		Radio Control System for the Choma-Masuku Branch Line	0.5	0.4	0.1	0.4	
ST:4		Radio Communications System on the Mulobezi Branch Line	0.5	0.4	0.1	0.4	
ST:5		Police Mobile Radio System	0.6	0.5	0.1	0.5	
ST:6		Train Reporting System	0.6	0.5	0.1	0.5	
ST:7		Expansion of Digital Radio and Multiplex to Kitwe	1.0	0.8	0.2	0.8	
ST:8		Replacement of Message Switching Unit	0.3	0.3	0.0	0.3	
ME:1		Locomotives	52.7	52.0	1.0	51.7	
ME:2		Goods Wagons	6.0	6.0	0.0	6.0	
ME:3		Passenger Coaches	32.1	31.8	0.3	31.8	
ME:4		Air Brakes	11.3	9.7	1.6	9.7	
ME:5		Inspection and Gang Trolleys	1.7	1.6	0.1	1.6	
ME:6		Breakdown Cranes and Derailing Equipment	3.3	3.2	0.1	3.2	
ME:7		Workshop Equipment	10.2	9.6	0.6	9.6	
ME:8		Electric Arc Furnace and Steel Re-rolling Mill	2.0	1.8	0.2	1.8	
GM:1		Technical Assistance Staff	19.3	19.0	0.3	19.0	
GM:2		Training Facilities and Fellowships	3.5	3.4	0.1	3.4	
GM:3		Performance Related Remunaration Scheme	1.2	1.0	0.2	1.0	
MG:4		Study on the Future of Mulobezi Line	0.4	0.3	0.1	0.3	
		Total	314.9	227.1	104.3	210.6	

2.10.2 Equipment for Central Elect. Workshop, NRZ, Zimbabwe



Estimated Costs
Total : USD 0.4 million
Foreign : USD 0.4 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.4 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
National Railways of Zimbabwe

Start : 1990
Duration: 1 year

Objectives : Acquisition of additional equipment for the Central Electrical Workshop, Bulawayo, to increase capacity.

Description: The following equipment is needed for the Central Electrical Workshop of the National Railways of Zimbabwe, Bulawayo, to increase capacity :

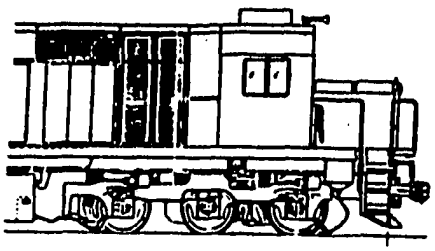
(a)	Heavy Duty Coil Winder	USD 52 000
(b)	Variable Speed Armature Rotating Machine	USD 230 000
(c)	Vacuum Impregnation Equipment	USD 100 000
	Total	USD 382 000

These facilities would also be available to other railway administrations in the region.

Status : Negotiations ongoing with Australia.

September 1990

2.10.4 Acquisition and Rehabilitation of Locomotives, National Railways of Zimbabwe



Estimated Costs
Total : USD 84.8 million
Foreign : USD 69.6 million
Local : USD 15.2 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 15.2 million

Funding Under Negotiation
Total : USD 40.0 million

Financing Gap:
Total : USD 29.6 million

Executing Agency:
National Railways of Zimbabwe

Start : 1990
Duration: 5 years

Objectives : To provide the National Railways of Zimbabwe with adequate motive power to handle the existing and anticipated domestic and regional traffic.

Description : The National Railways of Zimbabwe (NRZ) owns a fleet of 304 diesel locomotives of 13 different classes. However, a great number of the stock are life-experid and some others are becoming unrealiable and requiring maintenance inputs of abnormally high level. Availability is down to below 120 as against a minimum traffic requirement of 158, plus 25% for maintenance purposes that is 198 units.

Taking into account the scrapping programme and standardization of the fleet the following are included in the programme:

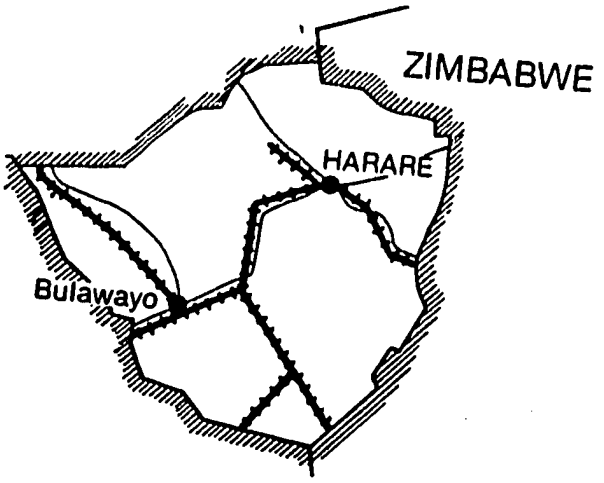
	USD million	
	Foreign	Local
(a) main line diesel electric locomotives:		
(i) 30 units	40.0	0.0
(ii) initial spares	4.0	0.0
(iii) duty and local components	0.0	8.8
(b) Procurement to re-engine		
(i) 67 Caterpillar engines	9.3	
(ii) brake conversion	1.3	0.3
(iii) wiring	0.3	
(iv) spares and tools	0.9	
(c) Refurbishing of unrealiable locomotives:		
(i) 19 sets of equipment for DE 88 class locomotives	13.4	3.0
(ii) brake conversion	0.4	0.1
(iii) Freight, duty	0.0	3.0
Total	69.6	15.2

Status : Project description(s) have been prepared by the National Railways of Zimbabwe.

Financing is being discussed with USAID.

September 1990

2.10.5 Acquisition of Coaches for the National Railways of Zimbabwe



Estimated Costs
Total : USD 131.5 million
Foreign : USD 66.0 million
Local : USD 65.5 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 65.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 66.0 million

Executing Agency:
National Railways of Zimbabwe

Start : 1990
Duration: 8 Years

Objectives : Replacement of life-expired coaches to provide adequate passenger transport services both domestic and regional (Botswana/Zambia/Mozambique).

Description : About half of the NZR Coaching Stock will have life-expired by 1992. Approximately 50 per cent of the fleet is in workshops for maintenance. To augment the coaching stock, NZR has hired coaches from the South African Railways. Therefore it has been decided to draw up an eight year coach replacement programme.

The project includes the following :

			USD million
(i)	Economy Coaches	191 units	84.2
(ii)	Standard Coaches	32 units	16.9
(iii)	Sleeper Coaches	34 units	22.5
(iv)	Baggage Vans	20 units	7.9
		Total	131.5

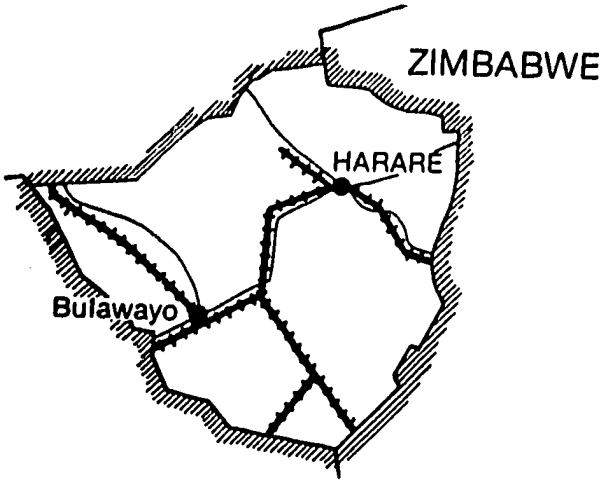
About half of the costs are in local currency.

Status : A project description has been prepared by NZR.

Financing is being sought.

September 1990

2.10.6 Procurement of Rail Trolleys for the National Railways of Zimbabwe



Estimated Costs
Total : USD 1.7 million
Foreign : USD 1.5 million
Local : USD 0.2 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.2 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.5 million

Executing Agency:
National Railways of Zimbabwe

Start : 1990
Duration: One Year

Objectives : Acquisition of rail trolleys for the Civil Engineering and Signal Engineering Departments for the line work and maintenance purposes.

Description : The present rail trolleys are in the main life expired. Only six trolleys out of 24 are runners in Signal Branch and two out of nine in the Civil Branch. Therefore, urgent plans have been made for the acqisition of 30 trolleys as soon as possible. NRZ teams are presently working on the Beira and Limpopo corridors rehabilitation project using our equipment.
The working range of the trolleys is 250 km and maximum speed about 80 km/h.

The costs are estimated as follows :

		USD million	
		Foreign	Local
(i)	30 trolleys	1.4	
(ii)	Spares	0.1	
(iii)	Duty, taxes		0.2
	Total	1.5	0.2

Status : A project description has been prepared on NZR.

Financing is being sought.

September 1990

Ports and Water Transport

3.0.3 Marine Safety Development Programme for SADCC Coastal States

Estimated Costs
Total : USD 0.3 million
Foreign : USD 0.3 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.3 million

Executing Agency:
SATCC

Start : 1990
Duration: 1.5 years

Objectives : To increase Safety of Navigation in SADCC waters through the establishment of a Maritime Safety Development Programme.

Description: Major items of regional importance regarding safety at sea, namely:

1) Maritime search and rescue services;
2) Oil pollution prevention and combat services;
3) Prevention of incidents concerning hazardous cargo;

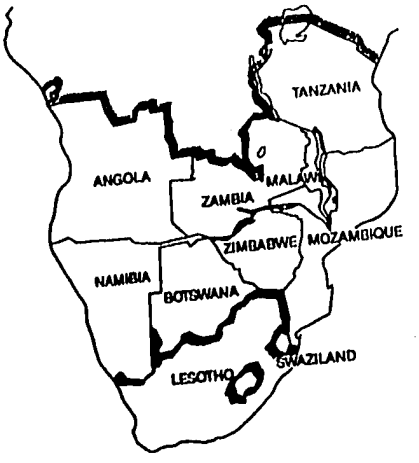
shall be included in a Maritime Safety Development Programme Study.

A report on Mozambican Coast Guard Requirements (January 1987) has been prepared for the Ministry of Transport and Communications under British aid agreements to the Government of Mozambique, giving valuable background information for a study to cover all three SADCC coastal areas.

Status : Terms of Reference for a Marine Safety Development Programme Study for Mozambique was presented to the SATCC Co-ordinating Committee and Meeting of Ministers in Mbabane, May 1987, and approved subject to amendment of the Terms of Reference to cover all SADCC coastal states. Terms of Reference have been amended accordingly.

Implementation can commence once funding is secured.

3.0.4 Package of Port Statistics Programmes



Estimated Costs
Total : USD 1.1 million
Foreign : USD 1.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Nagotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.1 million

Executing Agency:
Port Authorities in Member States
Start : 1990
Duration: 2 Years

Objectives : Introduction of a harmonized system for port statistics and performance indicators as adopted by SADCC in the regional sea ports and the main lake ports.

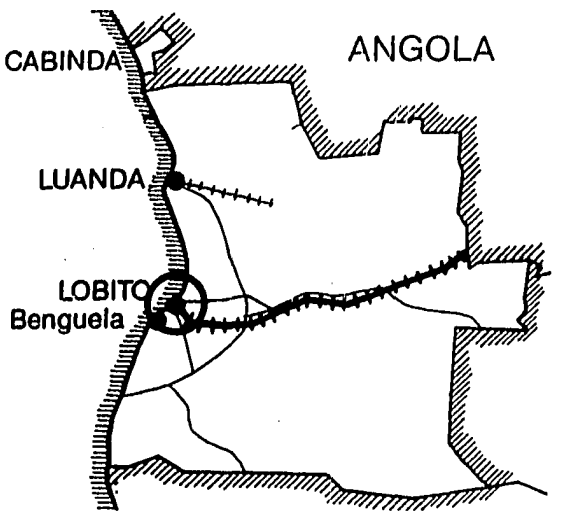
Description : Implementation of a uniform system for port statistics and performance indicators based on a manual prepared by UNCTAD is considered a priority matter to improve port statistics and provide the background for better operational performance in the ports. The project also aims at improving commodity statistics in the port sector based on a uniform commodity classification system for the region. A regional manual on port statistics in English and Portuguese will be prepared by SADCC with the assistance of the UNDP/UNCTAD Transit Transport Project. In addition a common software package will be developed on a regional basis to facilitate initiation of the project.

The project comprises five national projects, three covering the regional sea ports in Angola, Mozambique and Tanzania and two covering the lake ports in Malawi and Zambia. The project includes four main items, namely technical assistance, training, computer hardware and software.

Status : Project descriptions with detailed cost estimates are being prepared. Financing is being sought.

September 1990

3.1.1 Port & Water Tran. Projects in the Ten Year Dev. Plan for the Lobito Port Transport System



Estimated Costs
Total : USD 82.5 million
Foreign : USD 82.5 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 16.1 million

Financing Gap:
Total : USD 66.4 million

Executing Agency:
Lobito Port Authority

Start : 1990
Duration: 10 years

Objectives : Rehabilitation and upgrading of the Lobito Port and related water transport facilities.

Descriprion: The Ten Year Development Plan for the Lobito Port Transport System includes the subprojects listed below.

Included under this headling are in addition to the Lobito Port Projects also Rehabilitation of Lobito Shipyard, Improvement of the Capacity of the Coastal Shipping Company and a Maritime Security Programme.

Plan is subdivided in four phases, namely Preparatory, Emergency, Short Term and Long Term Phase.

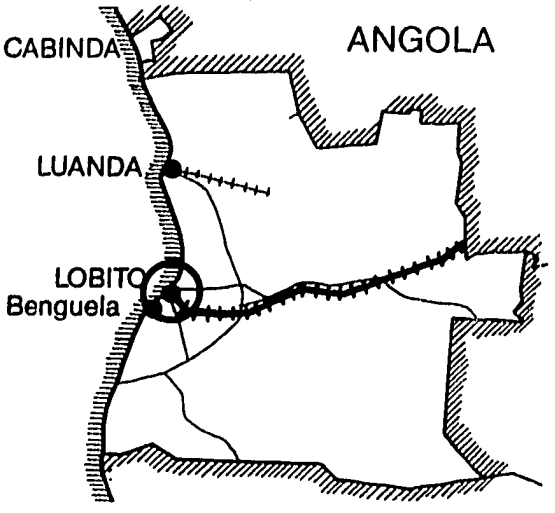
Project		Costs USD, million
P-M-1,	Welfare and Office Facilities	3.5
P-M-2,	Technical Assistance to the Port	3.0
P-M-3,	Port School at Lobito	5.3
P-CE-1,	Inspection and Reinforcement of Quays	15.8
P-CE-2,	Grain Bulk Facilities Improvement	1.0
P-CE-3,	New Coastal Terminal and Service Port Facilities	6.5
P-CE-4,	Rehabilitation of Port Railways	2.5
P-CE-5,	Study on Rehabilitation of Existing Ore Bulk Facilities	0.5
P-CE-6,	New Multipurpose Terminal (study)	1.0
P-CE-7,	New Container Terminal (study)	1.0
P-CE-8,	Coastal Protection Works	1.3
P-ME-1,	Rehabilitation of Power and Lighting System	2.5
P-ME-2,	Purchase of General Port Equipment	2.6
P-ME-3,	Port Maintenance Workshop and Store	3.5
P-ME-4,	Mobile Cranes Rehabilitation and Scrapping Programme	3.0
P-ME-5,	Floating Equipment	5.0
P-ME-6,	Shipyard Rehabilitation	15.0

P-G-1,	Improvement of the Capacity of the Coastal Shipping Company	8.0
P-MG-1,	Maritime Security Programme	1.5
	Total	82.5

Status : A Technical Co-ordination Conference to discuss the Plan was held in January 1988, and expressions of interest pledges of support were received from donors concerning most of the projects in the Preparatory Phase. Follow up contacts with the donors concerned are in progress.

September 1990

3.1.1(P-M-3) Port School at Lobito, Angola



Estimated Costs
Total : USD 5.3 million
Foreign : USD 5.3 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 5.3 million

Executing Agency:

Start : 1990
Duration: 3 years

Objectives : The need for professional training of staff and workers in the port is indisputable. SADCC has carried out a study on Port Staff Training Programmes (P 3.0.2) completed in 1985. The study established the basis for port schools in Tanzania, Mozambique and Angola. Port schools have already been financed in Tanzania (Dar es Salaam) and in Mozambique (Maputo) and implementation is ongoing.

A similar school is to be established in Lobito, and earlier described as SADCC Project No. 3.1.3.

Description: A proposal for a port school project is being worked out by the Angolan authorities.

The project should be divided into two phases, namely:

1) Establishment of a study team to assist the Angolan authorities in concerning both the hardware and the software part of the project.

2) Implementation.

PROJECT COMPONENTS

The project comprises the following components:

- Evaluation of training needs in order to establish the proper profile and duration of courses and training to be given,

- Design of school facilities, including classrooms, dormitories and equipment,

- Establishment of a management assistance team and provision of instructors, and

- Implementation

Status : It is envisaged that the study phase should start within the Emergency Phase and be completed within one year, and that the school premises will be established within three years.

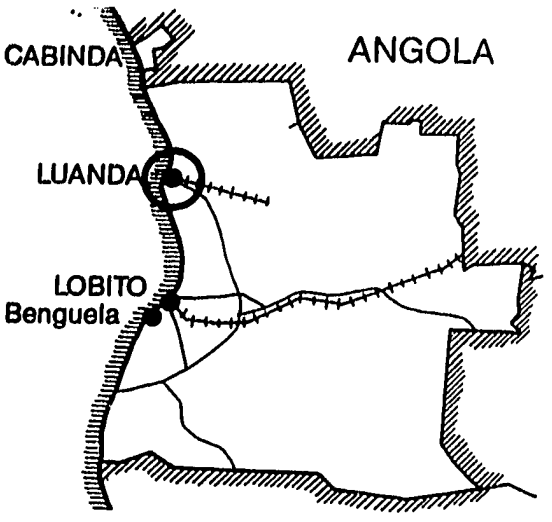
Management assistance and provision of instructors, are foreseen to be necessary for a period of three years after the school facilities have been made ready for use.

The overall of the project is estimated at 5.3 million. It is expected that about half this sum will be needed for development of the software part of the project, including management assistance and provision of instructors. The other half is expected to be used for the design and construction of school facilities.

Financing being sought. UNCTAD has been approached for the software part.

September 1990

3.1.2 Development of the Port of Luanda



Estimated Costs
Total : USD 38.0 million
Foreign : USD 31.9 million
Local : USD 6.1 million

Funding Secured
Foreign : USD 10.0 million
Local : USD 6.1 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 21.9 million

Executing Agency:
Ministry of Technology and Construction
Start :
Duration:

Objectives : Development of the Port of Luanda to meet the future needs of the traffic in dry bulk commodities, pallets, containers and Ro/Ro and the demands for modern handling and to improve the working conditions of the labour force.

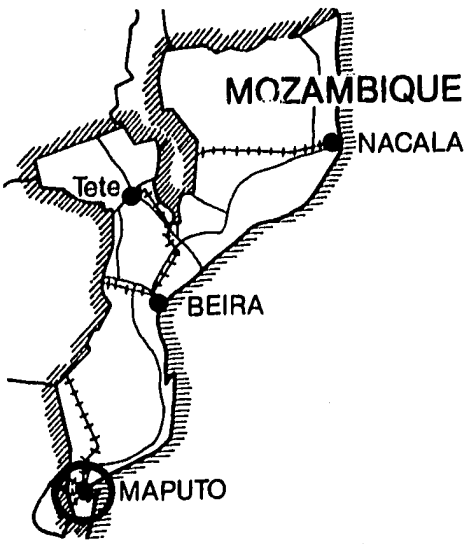
Progress : The project comprises several sub-projects consisting of civil works, procurement of equipment and technical assistance.

(1) Design and construction of a container and Ro/Ro terminal. The project is further elaborated as a sub-project on the following pages. The cost is estimated at 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) Modernization 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.
The 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 the general cargo quay.
Estimated costs are USD 5 million.
(5) Construction of canteen facilities for 2 500 workers at an estimated cost of USD 3.4 million.

For sub-project (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 underway. 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) is on the verge of being completed and for (5) there are proposals but no financing.

Status : Financing or remaining financing is being sought for sub-projects (2), (3) and (5).

3.5.1 Maputo Port, Mozambique



Estimated Costs
Total : USD 121.3 million
Foreign : USD 115.2 million
Local : USD 6.1 million

Funding Secured
Foreign : USD 10.8 million
Local : USD 6.1 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 104.4 million

Executing Agency:
DNPCF, Mozambique

Start : 1984
Duration: 7 years

Objectives : Rehabiliation and upgrading of the port of Maputo to provide proper and adequate capacity for future traffic demand.

Progress : Up to date only three of the projects in the port of Maputo has been described and reported through SATCC, namely:

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

These projects are described in specific project briefs on the following pages.

In order to keep the Co-ordinating Committee, and the SATCC Committee of Ministers updated on the development of all the regional ports on an equal basis, a brief overview of other projects in the port of Maputo is also described in a separate project brief (3.5.4 (04), Maputo Port Other Projects.

These other projects are:

- Steel Terminal
- Sugar Terminal
- Cold Storage Facilities
- General Cargo Berths
- Coastal Terminal
- Crane Rehabilitation Programme
- Rehabilitation and Rendering of Quays
- Rehabilitation of Oil Terminal at Matola
- Navigational Aids, Maputo
- Dredging of Existing Entrance Channel
- Sea Mapping, Entrance Channel

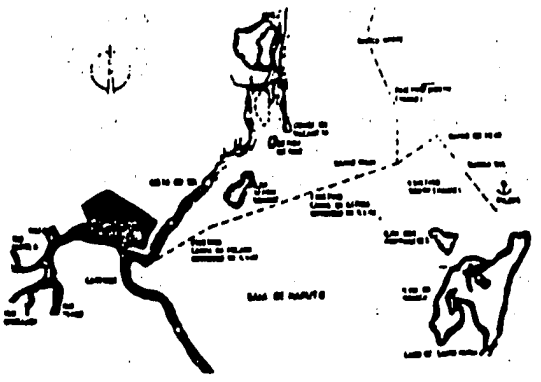
Cost estimates and detailed description of these other projects are not elaborated in this version of the Project Brief.

Status : Funding is still to be sought for the Study on Improvement on the Entrance Channel. Phae 1 of the Coal Handling Facilities in Matola is completed, and initiation of Phase 2 and 3 will first start when traffic increase demands.
The technical and management assistance to the Container Terminal continues, and the British Team has also been engaged in the management of the Sugar Terminal, the Steel Terminal, and in Training in general.
An agreement with Italy about Technical and Operational Assistance for general cargo berths has been initiated, and a crane rehabilitation programme is ongoing with assistance from W.Germany. A British pre-feasibility team has looked at the need for rehabilitation and tendering of quays, and rehabilitation of the Oil

Terminal at Matola.
Construction of the new Coastal Terminal is in good progress with Norwegian aid.
And a programme for dredging of the entrance channel is ongoing.
Additional funding is sought.

September 1990

3.5.1(01) Feasibility Study on Improvement of the Entrance Channel to Maputo Port



Estimated Costs
Total : USD 1.7 million
Foreign : USD 1.4 million
Local : USD 0.3 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.3 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.4 million

Executing Agency:
DNPCF, Mozambique

Start : 1990
Duration: 2 years

Objectives : 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.

Description: 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, for channel depth and width;
- alternative time schedules for the implementation;

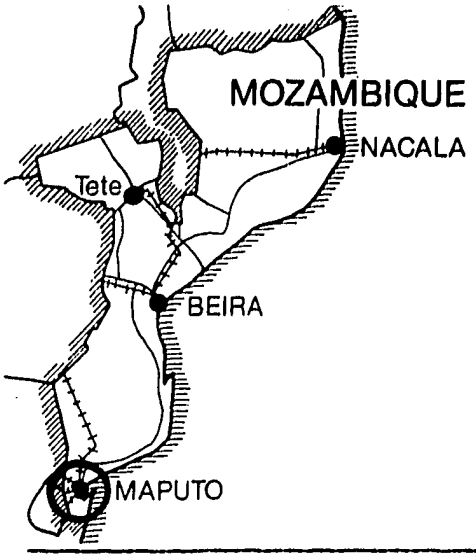
The studies are to be carried out to a level that will provide a sound basis for the final design and the preparation of contract documents.

In 1981 the project description and Terms of Reference for the comprehensive study were approved. The Terms of Reference were revised in April 1984.

Status : Hydrographic survey works have been carried out by Mozambique (SNHB) during 1986 under a bilateral agreement with Norway. This work is continuing. The rehabilitation for nav. aids in the channel is in progress (ref. P. 3.5.4 and 3.5.4 (1). A dredging scheme to estlish - 9.4 m CD as a minimum depth in the existing channel has been initiated by the port. Dreding started in July 1987 and is still ongoing. This will reestablish very good access to the port of Maputo.

Financing for the more comprehensive feasibility study is being sought.

3.5.1(02) Matola Coal Terminal, Mozambique



Estimated Costs
Total : USD 90.6 million
Foreign : USD 89.0 million
Local : USD 1.6 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 1.6 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 89.0 million

Executing Agency:
DNPCF, Mozambique

Start : 1985
Duration: 7 years

Objectives : Construction of a Coal Handling Terminal at Matola for coal export.

Progress : The project is divided into three phases:

PHASE 1: Convertion of the present ore terminal to coal handling with a capacity of 1,5 million tons per year.
Estimated cost: USD 1.6 million

PHASE 2: Increase capacity to 3,5 million tons paer year.
Estimated cost: USD 9.0 million

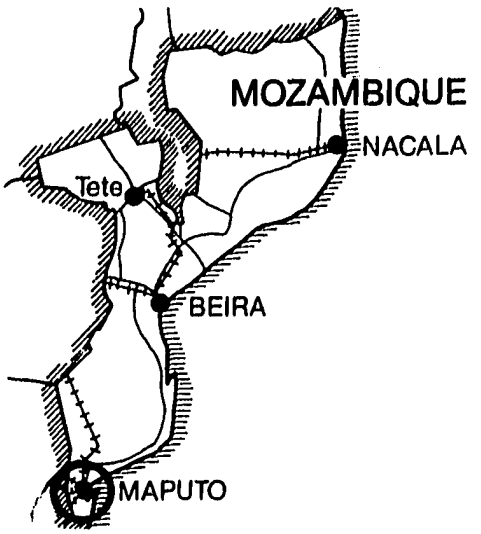
PHASE 3: Increase capacity to 7 million tons per year.
Redesign and construction costs are estimated at USD 89 million.

Status : Rehabilitation of mechanical and electrical infrastructure has been ongoing since 1985, and such works were concluded in 1987, bringing the terminal up to a capacity of 1,5 million tons per year.
Loading capacity is now 7.000 tons per vessel per day, but throughput up to 12.000 tons per vessel per day has been achieved.
Rehabilitation works concerning dust suppression equipment, fire lighting equipment, purchase of spare parts and regular maintenance have been ongoing since June 1987, along with the reclaiming of stacker No.2.
These works were scheduled to be completed by January 1988.

PHASE 2 and 3 will not be initiated before traffic figures allow.
Funding is being sought.

September 1990

3.5.1(03) Container Terminal Equipment and Management Assistance, Port of Maputo



Estimated Costs
Total : USD 29.0 million
Foreign : USD 24.8 million
Local : USD 4.2 million

Funding Secured
Foreign : USD 10.8 million
Local : USD 4.2 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 14.0 million

Executing Agency:
DNPCF, Mozambique

Start : 1985
Duration: 7 years

Objectives : To provide adequate container handling facilities for the Port of Maputo.

Progress : Maputo Container Terminal project comprises the purchases of two container cranes for the service of cellular container vessels, layout of the 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 29 million. Additional need for 2 mobile 40 feet container handling equipment.

The first period for Operational and Management Assistance Agreement with ODA expited September 1987, and a second period lasting up to September 1989 was initiated.

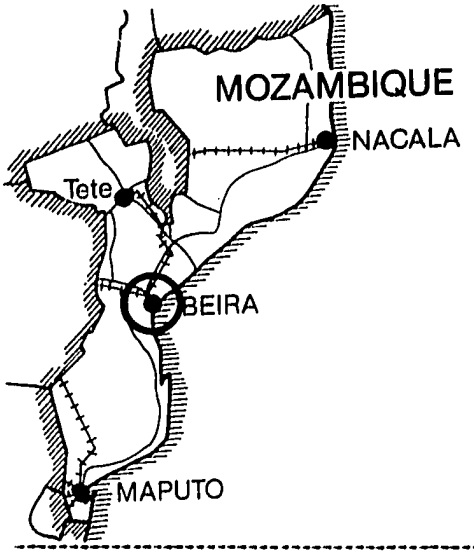
The number of persons supplied under the new agreement has been reduced compared to the former agreement, which contained :

- 1 Terminal Manager
- 1 Operations Manager
- 1 Terminal Engineer
- 1 Administration Manager
- 1 Training Manager
- 1 Operations Superintendent

Progress reports from the project are produced on a quarterly basis. Training makes up an essential part of the assistance programme.

Status : Two container cranes have been erected, financed by Italy, as have been other shore side 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 8 technicians are assisting the container terminal management. Assessed cost is USD 1.8 million in operation, maintenance and training. The first period of the of the technical assistance agreement is up to September 1987. Agreement prolonged for a 2 year period, up to September 1989. Additional funds are being sought.

3.5.2 Port Projects in the Beira Port Transport Development Plan



Estimated Costs
Total : USD 418.4 million
Foreign : USD 398.7 million
Local : USD 19.7 million

Funding Secured
Foreign : USD153.6million
Local : USD 19.7million

Funding Under Negotiation
Total : USD 60.6 million

Financing Gap:
Total : USD 184.5 million

Executing Agency:
Beira Corridor Authority

Start : 1987
Duration: 10 years

Objectives : Increase of the capacity of the Port of Beira as provided for in the Beira Port Transport System 10-Year Development Plan.

Progress : The Beira Port Transport System Development Plan includes 20 projects. The implementation of the Plan is ongoing.

Status : The status of the costs and financing is presented in the following table, the implementation of projects being started once financing is secured.

STATUS OF COSTS AND FINANCING (USD, million)

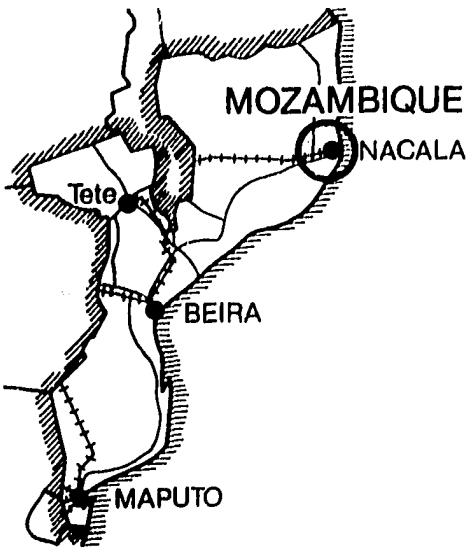
Number	Name of Sub-project	Estimated Cost		Financing
		Total	Foreign	Secured or negotiated
(P-A-01)	Channel Dredging to CD-8 Metres Beira Port	15.6	15.6	15.6 (Neth'lds)
(P-A-02)	*Navigational Aids, Beira Port	1.7	1.7	0.9 (Sweden) (0.8) (Sweden)
(P-A-03)	Maintenance Dredging	1.4	1.4	0.0 (1.4) EEC

	(P-CE-01)	A)Multipurpose & Container Handling Terminal (Berths 2-5)	62.2	62.0	57.6 (EEC) 2.7(Neth'lds)
0.2(Mozm)					(1.7)Neth'lds
	(P-CE-01)	B)Maintenance Building	1.9	1.9	1.9 (Finland)
	(P-CE-01)	C)Transit Shed	3.9	3.9	3.9(Finland)
	(P-CE-01)	D)Administration Building and Gate House	1.2	1.2	0.0 1.2(Finland)
	(P-CE-02)	New Oil Terminal, Beira Port	22.8	22.8	10.8(Norway) 12.0(Norway)
	(P-CE-03)	Port Railways, Beira Port	21.0	21.0	12.6(Italy)
	(P-CE-04)	Cereal Terminal, Beira Port	9.0	8.1	0.0
	(P-CE-05)	Cold Storage Facilities, Beira Port	8.1	8.1	0.0
	(P-CE-06)	Tobacco Terminal, Beira Port	3.0	2.7	0.0
	(P-CE-07)	Cotton Terminal, Beira Port	3.0	2.7	0.0
	(P-CE-08)	*Grain Silos (combined with	0.0	0.0	0.0
	(P-CE-09)	Coastal Protection Scheme, Beira Port	10.0	9.0	1.0Mozambique
	(P-CE-10)	Service Port Facilities, Beira Port	5.2	5.2	0.0 (5.2)(Denmark)
	(P-CE-11)	Port Roads, Beira Port	1.0	0.0	1.0Mozambique
	(P-CE-12)	High Capacity Coal Terminal, Port Beira	160.0	144.0	16.0Mozambique
	(P-CE-13)	Port Traffic Control Centre.	8.8	8.8	0.0 (8.8)(Denmark)
	(P-CE-14)	Power Supply to Beira Port	9.5	9.5	0.0 (9.5)(Sweden)

	(P-CE-15)	Fire Fighting System	0.7	0.7	0.7(Neth'lds)
	(P-ME-01)	*Equipment for Multipurpose and Container Handling Terminal, Beira Port	33.4	33.4	27.9
	(P-ME-01)	B) New Equipment for Temporary Container Terminal	12.9	12.9	6.9(Finland) 6.0(Sweden)
	(P-ME-01)	C) New Equipment for New Multipurpose and Container Terminal	15.0	15.0	14.6(ADB) 0.4(Finland)
	(P-ME-01)	D)Additional Equipment	5.5	5.5	0.0
(2.8)(Finland)					(2.8)(Sweden)
	(P-ME-02)	Tugs, Pilot Boats and Line Boats, Beira Port	11.2	11.2	11.2(Denmark)
	(P-ME-03)	Procurement of General Cargo Handling Equipment	2.0	2.0	2.0(Belgium)
	(P-ST-01)	Telecommunications Network, Port and Railways	2.0	2.0	0.0 2.0(Sweden)
	(P-TA-01)	Technical Assistance to the Port of Beira	5.6	5.6	5.6(Neth'lds)
	(P-TA-02)	Technical assistance to Beira port after 1990	13.3	13.3	0.0 (6,3)(Neth'lds)
	(3.5)(Finland)				(3.5)(Sweden)
	(P-TA-03)	Technical Assistance to Port Training	2.6	2.6	2.6(IDA/IBRD)
		TOTAL	418.4	398.7	233.9

September 1990

3.5.3 Rehabilitation of the Port of Nacala



Estimated Costs
Total : USD 35.0 million
Foreign : USD 30.5 million
Local : USD 4.5 million

Funding Secured
Foreign : USD 24.0 million
Local : USD 4.5 million

Funding Under Negotiation
Total : USD 6.5 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
DNPCF, Mozambique

Start : 1984
Duration: 10 years

Objectives : Design and construction of container facilities, purchase of container handling equipment and technical assistance to the management, general improvement of the port.

Progress : The project is composed of the following parts:

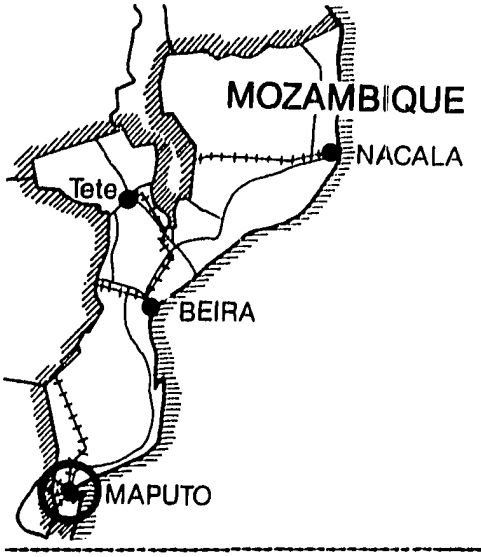
		Costs (USD, Million)	
		Foreign	Local
Phases 1 and 2			
Improvement of old facilities, development of the container terminal, including equipment, maintenance facilities, management and training.		24.0	4.0
Phase 3			
(i)	Additional civil works	3.3	0.5
(ii)	Technical assistance and training, including studies on marketing and tariffs and on new oil handling installation	2.0	0.0
(iii)	Equipment for the Port Authority	1.0	0.0
(iv)	Contingencies	0.2	0.0
	Total	30.5	4.5

Phase 1 has been completed and Phase 2 is about to be completed.

Status : FINNIDA and Mozambique have financed Phases 1 and 2. Funds for Phase 3 are being negotiated with FINNIDA.

September 1990

3.5.4(1) Navigational Aids, Mozambique



Estimated Costs
Total : USD 15.4 million
Foreign : USD 14.7 million
Local : USD 0.7 million

Funding Secured
Foreign : USD 7.9 million
Local : USD 0.7 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 6.8 million

Executing Agency:
DNCRI/EMM, Mozambique

Start : 1987
Duration: 8 years

Objectives : 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.

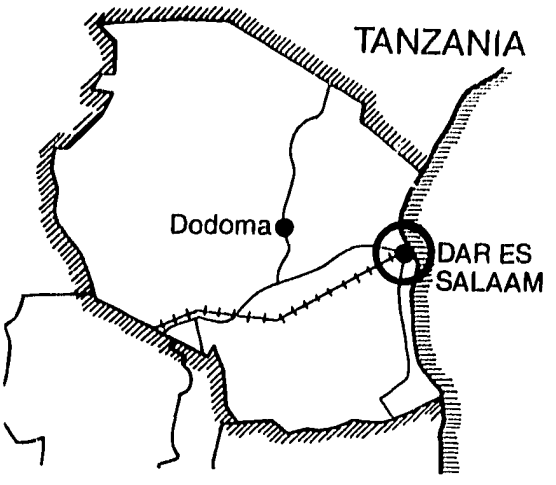
Progress : The Project is divided into three phases i.e. rehabilitation of navigational aids of:

1) the regional port areas of Maputo, Beira and Nacala;
2) the coastal areas; and
3) small ports and inland waters.

Supportive projects such as repair and maintenance workshops, training of personnel and administrative and technical assistance are included.
Total current prices for phase 1, Stage I, SEK 55 million.
Phase 1 is estimated to require two years, and phase 2 three years, for implementation.
SIDA has agreed to finance Phase 1. The consultant for Phase 1 has been appointed and project organization was established in Maputo in February 1987, with backstop staffing in Sweden. The SIDA financed short term consultancy study of the future organization of the navaid sector in Mozambique has been completed and a Memorandum of Understanding on the future organization structure was signed between SIDA and the executing agency in June 1986.
The detailed design for rehabilitation works completed. A field mission has investigated the light houses onshore and tested the central workshops grounds. Documents for tendering completed March 1988. A Steering Committee has been established, meeting at regular intervals. Progress reports are prepared on a regular basis. Training programme established.

Status : A cost increase has been experienced after completion of the detailed design, compared to earlier estimated costs.
A crash programme for repair of existing buoys in the approach channel to Maputo has been completed April 1988.
Civil works in progress, major procurements completed. Procurement of buoys for Beira Port delayed.

3.8.2 Development of the Port of Dar es Salaam, Tanzania



Estimated Costs
Total : USD 368.7 million
Foreign : USD 320.8 million
Local : USD 47.9 million

Funding Secured
Foreign : USD207.8million
Local : USD 47.5million

Funding Under Negotiation
Total : USD 39.2 million

Financing Gap:
Total : USD 74.2 million

Executing Agency:
Tanzania Harbours Authority

Start : 1985
Duration: 7 years

Objectives : Rehabilitation and upgrading of the port of Dar es Salaam to provide adequate capacity for future traffic demand.

Progress : The Development Plan for the Port of Dar es Salaam contains several sub projects. Of these 14 are included in the SATCC catalogue of projects. These 14 main sub projects contain several project components. A majority of the projects are included in a World bank co-ordinated improvement programme which has been appraised by the Bank in January 1988.

Status : Meetings with financiers are being held once a year to monitor the financial status and progress of the World Bank coordinated improvement programme projects. Quarterly progress reports are now being submitted from THA to SATCC. The status of costs and financing is presented in the following table:

STATUS OF COSTS AND FINANCING (USD Million)

		Estimated Cost		Financing
Code	Project	Total	Foreign	Secured / Negotiated
(01.1)	Kurasini Oil Terminal Rehabilitation (Phase 2), Port of Dar es Salaam	8.2	6.6	6.6 (Norway) 1.6 Tanzania
(01.2)	Kurasini Oil Terminal	12.8	10.8	2.0 (Tanzania) (10.7) (Norway)
(02)	Improvement of Harbour Entrance Channel, Port of Dar es Salaam.	45.4	41.0	4.4 Tanzania

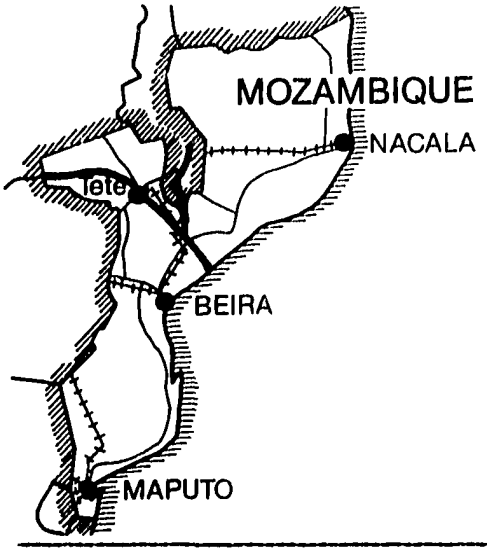
(03.1)	Construction of Container Terminal,Ubungo ICD and Kurasini Warehouse, Phase I.	40.5	33.5	25.5(IDA/IBRD) 7.0 Tanzania 8.0 (Sweden)
(03.2)	Expansion of Container Terminal, Ubungo ICD and Kurasini Warehouse,Phase II 6.7	26.0	19.3	18.9 (IDA/IBRD) 0.4 (Finland) 6.7(Tanzania)
(03.3)	Repairs to piles and fenders, Berths 9,10 and 11 Port of Dar es Salaam.	5.7	4.3	1.4(Tanzania) 4.3 (Funding sought)
(04)	Construction of Grain Facility Port of Dar es Salaam.	27.1	23.1	23.1(Neth'lds) 4.0Tanzania
(05)	* Ubungo ICD, Dar es Salaam.	0.0	0.0	0.0
(06.1)	Belgian Wharf Reconstruction, Port of Dar es Salaam.	2.1	1.6	0.5 Tanzania
(06.2)	Modernization of Lighter Wharf, phase 2; Paving and Services Port of Dar es Salaam	4.6	3.5	1.1 Tanzania 3.5 (Sought)
(06.3)	Modernization of Linghter Wharfn Phase 2; Transit Shed, Port of Dar es Salaam	0.3	0.0	0.3(Tanzania)
(07)	Construction of Tug Berth, Port of Dar es Salaam.	5.2	5.2	0.0
(08.1)	Purchase of Container Handling Equipment, Phase I, Port of Dar es Salaam.	39.1	39.1	18.9(Finland) 16.7(Denmark) 3.5(Austria)
(08.11)	Purchase of Container Handling Equipment , Phase II, Port of Dar es Salaam.	17.0	17.0	17.0 (Funding sought)
(08.2)	Purchase of Cooper Handling Equipment, Port of Dar es Salaam.	2.5	2.5	2.5(Sweden)

(08.3	Purchase of General Cargo Handling Equipment, Phase I, Port of Dar es Salaam.	19.3	15.7	8.4 (Italy) 2.5 (UK) 0.9(Sweden) 1.3(Canada) 2.6(IDA/IBRD) 3.6(Tanzania)
(08.31)	Purchase of General Cargo Handling Equipment, Phase II, Port of Dar es Salaam.	5.0	5.0	5.0(IDA/IBRD)
(08.32)	Purchase of office Equipment, THA Headquarters and Port of Dar es Salaam.	1.2	1.2	1.2(IDA/IBRD)
(09)	Purchase of Floating Craft, Port of Dar es Salaam	17.5	17.5	0.0
(10)	Technical Assistance to THA and Improvement of Bandari College, Dar es Salaam	4.5	4.5	3.7(Norway) 0.8(IDA/IBRD)
(11)	Rehabilitation of Berths 1-8, Port of Dar es Salaam.	45.6	33.0	14.4(Sweden) 7.0(Norway) 12.6(Tanzania) 11.6 (Funding sought)
(12)	Study on New Oil Terminal, Port of Dar es Salaam.	0.2	0.2	0.0
(13)	* Study on Increasing Port Capacity for SADCC Transit Goods, Port of Dar es Salaam.	0.0	0.0	0.0(Canada)
(14)	Study on Container Handling in Tanzania and Neighbouring Countries, Dar es Salaam.	0.5	0.5	0.5(Norway)
(15)	Improvment of Central Workshop, Port of Dar es Salaam.	3.8	3.4	2.4(IDA/IBRD) 0.2(Finland) 0.4(Tanzania) 0.8 (Funding sought)
(16)	Port Development Study, Port of Dar es Salaam	1.2	1.0	1.0(IDA/IBRD) 0.2(Tanzania)
(17)	Project Coordination Unit	3.8	3.8	1.1 (Finland) 0.4 (Neth'lds) 1.6 (Sweden) 0.4 0.1 (Tanzania)
(18)	Management Technical Assistance THA Headquarters and Port of Dar es Salaam	29.6	27.5	14.6(Finland) 8.4(IDA/IBRD) 0.4(Neth'lds)

			3.7(Sweden) 0.4(Norway) 2.1(Tanzania)
Total	368.7	320.8	294.5

September 1990

3.9.1 Study of the Navigability of the Zambezi and Shire Rivers



Estimated Costs
Total : USD 0.3 million
Foreign : USD 0.3 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.3 million

Executing Agency:
SADCC

Start : 1990
Duration: 1 year

Objectives : Prefeasibility study to establish the engineering feasibility of navigation on Lake Cahora Bassa, the Zambezi and the Shire Rivers.

Description: 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 cargo 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 appraisal of the structural works necessary necessary to make the river system navigable, and the type of ship possible to use for navigation on the system, or part of it. The study should be carried out at a prefeasibility level of detail;
- A programme from more detailed investigations, should the appraisals indicate that there is a case for this.

Status : A Steering Committee for the project has been established, and has met twice. Subprojects under the overall study are being identified.

Funding is being sought.

Civil Aviation

4.0.01(02) Expansion of DCA Flight Calibration Unit, Tanzania

Estimated Costs
Total : USD 6.3 million
Foreign : USD 6.3 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 6.3 million

Executing Agency:
Ministry of Communications and Works, Tanzania
Start : 1990
Duration: 2 Years

Objectives : The objectives of the project are to:

a) develop the Tanzania DCA Flight Calibration Unit so that it can undertake all flight calibration requirements within the SADCC region;
b) provide training, through fellowships, to flight calibration electronics engineers of the Unit;
c) provide on-the-job training at the Tanzania Flight Calibration Unit to electronics engineers from the SADCC States in the techniques of flight and ground inspection (as appropriate) of navigational aids; and
d) to provide on-the-job training to flight crews from the participating states and to enhance their experience through their involvement in flying duties during calibration work in their home states.

Description : The following inputs are needed:

a) The services of two high level consultants, one in Flight Calibration Engineering for 36 m/m, and the other in Navaids Maintenance for 30 m/m.

b) Fellowships to provide advance training to raise the level of competence of those nationals nominated to serve with the Unit. A total of 27 individual fellowships (108 m/m) will be needed.

c) EQUIPMENT
It will be necessary to procure a new primary calibrations aircraft, with larger and of higher performance than the existing one. It will also be necessary to expand the existing airborne calibration equipment to provide redundancy in the event of equipment failure when the aircraft is operating away from base. The existing ground electronics laboratory will similarly have to be developed to provide proper maintenance support for the aircraft installation.

Status : Funding is being sought.

4.0.03 Study on Coordinated Use of Aircraft Maintenance Facilities

Estimated Costs
Total : USD 0.3 million
Foreign : USD 0.3 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.3 million

Executing Agency:
SATCC

Start : 1990
Duration: 8 Months

Objectives: The objectives of the project are to rationalize the use of aircraft maintenance facilities in the SADCC region.

Description: The study shall:

- recommend optimum utilization of resources for maintenance, overhaul and repair of airframes, engines and components for the national airlines in the SADCC States, bearing in mind existing and planned facilities and fleet development over a 20 year period;
- assess present facilities and determine the manpower requirements and the training programmes and facilities required to meet current and future needs, and chart the present customs procedures and traffic;
- indicate the magnitude of investment by location and to estimate the operating costs;
- recommend a system aiming at a distribution of gains and work load among the participating members; and
- prepare a cost/benefit analysis showing the economic improvements which the recommended system will achieve compared to current maintenance and over haul practices.

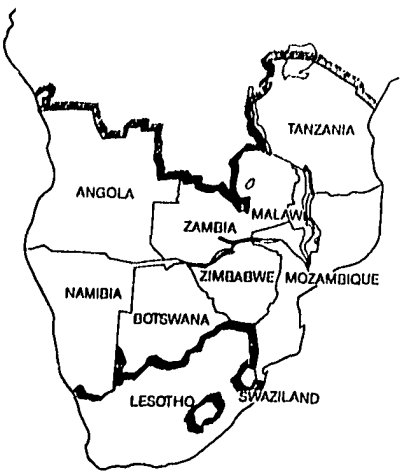
The study shall be performed to supplement the "Feasibility Study for the Establishment of a Co-ordinated Network of Aircraft Maintenance and Overhaul Centres in Africa, carried out in 1984 on commission by the African Development Bank, in order to give required detailed additional information needed for the objectives stated above.

The study should be based on the ADB financed continental study, including the amendment for turbo-prop aircraft, and experience gained in bilateral co-opera tion between SATCC airlines.

Status : ADB has agreed to finance a Pre Feasibility Study for this project

Funding is being soug.

4.0.05 Study on General Aviation Activities



Estimated Costs
Total : USD 0.4 million
Foreign : USD 0.4 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Nagotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.4 million

Executing Agency:
SADCC

Start : 1990
Duration: 9 Months

Objectives : To carry out a comprehensive study of the policy, regulations and operations of general aviation in the SADCC region, taking into account its role in development, including charter, aerial work and aerial medical services.

Description: There are at present approximately 800 General Aviation aircraft and well over 1000 aerodromes and landing strips in the nine SADCC States. The most commonly used regular passenger transport aircraft in regional operation, the Boeing 737, can land on only 36 of the landing strips.

From the discussions at the meeting of Directors of Civil Aviation and Airlines Executives in Maputo in July 1982, it was evident that the group was looking to a study for guidance on a considerable range of matters, including:

- the establishment and implementation of mutually acceptable policies and regulations which 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 regulation of procedures and frequency of movement for General Aviation aircraft operating between adjoining states;
- the practicability and methods of achieving greater communality of aircraft types and development of approved regional organizations for aircraft, engine and acessories overhaul;
- the development of an application of common standards of airworthiness in certification, maintenance and servicing of aircraft together with development of standards for licensed maintenance personnel;
- the inclusion of General Aviation services in individual state planning as part of the National Transport Development Plan;
- the practicability of development of aerial work activities in such fields as environmental survey, agricultural spraying, pest control, and topo dressing;
- the practicability of establishing an aerial medical coverage which would be a great benefit to the communities of their States.

Status : Financing is being sought.

4.0.07 Updating the Aeronautical Information Services

Estimated Costs
Total : USD 1.7 million
Foreign : USD 1.7 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.7 million

Executing Agency:
SADCC

Start : 1990
Duration: 3 Years

Objectives : To provide technical assistance for:

(i) updating and completing the AIPs in the nine SADCC States with a view to co-ordinating and harmonizing the product;

(ii) updating instrument approach procedures and designing relevant charts at selected airports (15-20 international airports).

Description: The technical assistance for the AIPs updating and production shall be provided by three experts, who should assist the AIPs organization units in the SADCC States in the daily work related to AIPs production as specified in Annex 11 to the Convention on International Civil Aviation.

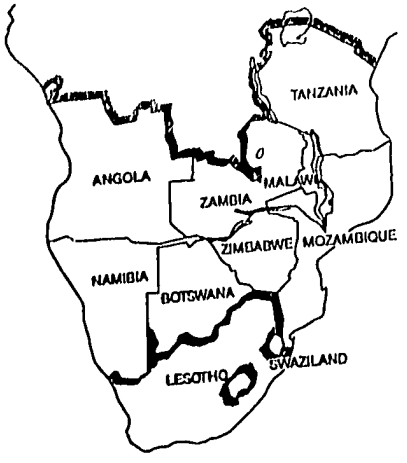
Technical assistance for the preparation of Aeronautical Charts to be given by one expert assisting the countries in a priority sequence established by the DCAs in the SADCC States.

The technical assistance shall include procurement of office equipment. On the job training (OJT) and basic training shall also be included.

Status : Swaziland has prepared an updated issue of AIP supported by ICAO. Funding is being sought.

September 1990

4.0.8(01) Rehabilitation of Aeronautical Telecoms in the Region



Estimated Costs
Total : USD 30.0 million
Foreign : USD 30.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 30.0 million

Executing Agency:

Start : 1990
Duration: 5 years

Objectives : Establishment of a specialized aeronautical and telecommunication network able to meet international civil aviation requirements designed for flight safety purposes and to implement the ICAO Telecommunication Air Navigation Plan for Africa in the SATCC region.

Description: Installation of navigation and landing aids required for phases of air navigation according to international flight safety standards and recommended practices (ICAO SARPS) and the Air Navigation Plan for Africa as above.

Training of technical personnel able to install and maintain the above facilities.

Activities spread over 3 years comprise, among other things :

a) finalization of the project work plan according to updated requirements and costs,
b) completion of necessary civil aviation works,
c) launching of the training programme,
d) installation of equipment and continuation of training,
e) tests on equipment operations,
f) establishment of maintenance procedures (including flight checking of facilities).

Since the origin this project has been handled as a joint regional effort. It has, however, been proposed in the Telecommunications Ten-Year Development Plan that the project, from a finance point of view, that it should be divided into a number of national projects still co-ordinated as a regional project. The following sub-projects are included in project 4.0.8(1):

Angola	Malawi	Swaziland	Mozambique	Tanzania	Zambia	Zimbabwe
1-CA-1	H-CA-1	6-CA-1	5-CA-1	7-CA-3	8-CA-1	9-CA-1
1-CA-2			5-CA-2	7-CA-4	8-CA-2	
1-CA-3			5-CA-3	7-CA-5	8-CA-3	
				7-CA-6		

Total costs for these projects are estimated at USD 27.5 million.

Status : Each civil aviation authority in the SADCC States is expected to find a donor for its national part of the project.

September 1990

4.0.10 Study on the Joint Use of Wide Body Aircraft and Sub-Regional Cooperation

Estimated Costs
Total : USD 1.0 million
Foreign : USD 1.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.0 million

Executing Agency:
SADCC

Start : 1990
Duration: 9 Months

Objectives : The project aims at:

(i) A thorough and comprehensive feasibility study within SADCC incorporating a practical implementation plan for the operation of intercontinental wide body aircraft under a joint-use programme.

(ii) Comprehensive studies of all aspects of sub-regional airline cooperation.

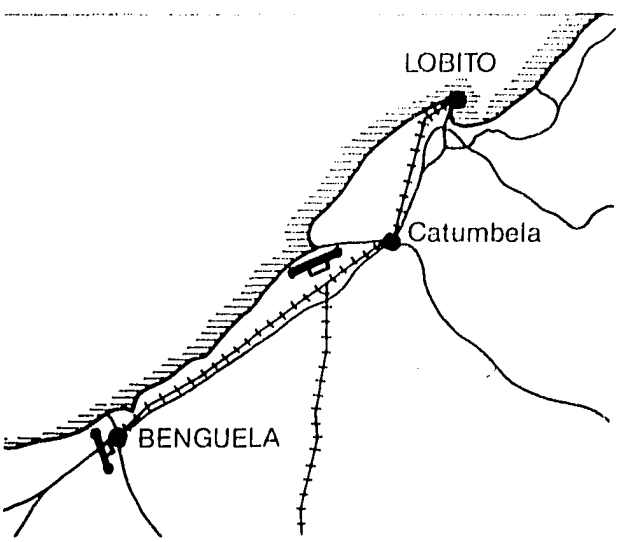
Description: The studies shall cover following main elements taking various alternatives into consideration such as wet lease of aircraft, joint venture or pool agreement with suitable airline(s).

(a) Traffic and Route Analysis.
(b) Aircraft and Crew Scheduling.
(c) Equipment Selection.
(e) Negotiation of Air Transport Agreements.
(f) Airline Traffic and Sales Management and Planning.
(g) Economic Analysis.
(h) Analysis of the legal, administrative and technical ramifications of joint-user activities.
(i) Rationalization and common utilization of the existing wide-body and other aircraft within SADCC, for intercontinental or sub-regional routes choice or acquisition of aircraft suitable for joint-use.
(j) Financial and leasing arrangements, including revenue and cost - sharing formulae.
(k) All commercial aspects embracing:
  (i) Revenue accounting
  (ii) Reservations
  (iii) Sales and Traffic Documents
  (iv) Marketing and Customer Service
  (v) Financial Statements and Statistics.
(l) Equity share capital and initial pre-operative financial plan.
(m) Administrative, manpower and structural framework for the day to day activities of the joint-use agency.

Status : ADB has agreed to finance a Pre Feasibility study of this project. Funding sought.

September 1990

4.1.1 Civil Aviation Projects in the Ten Year Development Plan for the Lobito Port Transp.System



Estimated Costs
Total : USD 12.1 million
Foreign : USD 12.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 12.1 million

Executing Agency:
Directorate of Civil Aviation

Start : 1990
Duration:

Objectives : Provision of adequate airport capacity related to the Lobito Port transport System.

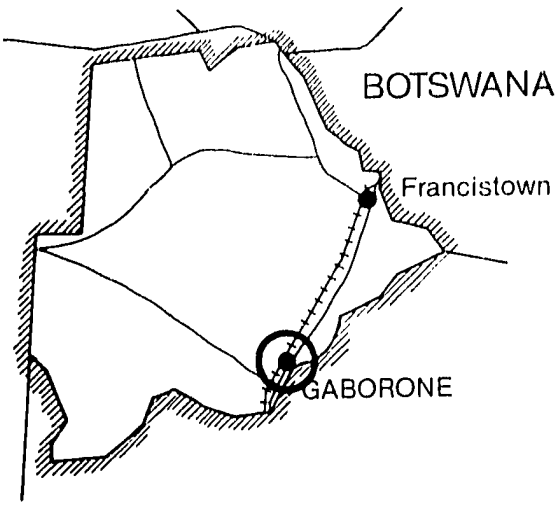
Description: The ten Year Development Plan for the Lobito Port Transport System includes the following sub-projects for civil aviation:

Project		Costs USD, million
CA-CE-1	Upgrading of Benguela Airport	12.0
CA-CE-2	Study on New Airport between Lobito and Benguela	0.1
	TOTAL	12.1

Status : A Technical Co-ordination Conference to discuss the Plan was held in January 1989. Interest was expressed by financiers in the projects in the Preparatory Phase of the 10-Year Plan, including those concerning civil aviation.

Funding is being sought.

4.2.2 Contingency Improvement to Gaborone Airport



Estimated Costs
Total : USD 8.0 million
Foreign : USD 5.0 million
Local : USD 3.0 million

Funding Secured
Foreign : USD 3.8 million
Local : USD 3.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.2 million

Executing Agency:
Department of Civil Aviation

Start : 1988
Duration: 3 years

Objectives : Contingency improvements to Sir Seretse Khama (SSKA) Airport, Gaborone International Airport, to cope with long-haul international operations.

Description: The project consists of the following parts :

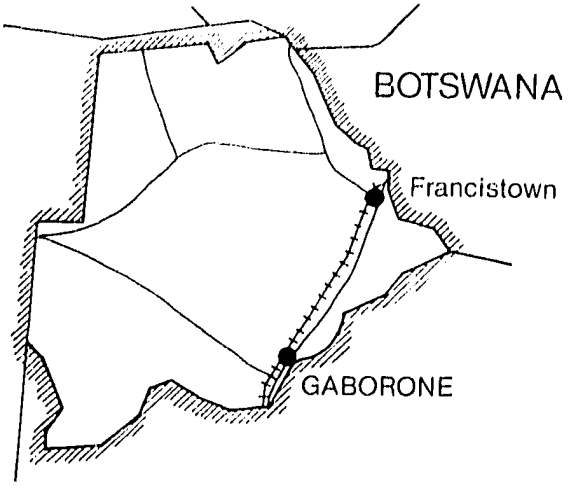
(i)	apron extension	2.4	(100% foreign)
(ii)	handling equipment / facilities	1.5	(95% foreign)
(iii)	runway extension	3.3	(25% foreign)
(iv)	cold storage facility	0.8	(50% foreign)
	Total	8.0	

At present the SSKA airport handles regional flights to and from Zambia, Zimbabwe, Tanzania, Kenya and Swaziland. The socio-economic and political context have recently altered drastically resulting in SSKA having to cope with the contingency usage not envisaged when the airport was built (completed in 1984). Long-haul operations with wide-bodied aircraft has been initiated in April 1987.

On the above grounds it has become necessary to extend and strengthen the apron(s) to accommodate wide-bodied aircraft, to provide cargo and passenger handling equipment for such traffic, to extend the runway by 1000 m and to provide a cold storage facility for the export of meat products, fruits, vegetables, etc.

Status : Additional funding is being sought.

4.2.3 Flight Information Region for Botswana



Estimated Costs
Total : USD 9.4 million
Foreign : USD 8.5 million
Local : USD 0.9 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.9 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap
Total : USD 8.5 million

Executing Agency:
Department of Civil Aviation

Start : 1990
Duration: 1 year

Objectives : To establish an independently functional Flight Information Region (FIR) for Botswana.

Description: The aim of the project is to provide ATS Services (Flight Information and Alerting Services) to all flights in the air space over the territorial limits of Botswana for safety of air-navigation by the civil aviation administration in Botswana. To that effect it is planned to establish a separate Flight Information Region (FIR) for Botswana and the appropriate ATS units located at Sir Seretse Khama airport, Gaborone. The accommodation for the units shall be found in the existing Technical/Operational Block after some modifications and alteration. New and additional radio/radar navigational aids and telecommunications equipment will be required for this purpose.

According to the ICAO AFI Regional Air-Navigation Plan (1976) presently still valid, the air space over the Republic of Botswana comes under the jurisdiction of the Flight Information Region (FIR), Johannesburg. In actual practice, except for high flying aircraft, FIR/FIC Johannesburg hardly is in position to provide air traffic services to the numerous domestic and non-scheduled micro-regional flights in the air space of Botswana, the area of which is 582000 sq. km.

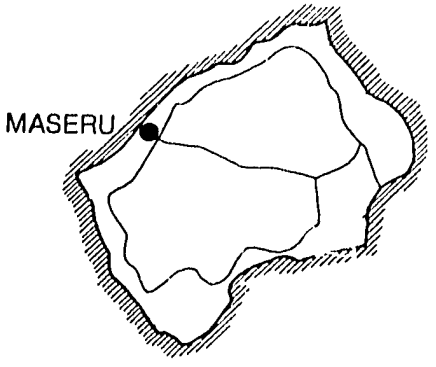
To provide adequate ATS services to all flights, for safety of air-navigation over Botswana as well as for national security, it has become necessary to establish a separate FIR for Botswana. In view of the region's geo-political factors, a separate FIR for Botswana should be in operation as soon as possible.

A "Financial and Economic Feasibility Study of a Flight Information Region for Botswana" was carried out in 1975. The findings of the study have been updated with relevant technological changes.

Status : Proposals for amending the AFI Navigation Plan are being prepared. Funding is being sought.

4.3.3 Acquisition of New Aircraft for Air Lesotho

LESOTHO



Estimated Costs
Total : USD 40.0 million
Foreign : USD 40.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 40.0 million

Executing Agency:
Ministry of Transport and Communications
Start : 1990
Duration: 3 years

Objectives : To provide Lesotho with adequate air transport capacity for contingencies.

Description: The project includes the purchase of two convertable passenger/cargo planes for the transport of emergency supplies from the SADCC Member States.

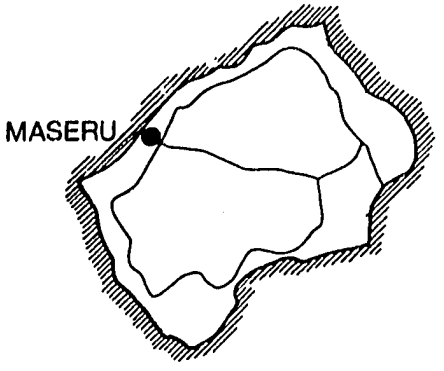
Technical assistance is needed for the implementation of the project for three years.

Status : One aircraft Boeing 707 delivered and taken int service. Funding sought for two aircraft under this plan.

September 1990

4.3.4 Rehabilitation of Aeronautical Telecommunications, Lesotho

LESOTHO



Estimated Costs
Total : USD 0.3 million
Foreign : USD 0.3 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.3 million

Executing Agency:
Ministry of Transport and Communications
Start : 1990
Duration: 2 years

Objectives : To improve rural airfield communications and to expand range of Very High Frequency (VHF) transmission through one VHF repeater station and to improve the navigation aids at Thaba-Tseka airport, being a centre for search and rescue.

Description: The project covers the three telecommunication projects for civil aviation taken up in the Telecommunications Ten-Year Development Plan, namely:

3-CA-1 Rural Airfield Communications
3-CA-2 Extended Range VHF and
3-CA-3 NDB at Thaba-Tseka Airport

Project 3-CA-1 includes the supply, installation and commissioning of six 100 W HF SSB transceivers at three airfields, and the provision of spare parts and training staff.

The project 3-CA-2 includes the supply of one VHF repeater station complete with antennas, power supplies and all other necessary equipment.

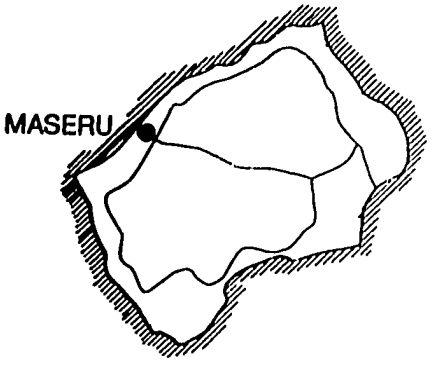
The project 3-CA-3 includes the supply of one 100 W NDB with power supply, antennas and spare parts.

Status : Financing is being sought as part of the contingency preparations.

September 1990

4.3.5 Extension of Moshoeshoe I International Airport, Lesotho

LESOTHO



Estimated Costs
Total : USD 34.0 million
Foreign : USD 34.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 34.0 million

Executing Agency:
Ministry of Transport and Communications
Start :
Duration:

Objectives : To provide Lesotho with possibilities to operate intercontinental freight air services.

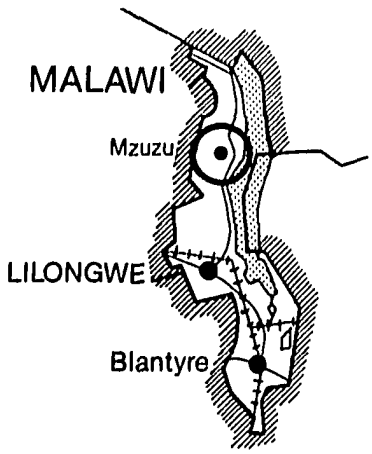
Description : The project includes first of all an extension of present runway with 1 000 metres and strengthening of existent runway and taxiways and extension of the international apron. (USD 9.0 million) As a consequence of expected increased traffic the following areas have to be improved:

- Roads and Carparks (USD 0.7 million)
- Buildings, USD 14.5 million)
- Navigational Aids and telecommunications (USD 1.3 million)
- Airfield Lightning and Power distribution (USD 0.4 million)
- Staff Housing (USD 1.9 million)
- Equipment (USD 3.8 million) and
- Consultancy fees (USD 2.4 million)

Status : Funding is being sought.

September 1990

4.4.1 New Airport at Mzuzu, Malawi



Estimated Costs
Total : USD 17.3 million
Foreign : USD 13.0 million
Local : USD 4.3 million

Funding Secured
Foreign : USD 2.6 million
Local : USD 4.3 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 10.4 million

Executing Agency:
Ministry of Transport and Communications
Start : 1988
Duration: 4 years

Objectives : Construction of a new airport about 5 km west of Mzuzu, the capital of the North Region, with the objective to provide an airport that will permit operations by medium range jet aircraft, such as the Boeing 737 which are generally used in the SADCC region, rather than the smaller turbo prop HS 748's which are used at present.

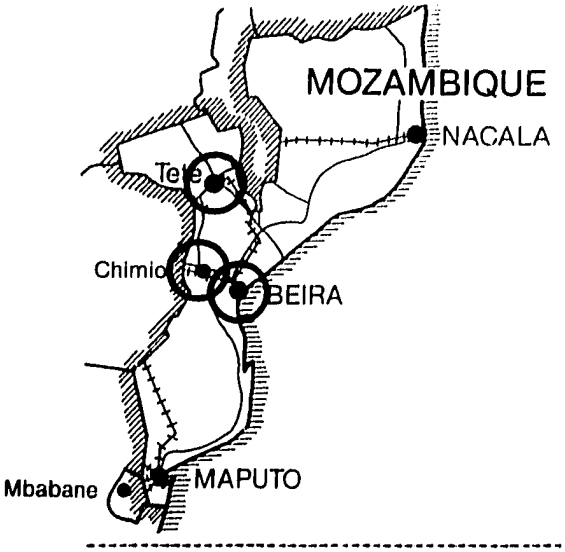
Description: The project provides for the following :

- the runway
- the main taxiway
- the commercial aviation taxiway
- the general aviation apron
- roads and car parks
- new terminal area
- new terminal buildings including control tower, and administration block
- freight terminal and fire station
- navigation aids, communication and landing equipment
- fire and rescue vehicles/services
- staff quarters for about 120 families
- airport lightning, meteorological equipment, power supply, vehicles, etc.

Status : Detailed design and preparation of the tender documents are underway, financed by France. Financier for construction is being sought.

September 1990

4.5.3 Civil Aviation Projects in the Beira Port Transport System Development Plan



Estimated Costs
Total : USD 22.5 million
Foreign : USD 21.3 million
Local : USD 1.2 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 1.2 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 21.3 million

Executing Agency:
Ministry of Transport and Communications
Start : 1990
Duration: 5 years

Objectives : To improve the flight traffic services in the Beira region by general rehabilitation and modernization of related civil aviation facilities.

Description: The rehabilitation and modernization programme consists of following projects:

		Estimated Cost USD million	
		Total	Foreign
C-TA-1	Technical Assistance and Training	5.0	5.0
C-CE-1	Development of Beira Terminal	2.0	2.0
C-CE-2	Strengthening of Runways in Beira and Tete	4.5	3.6
C-CE-3	Airport Building, Chimoio	1.5	1.2
C-ME-2	Communication and Navigation, Beira, Chimoio and Tete	6.0	6.0
C-ME-3	Fire Fighting Equipment (Beira, Chimoio and Tete)	2.5	2.5
C-ME-4	Maintenance Equipment	0.5	0.5
C-ME-5	Airport Lighting, Chimoio	0.5	0.5
	TOTAL	22.5	21.3

For details see Beira Port Transport System 10-Year Development Plan.

Status : Building of a terminal and installation of COM equipment and NAVAIDS in Chimoio expected to be completed 1990.

Two aircraft to serve Beira Corridor Traffic delivered and taken into service. Funding is being sought.

4.5.4 SADCC Boeing 737 Flight Training Centre

Estimated Costs
Total : USD 3.6 million
Foreign : USD 3.6 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 3.6 million

Executing Agency:
Min of Transport and Communications, Mozambique
Start : 1990
Duration: 1 year

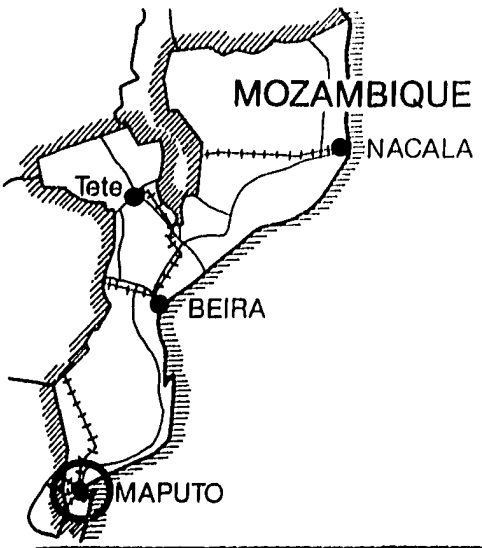
Objectives : To offer flight simulation training for all Boeing 737 pilots of the SADCC National Airlines.

Description: The upgrading of the present Boeing 737 - 200 Basic simulator, with its JT8D - 9A engine simulator to cover relevant versions of Boeing 737 operated by SADCC National Airlines, consists of the following actions :

(i) installation of a visual system,
(ii) replacement of the mainframe computer,
(iii) inclusion of the software adapted to all models of the SADCC Boeing 737 fleet,
(iv) evaluation of interchangeability between different cockpit layouts,
(v) installation of an uninterrupted back-up power supply.

Status : Funding is being sought.

4.5.5 Development of Maputo Airport



Estimated Costs
Total : USD 6.5 million
Foreign : USD 5.2 million
Local : USD 1.3 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 1.3 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 5.2 million

Executing Agency:
Ministry of Transport and Communications
Start : 1988
Duration: 3 years

Objectives : Improvement and upgrading of the existing airport at Maputo, about 3 km N of the city.

Progress : The Maputo International Airport is the principal airport of Mozambique, serving the capital and being the main gateway for regional and intercontinental traffic. The neighbouring airports serving as alternatives.

As result of recent improvements in aeronautical infrastructure in the SADCC context (airport lighting, ILS), the airport is capable of handling medium-range aircraft, such as B737/-B727 largely used in the Region, as well as the critical aircraft DC10/B747.

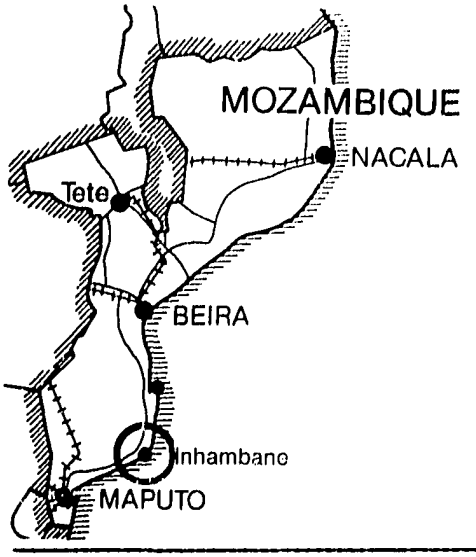
The full benefits of recent investments cannot be fully realized without additional investments to be made during this decade in order to improve the flight safety, security and regularity of flights and the services to passengers and cargo on the ground. This development will benefit the Region, considering the present situation in Southern Africa, in safeguarding regional connections and consolidating the co-operation between flight operations.

The project includes :
- new runway overlay (about 150.000 m2)
- upgrading of the existing passenger terminal, including equipment, to cater for an annual traffic of 1 million passengers
- extension of the cargo terminal
- acquisition of fire and rescue vehicles
- installation of new NDB (navigational aids) and aeronautical communication equipment VHF (air-ground), and a surveillance radar for air traffic control
- construction of a catering unit
- technical assistance to the airport management
- training of airport personnel (handling and commercial services, fire fighting, maintenance, etc.)

The runway is now being re-surfaced financed by Mozambique.

Status : Additional funding is being sought.

4.5.6 Development of Inhambane Airport



Estimated Costs
Total : USD 6.0 million
Foreign : USD 5.0 million
Local : USD 1.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 1.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 5.0 million

Executing Agency:
Ministry of Transport and Communications
Start : 1990
Duration: 5 years

Objectives : Improvement and upgrading of the existing airport, about 2.5km E of the city.

The aim of this project is to upgrade the airport to be capable of handling medium size aircraft (e.g. B737, which is generally used in the region) and made it usable as an alternate airport to Maputo and Beira airports.

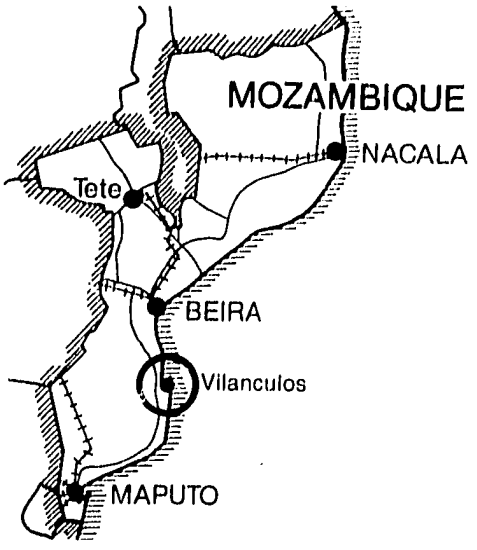
Description : The existing Inhambane airport is located 23 52'S and 35 24'30" E on W158 air route and has a runway of about 1500m asphalt and a very small terminal building/technical services. The critical aircraft is F27, the operation is very poor due to the lack of :

- terminal facilities
- nav aids
- lighting systems
- fire services ...

The project shall include :
- strengthening, widening (from 30 to 45 metres) and extending (at least by 500 metres) of the main runway
- strengthening and widening of the taxiway
- strengthening and extension of the aircraft parking area
- runway lighting including emergency power supply
- installation of radio-aids (NDB), communications (HF/SSB and VHF) and meteorological equipment
- fire and rescue vehciles
- new terminal bulding for passengers
- new cargo terminal
- utilization of existing aerogare installations for technical services, including the fire fighting service
- improvement and construction of residences for airport personnel
- technical assistance to management
- training of airport personnel

Status : Financing is being sought.

4.5.7 Development of Vilanculos Airport



Estimated Costs
Total : USD 2.5 million
Foreign : USD 2.0 million
Local : USD 0.5 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.0 million

Executing Agency:
Ministry of Transport and Communications
Start : 1990
Duration: 3 years

Objective : Improvement and upgrading of Vilanculos airport, about 1.5 kms of the city.

The aim of this project is to upgrade Vilanculos airport to promote the development of tourism, industrial projects and to increase the opportunities for regional air services.

Progress : The project therefore is to upgrading the existing airport to permit regular operations of the aircraft type F27 or smiliar.

The existing infrastructure is located 22 01 S and 35 19 E on W15 D air route and has two runways of about 1470 x 30 and 750 x 30 metres in aspfalt with restrictions due to the lack of navaids, fire services, communications and landing aids.

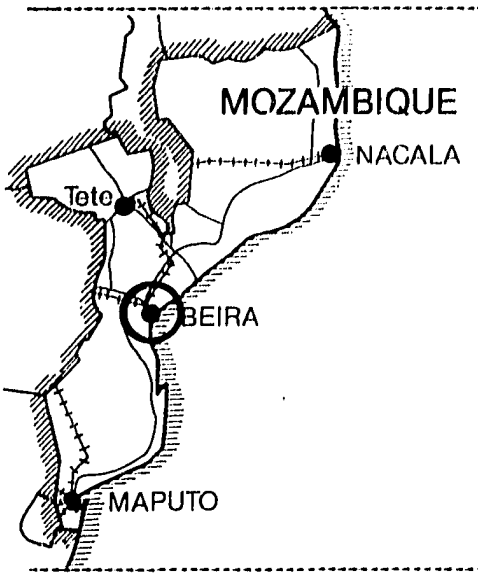
The project includes :

- new runway overlay and widening from 30m to 45m
- new lighting systems and stand-by power supply
- installation of new NDB (with solar panel), COM equipment and METEO equipment
- extension and renovation of terminal buildings, including technical services, fire and rescue services
- acquisition of fire and rescue vehicles
- technical assistance of management
- training of airport staff.

Rehabilitation of the passenger terminal building has started.

Status : Additional funding is being sought.

4.5.8 Improvement of ATC Equipment in Beira FIR, Mozambique



Estimated Costs
Total : USD 8.0 million
Foreign : USD 8.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap
Total : USD 8.0 million

Executing Agency:
Ministry of Transport and Communications, Mozambique
Start : 1990
Duration: 1 year

Objectives : In order to improve the flight safety standards, within Beira FIR (Flight Information Region) which covers the air space over the territory of Mozambique, major investments in air traffic control equipment and manpower training are required for radar coverage.

Description : In addition to improving the overall safety and reliability of air traffic control the project is required to increase the capability of Mozambique to detect and monitor flights and thus reduce the possibility of airspace violations.

With the proposed equipment two serious accidents in the last years in Mozambique could have been avoided.

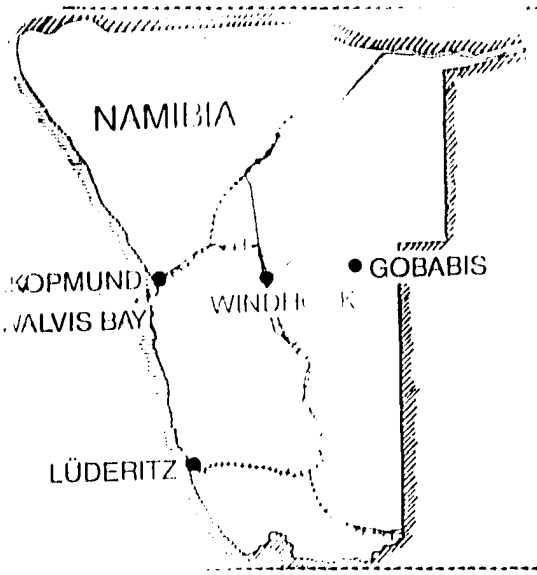
The radar equipment must provide automatic aircraft identification of transponder equipped aircraft.

The capital investment components of this project are as follows :

- Installation of Surveillance Radar at Beira including spares, ancilliary and test equipment;
- Installation of primary and secondary radar at Maputo with inter-linking telecommunications to Beira;
- Provision of uninterruptible power supply and air conditioning at the radar transmitter sites; and
- Costs for training of needed air traffic control and maintenance manpower.

Status : Funding sought.

4.6.1 ATC Training, Namibia



Estimated Costs:
Total : USD 1.0 million
Foreign : USD 1.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.0 million

Executing Agency:
Department of Transport

Start : 1991
Duration: 5 years

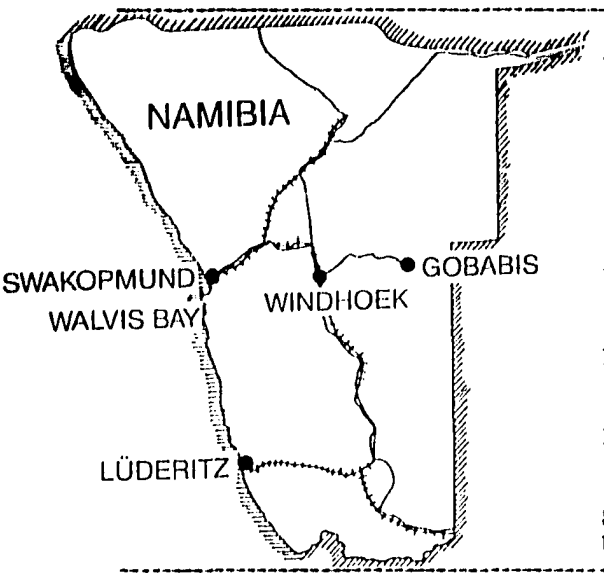
Objectives : To establish a short and medium term training programme for ATC personnel.

Description : Up until independence all Namibian ATC's were trained in the Republic of South Africa. Although this training was of a high standard Namibia remained dependent on South Africa for all its ATC training requirements and it is important that this dependency be broken. What is needed is a training facility which maintains very high standards, is recognised worl wide, teaches students the latest techniques and uses up to date technology. ATC students will have to be able to attend this training facility both for abinitio and advance training. Courses will have to be in English and must be available for at least five years. The expected results will be a world standard air traffic control.

Status : Training facilities have to be identified. Funding is being sought.

September 1990

4.6.2 Installing of an Air Traffic Control Radar at Windhoek Airport, Namibia



Estimated Costs
Total : USD 7.0 million
Foreign : USD 7.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 7.0 million

Executing Agency:
Department of Transport

Start : 1991
Duration: 12 Months

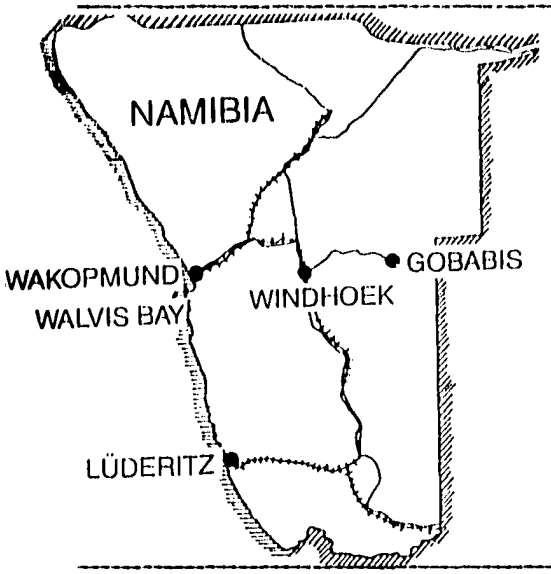
Objectives : To improve Air Traffic control in the central region of Namibia.

Description : The installation of Primary surveillance radar at the airport to assist air traffic control. The Air Traffic Control centre at Windhoek International Airport operates using procedural methods not having been equipment with a surveillance radar installation. With the increase in international air traffic to and from the airport since the beginning of 1989 and the considerable light aircraft traffic emanating from Eros Aerodrome, some 40 Km to the west of the international airport, it is for safety reasons considered essential to introduce radar control of air traffic over the central region of Namibia.

Status : Funding is being sought.

September 1990

4.6.3 Installation of ILS at Windhoek Airport, Namibia



Estimated Costs
Total : USD 0.8 million
Foreign : USD 0.8 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.8 million

Executing Agency:
Department of Transport

Start : 1991
Duration: 6 Months

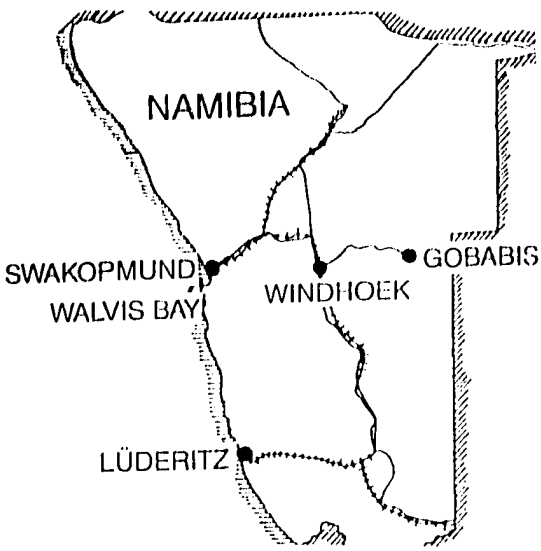
Objectives : To improve aviation safety and the operational regularity at Windhoek airport.

Descriptions: Installation of an instrument landing system (ILS) Cat 1 on the main runway (runway 26) at Windhoek Airport is considered absolutely necessary. It will lower the minima of the decision altitude in instrument meteorological conditions. At present several B747 type aircraft from Europe destined for Windhoek International Airport are diverted each rainy season to Johannesburg or Durban due to inclement weather. Such aircraft, due to the unfavourable easterly winds prevailing at that time of the year are often low on fuel, which they would have supplemented under more favourable conditions. There have also been incidences where overseas flights en route to Johannesburg have requested diversion to Windhoek International Airport for fuel uplift but being rejected due to unfavourable weather at Windhoek being below minima. It will also facilitate training of Namibia pilots for ILS instrument rating as well as maintaining their rating. At present ILS instrument rated pilots have to fly to suitable airport in the RSA for this purpose.

Status : Funding is being sought.

September 1990

4.6.4 En-route Navigation Aids for Civil Aviation, Namibia



Estimated Costs
Total : USD 1.3 million
Foreign : USD 1.3 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.3 million

Executing Agency:
Department of Transport

Start : 1991
Duration: 12 Months

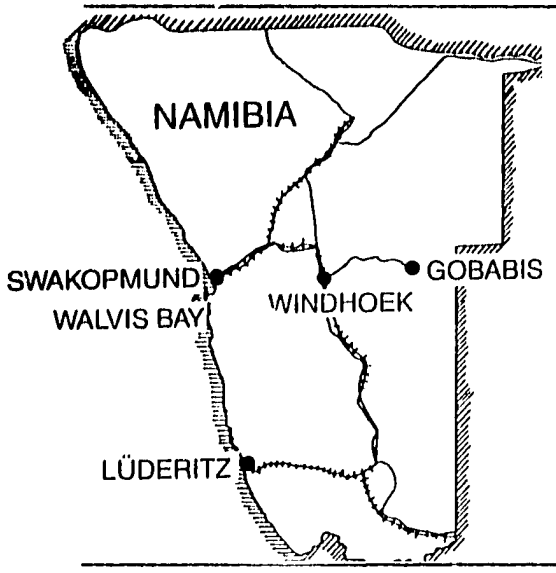
Objectives : To achieve a more orderly use of the country's airspace resulting in a higher safety level and to provide on-route navigation radio beacons within Namibia to facilitate navigation by aircraft and provide for the establishing of aditional air routes.

Description : Namibia is in a dire need of navigation aids to guide pilots along specific routes through its airspace especially those pilots who are not familiar with the country. The maximum required at this stage is four VHF omni-directional radio range beacons and distance measuring equipment (VOR/DME). These will be used as facilities on new air routes for international traffic to America, Europe and the rest of Africa.

Status : Navigation Master Plan exists but in need to be updated. Funding is being sought.

September 1990

4.6.5 Technical Assistance Civil Aviation Department, Namibia



Estimated Costs
Total : USD 2.5 million
Foreign : USD 2.5 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.5 million

Executing Agency:
Department of Transport

Start : 1990
Duration: 4-5 Years

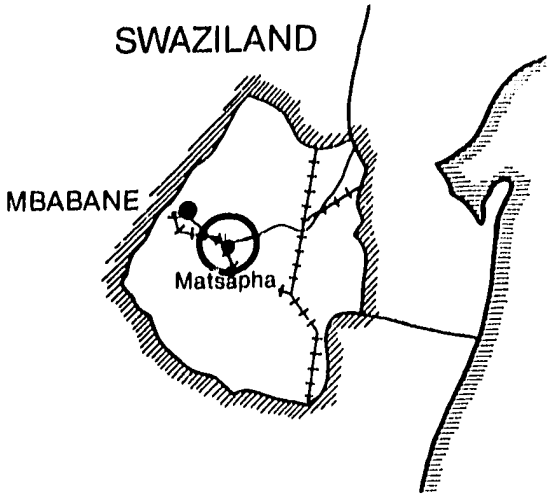
Objectives : To train the Department of Transport (DOT) to ensure that Namibia will be able to perform essential functions related to international co-operation, the regulation of air transport, aviation safety and air navigation and to establish a unit within DOT capable of performing all the duties normally to be performed by a government in the field of aviation.

Description : The project would provide the DOT with 3 civil aviation experts over a period of 3 or 4 years with the task to recruit three civil aviation experts and initially to fuction as Director of Civil Aviation, chief of the Aviation Safety Division and Chief of the Air Transport Division.
All three experts should be available in an advisory capacity, for some time (up to 2 years(after they have stepped back from their line positions.

Status : Funding is being sought..

September 1990

4.7.1 Development of Matsapha Airport



Estimated Costs
Total : USD 38.0 million
Foreign : USD 32.0 million
Local : USD 6.0 million

Funding Secured
Foreign : USD 20.8 million
Local : USD 6.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap
Total : USD 11.2 million

Executing Agency:
Ministry of Works, Power and Communications
Start : 1984
Duration: 7 years

Objective : The aim of this project is to upgrade Matsapa Airport to enable handling of medium range aircraft (e.g. B737) with full payload.

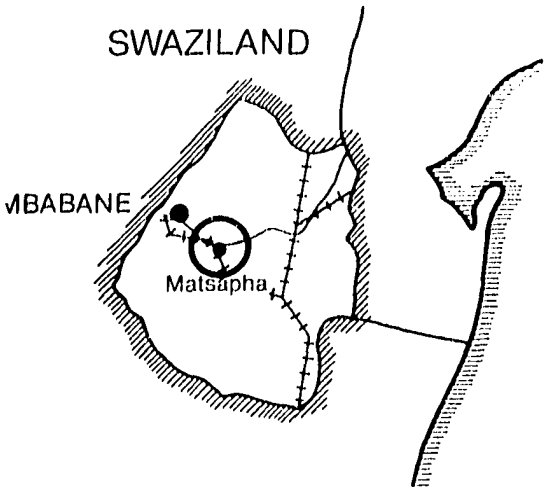
Progress : Use of B737 a/c with full belly compartment capacity for cargo and without time restrictions at the airport will improve Royal Swazi's Air Cargo operating result.

(i) Construction of runway, 2600m long and 45m wide, taxiway and apron;
(ii) Installations of airfield lighting and power-house;
(iii) Building control tower, operations building and remote transmitter station; as well as a training component and a small telecommunications component;
(iv) Installation of navigation aids, communications and landing equipment;
(v) Training and technical assistance;
(vi) Construction of fire and rescue station;
(vii) Installation of meteorological equipment;
(viii) Construction of new terminal building with car parking area and access road;
(xi) Construction of new apron, taxiway and fuel hydrant system; and
(x) Construction of cargo building, staff housing and sewage disposal system.

Status : Items (i), (ii), (iv) and (vi) have been completed.
Items (iii) is almost completed.
Items (v) and (vii) is ongoing.
Items (viii), (ix) and (x) required funding.
Additional funding sought.

September 1990

4.7.3 Development of Royal Swazi National Airways



Estimated Costs
Total : USD 45.0 million
Foreign : USD 45.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 45.0 million

Executing Agency:
Ministry of Works and Communications
Start :
Duration: 1 year

Objectives : Acquisition of 2 aircraft. One jet aircraft 120 to 150 seater and one turboprop aircraft 30 to 40 seater.

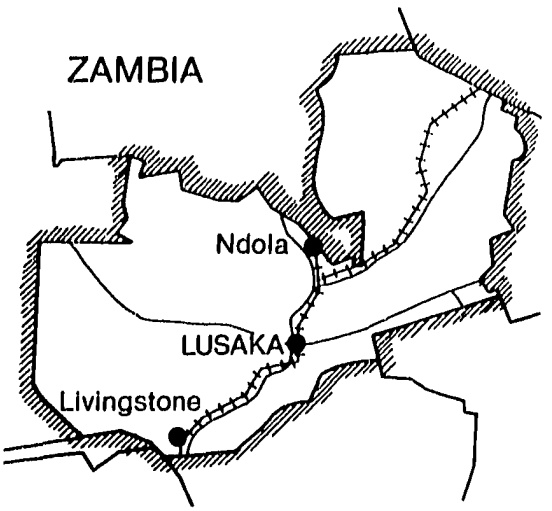
Description : The airline operates flights with one F28/65 seater aircraft with hardly any cargo carrying capacity.

The aircraft sought for medium haul flights would be a twin-engine jet carrying 120 - 150 passengers with capacity to carry 5 tons of cargo or more. A second aircraft would be a turboprop aircraft with 30/0 seating capacity to be used for short haul regional routes.

Status : Funding required.

September 1990

4.9.1 Study on the Improvement of Livingstone, Ndola and Southdown Airports, Zambia



Estimated Costs
Total : USD 0.7 million
Foreign : USD 0.7 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.7 million

Executing Agency:
Department of Civil Aviation

Start : 1990
Duration: 1 year

Objectives : Study on improvements of Livingstone, Ndola and Southdowns airports to cater for the future development of the air transport in Zambia.

Description: For Livingstone the study should cover :
- strengthening of the runway - estimated cost USD 5.0 million (1983)
- construction of new control building and realignment 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.

For Ndola the study should cover :

- replacement of existing terminal building
- extensions of the runway
- additional airfield lighting and
- extensions as well as new taxiways.

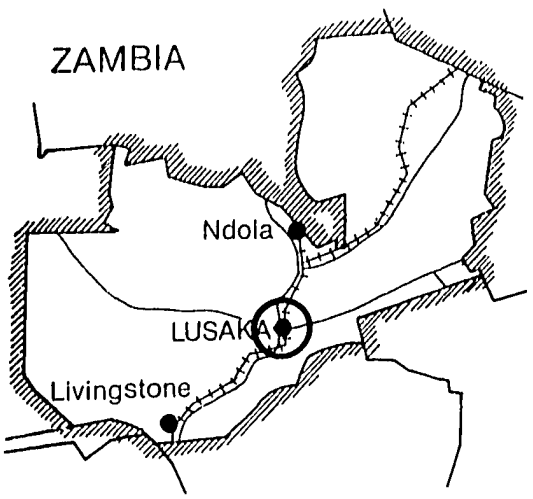
Further improvement of navigation equipment and also design and construction of a new cargo terminal will be needed at a later stage.

For Southdowns airport following should be studied :

- total re-surfing for at least Boeing 737 standard
- new taxiways
- relocation and enlargement of facing area
- installation of airfield lighting
- passenger terminal
- air traffic control tower
- car parking and realignment of access roads.

Status : Funds for a feasibility study being sought.

4.0.4 Study on New Hangar at Lusaka International Airport, Zambia



Estimated Costs
Total : USD 0.1 million
Foreign : USD 0.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.1 million

Executing Agency:
Zambia Airways Corporation

Start : 1990
Duration: 3 months

Objective : The study shall answer the question, whether the maintenance base as a whole or part of it should be designed for Zambia Airways need only or being capable of serving the total maintenance needs of the region.

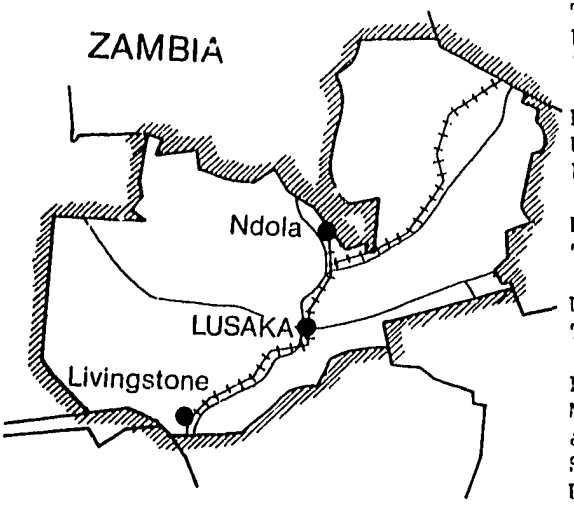
Description: The study must be co-ordinated with project 4.0.3, and shall embrace a study of the need for :

- a widebody hangar and workshop
- a power plant overhaul building and offices
- a component overhaul facility.

Status : Funding is being sought.

September 1990

4.9.5 Improvement of Zambia Air Services Training Institute (ZASTI)



Estimated Costs
Total : USD 1.7 million
Foreign : USD 1.7 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.7 million

Executing Agency:
Ministry of Power, Transport and Communications
Start : 1990
Duration: 3 years

Objective : To improve the ZASTI organization to enable it to perform efficient training of students from all SADCC Member States.

Description: In order to improve the training efficiency at the institute, repair and modernization of equipment, maintenance of accommodation and student facilities are needed.

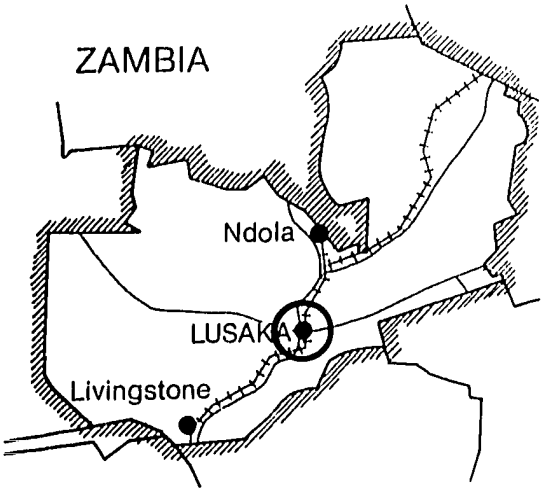
The repair of equipment consists mainly of putting available aircraft in serviceable condition. Modernization of equipment embraces procurement of various engineering workshop equipment, fire service, telecommunications and avionics equipment.

An improvement, of the existing dining and kitchen facilities will also be needed.

Status : Civil works for an avionics laboratory is funded by UNDP.
RIC has included this project as a sectional manpower development project.
Funding sought.

September 1990

4.9.6 Lusaka International Airport Development, Zambia



Estimated Costs
Total : USD 44.1 million
Foreign : USD 44.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 44.1 million

Executing Agency:
Department of Civil Aviation, Zambia
Start : 1990
Duration: 10 years

Objectives : A development of Lusaka International Airport in order to :

(i) secure air safety with improved air navigation facilities,
(ii) achieve a service level of international standard of terminal facilities,
(iii) make it possible for the airport to be a gateway to the landlocked Zambia and partly also for SADCC region as a whole.

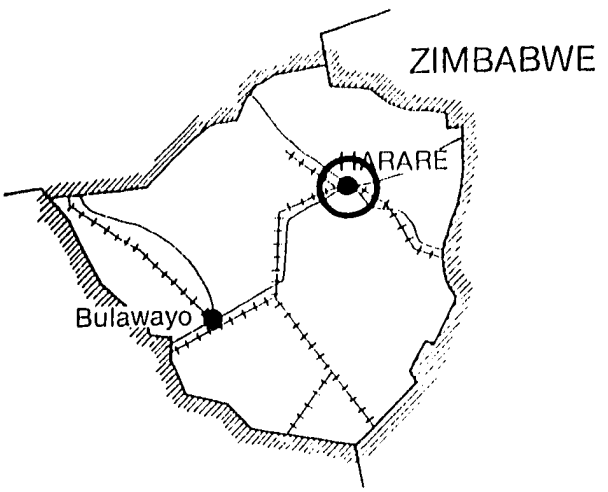
Description: Following elements of the airport have to be improved to indicated requirements;

(i) overlay and replace cracked concrete slabs, on runway (Required runway length : 400m),
(ii) overlay taxiways and extension to new VIP apron, (Requirement : Partial parallel)
(iii) replace cracked slabs and expand main apron, (Requirement : 15 aircraft stands).
(iv) installation of baggage claim conveyor, etc, (Requirement : Passenger terminal 13.000 m2 (sq.m)
Cargo Terminal 6.400 m2 (sq.m)
Car parking lot for 230 cars
Catering facility 1.800 m2 (sq.m)),
(v) renew radio navaids equipment, building and cables for ILS, etc. and
(vi) install primary and secondary radar (Requirement : Cat I ILS).

Status : Financing is being sought.

September 1990

4.10.3 Modernization of AFTN Message Switching Centre at Harare International Airport



Estimated Costs
Total : USD 0.6 million
Foreign : USD 0.6 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.6 million

Executing Agency:
Department of Civil Aviation

Start : 1990
Duration: 1 year

Objectives: To provide a reliable Aeronautical Fixed Telecommunications Network (AFTN) by introducing a modern simplified switching centre at Harare International Airport.

Description: The centre is meant 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.

Department of Civil Aviation recommends computerised fully automatic AFTN system capable of:-

(i) handling not lesd 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 ects.) 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 Baud 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.

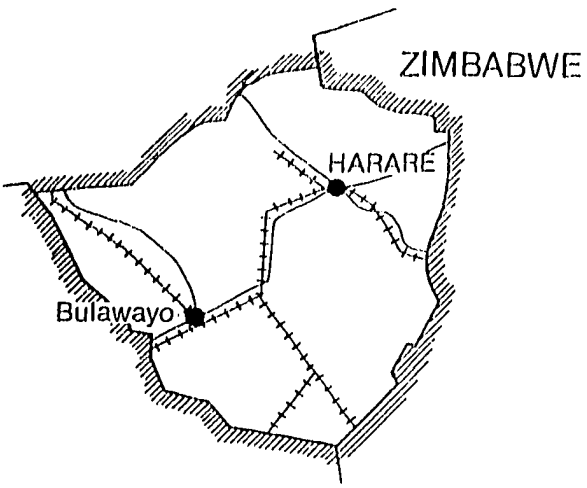
(iv) Installation of new domestic direct links to Kariba and then Mavingo.

According to ICAO recommendations, and AFTN system is a prerequisite to the operation of an International Airport.

Status : The equipment will be delivered 1990 and is expected to be put in service in 1991. Funding is being sought.

September 1990

4.10.4 Improvement and Expansion of Radar Coverage, Zimbabwe



Estimated Costs
Total : USD 8.0 million
Foreign : USD 8.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 8.0 million

Executing Agency:
Ministry of Transport,
Zimbabwe
Start : 1990
Duration: 2 years

Objectives : In order to improve the safety standards within Zimbabwe's busy airspace and at the same time to increase the capability of the Department of Civil Aviation to reliably operate and maintain its radar equipment, major investments in additional equipment and manpower training are required for radar coverage.

Description: In addition to improving the overall safety and reliability of air traffic control the project is required to increase the capability of Zimbabwe to detect and monitor flights and thus reduce the possibility of airspace violation. The proposed new secondary equipment provides automative aircraft identification of transponder equipped aircraft.

The capital equipment components of this project are in three phases :

Phase 1 (1988/89)

- Addition of Secondary Surveillance Radar (dual transmitter/receiver set) as an extension of the existing Primary System at Harare, including all spares, ancillary and test equipment.

- Provision of a new uninterruptible power supply (UPS) and air conditioning at the radar transmitter site.

Phase 2 (1989/90)

- Installation of Primary and secondary radar at Bulawayo with interlinking telecommunications to Harare.

Status : Tenders have been received and will be evaluated soon. Funding is being sought.

September 1990

Telecommunications

5.0.3 Study on AXE 10 Repair Centre

Estimated Costs
Total : USD 0.4 million
Foreign : USD 0.4 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.4 million

Executing Agency:
SATCC

Start : 1990
Duration: 2 Years

Objectives :
- To determine the feasibility of providing a telephone exchange equipment repair center in the region for the AXE 10, the cost involved, and advantages and disadvantages of such an investment.
- To provide software technical assistance to the maintenance of regional AXE ISC's and national transits.

Description: The AXE 10 switching system is now operating in the region in many of the countries and others are planned in the short term.

- The Telecommunication Administrations agreed on the necessity of a study for a central repair facility to reduce dependence on the manufacturers, delay in spare replacement and depletion of foreign currency. The study will consider, among others, type and number of faulty boards, the appropriate level of local repair, integration with existing or planned repairing facilities in the region, manpower requirements, financial and administrative matters.
- This part of the project aims at providing at least two AXE 10 software engineers to be based in the region for a period of two years to assist in the specialised software maintenance of the software switching systems and counterpart training of regional staff.

Status : Funding sought.

5.0.4 Implementation Plan for Regional Earth Station Connectivity Project (1989-93)

Estimated Costs
Total : USD 16.0 million
Foreign : USD 16.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.6 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 15.4 million

Executing Agency:
SATCC

Start : 1990
Duration: 3 Years

Objective : Implementation study to permit smooth co-ordination of the introduction of Intermediate Data Rate (IDR) and Time Division Multiple Access (TDMA) technologies into the facilities of the Earth Stations in the Sub Region in order to permit regional satellite circuit interconnectivity.

Progress : SADCC countries are increasingly moving towards digitilisation of the national networks and in pace with this trend international satellite systems are also introducing digital techniques that will offer users an increase in capacity and data rate over analogue systems.

With the launching of Intelsat VI 335.5 Satellite (Oct.1989) and in accordance with the Intelsat Operational plans, the regions Earth Stations will be facing the same Satellite for regional connectivity. Initial interconnectivity (1990-1992) is being realised through usage of conventional SCPC and FDM equipment at a total estimate cost of USD 200,000.

The survey study undertaken through CIDA SATCC Technical Services Fund has identified the following intermediate data rate (IDR) with digital circuit multiplication equipment (DCME):

COUNTRY	ITEM	COST (USD million)
ANGOLA, STBD	IDR/DCME	1.8
BOTSWANA, STDB	IDR/DCME	1.8
LESOTHO, STDB	IDR/DCME	2.0
MALAWI, STDB	IDR/DCME	1.5
MOZAMBIQUE, STDA	IDR/DCME/HPA/Digital link	3.2
SWAZILAND, STDB	IDR/DCME/LNA	2.0
TANZANIA, STDA	See SATCC Project 5.7.3	-
ZAMBIA, STDA	IDR/DCME/Digital link	2.7
ZIMBABWE, STDA	IDR/DCME -See SATCC P. 5.9.8	1.3
	TOTAL	15.5

Status : CIDA has financed the study survey under the auspices of SADCC Technical Services Fund.
USAID is financing the drawing up of detailed technical specification being undertaken by GIE for Earth Satations in Lesotho, Swaziland and Zambia.
Financing is required for project implementation.

September 1990

5.0.5 Study on the Harmonization of Telephone and Telex Tariffs for the Sub-Region.

Estimated Costs
Total : USD 0.3 million
Foreign : USD 0.3 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.2 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.1 million

Executing Agency:
SATCC

Start : 1990
Duration: 1 Years

Objective : To investigate international tariffs pertaining in the Subregion with a view to achieveing a rational tariff harmonization which will be used for the establishment and implementation of common telephone and telex structure in the sub-region.

Progress : Administrations in the sub-region use different types of accounting rates for the PANAFTEL intra-regional traffic. Some Administrations use the 1982 ARUSHA TARIFFS and in some relations the CCITT D200R and D201R are applicable. Bilateral tariff agreements are also being used in certain cases.

In order to harmonize the introduction of common telephone and telex tariff's SATCC and ITU undertook a study in consultation with the Administrations which determined:

- recommendations on the accounting-rate standards and accounting rate division structure to be adopted in the SADCC countries,
- the impact of current Sub-regional alternative routing on the balance of payments between countries using the recommended accounting rates divisions,
- as a follow up the 9th SATA Conference recommended a further study survey to determine the reduction in collection charges for intra-SADCC traffic in order to encourage the growth of regional traffic.

The ITU recommendations on accounting rate standards and accounting rate divisions for the SADCC countries were adopted by Administrations.
Further Administrations, with effect from 1st April, 1990 recommended adoption SKA (Sender Keeps All) accounting arrangements for intra-SADCC relations.

Status : Financing is required for further study on determination of extra-SADCC accounting rate standards and divisions, and harmonisation of intra-SADCC collection charges.

September 1990

5.0.6 Study on the Development of a Regional Manufacturing Strategy

Estimated Costs
Total : USD 0.2 million
Foreign : USD 0.2 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.1 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.1 million

Executing Agency:
SADCC

Start : 1990
Duration: 1 Year

Objective : The project comprises a feasibility study to define a strategy on the establishment, development and or upgrading of local telecommunications manufacturing plants and associated industries in the region.

Progress : The scope of work will involve visits and discussions with Administrations and Manufacturers and will include investigation of the following points which were indicated by the PMTU, UNIDO and ITU findings :

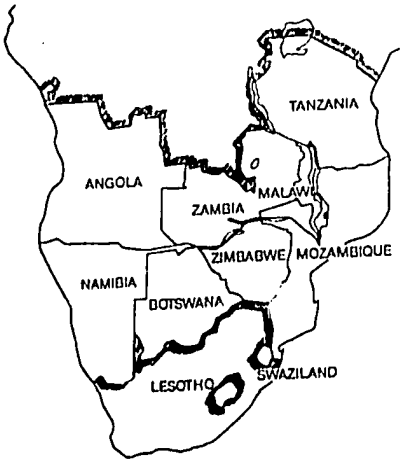
- The market for various product types and ranges in the SADCC and PTA region to the year 2000.
- The market factors such as changes in technology forecasts, the competitive supply situation, existing PTC purchase policies, and trading policies.
- Existing experience in manufacture of electronics and/or related products in each SADCC country, and the availability of manpower and material resources.
- Cost and technological requirements necessary to manufacture each product.
- Infrastructural and economic policy factors relevant to the development of local industry in each country.

Taking into account the results of previous work by UNIDO, ITU and the current ITU/UNDP/RAF/87/170 project, the study would aim to set a strategic priority between products and locations for regional manufacturing, and to highlight the financial, industrial, and telecommunications policy issues which have a bearing on the growth of SADCC industries.

A pre-feasibility study financed by CIDA recommended the requirement for detailed technical specification for telephone cables, mechanical and electronic products.

Status : Financing is required for detailed study of technological and production requirements of the products/materials to be manufactured in the region

5.0.7 Model Study on Maint Procedure and Scheds for PANAFTEL Terres trial Microwave Radio Systems



Estimated Costs
Total : USD 0.1 million
Foreign : USD 0.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Nagotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.1 million

Executing Agency:
SATCC

Start : 1990
Duration: 1 Year

Objective : Study to determine standardized maintenance procedures and schedules on the inter-country PANAFTEL microwave links.

Description : The study involves the collection of data and information from the tests carried out on the inter country links. The data will be analysed to determine maintenance procedures, tests and parameters which will be used to monitor the performance of the radio system.

Status : Financing is required to undertake the Study.

September 1990

5.0.8 Regional Data Communication Strategy Study

Estimated Costs
Total : USD 0.1 million
Foreign : USD 0.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.1 million

Executing Agency:
SADCC

Start : 1990
Duration: 1 Year

Objectives : To investigate the market and technical aspects of the implementation of a regional data communication and packet switching network.

Description : There is an increasing demand and need for advanced telecommunications and informatics services. This demand necessitates the development of data switching networks. Zimbabwe Project No. 5.9.6, Packet Switching for data Network in Zimbabwe, aims to develop a Packet Switched network to cater for its advanced data and computer related telecommunications needs.

The regional study is necessary to take account of the following :

- the potential demand for packet switching and other data communication facilities in the SADCC region;
- the technical and economic feasibility of meeting regional requirements in accessing the, and making use of Zimbabwe's proposed network facilities; and
- development of a rationalised regional network and proposals for encouragement of informatic services regionally.

Status : Financing is required to undertake the study.

September 1990

5.0.9 Study on Optimisation of Regional Switching and Signalling Facilities

Estimated Costs
Total : USD 0.1 million
Foreign : USD 0.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.1 million

Executing Agency:
SADCC

Start : 1990
Duration: 1 Year

Objective : Identification of equipment and operational requirements to optimise the traffic handling capability of the regional network.

Description: The study will be undertaken to determine and make proposals for the following:

- Traffic handling capability of the TSC's in the SADCC countries both for originating/terminating and traffic;

- Grade of service between the TSC's and links comprising the regional network, and

- Extent of ISD automatisation in each country for the SADCC regional traffic.

Status : Financing is required for the Survey and for implementing project elements emanating from the study.

September 1990

5.0.10 Study for Establishment of Regional Maintenance/Repair Workshops

Estimated Costs
Total : USD 0.1 million
Foreign : USD 0.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.1 million

Executing Agency:
SADCC

Start : 1990
Duration: 1 Year

Objective : Provision of equipment for the optimization of existing repair centres and the establishment of regional repair centre/workshop in one of the SADCC countries.

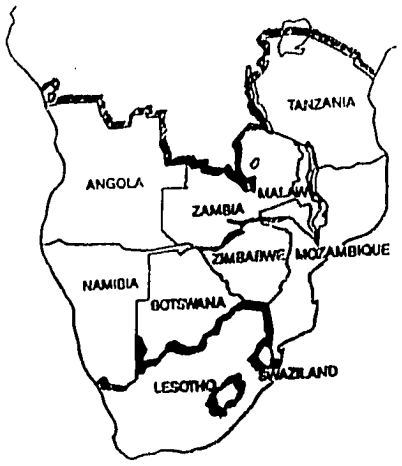
Description: The Study Survey will determine and make appropraite recommendations for:

- design model, establisment and improvement of national and regional repair centres,
- quantity levels of essential spares for regional storage and for maintenace of the regional network,
- procedures to be adopted for repaired assemblies from site to the regional repair centres, and
- manpower development for repair centres staffing requirements.

Status : Financing is sought to endertake the investigation and the project elements emating from the study.

September 1990

5.0.11 Workshop/Seminar on Digital Synchronisation Planning



Estimated Costs
Total : USD 0.2 million
Foreign : USD 0.2 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.2 million

Executing Agency:
SADCC

Start : 1990
Duration: 3 months

Objective : To attain national, regional and international expertise in Synchronisation Planning in the introduction of digital equipment in the regional network and to to draw up a Synchronisation plan for the region.

Descriptio : The digitalisation of the National Network in the SADCC countries has already attained considerable range. The introduction of IDR/DOME equipment in the Earth Station of the region has necessitated the need for the digital network to be Synchronised. Synchronisation equipments is usually quite expensive and hence the need for harmonised and optimised synchronisation plan in the region which will also offer security to the availability of the network.

The project will involve the provision of financial and technical assistance for:

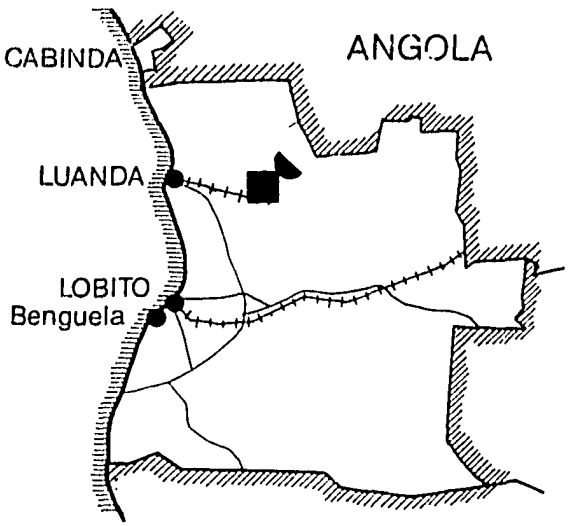
- Carrying out a training session on Network Synchronisation Planning,
- Preparation of national Master Synchronisation Plans,
- Preparation of a Co-ordinated and harmonised Synchronisation Plan for the SADCC countries.

The Workshop/seminar will be attended by two participants from each SADCC Administration.

Status : Finance is sought for project implementation.

September 1990

5.1.1 Telecommunication Projects in the 10 Year Development Plan for Lobito Port Transp.System



Estimated Costs
Total : USD 35.1 million
Foreign : USD 35.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 2.1 million

Financing Gap:
Total : USD 33.0 million

Executing Agency:
Ministry of Transport and Communications, Angola
Start : 1989
Duration: 8 Years

Objectives : Rehabilitation, upgrading and provision of telecommunication facilities serving the Lobito Port Transport System and the interconnection to the SADCC Countries.

Description : The Ten Year Development Plan for the Lobito Transport System includes the following telecommunications projects:

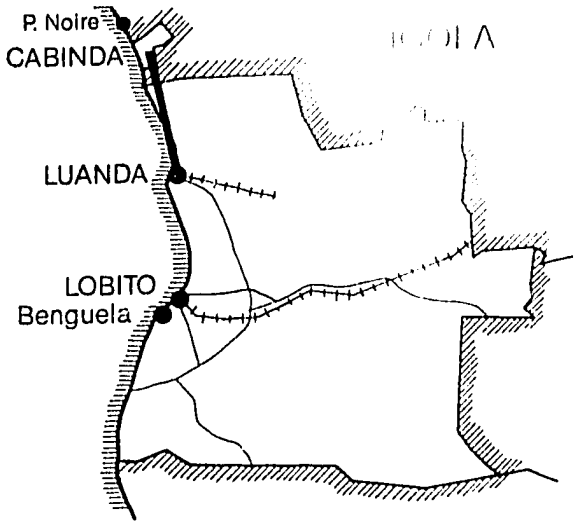
		Costs USD million
(T-M-1)	Technical Assistance to ENATEL	2.5
(T-MC-1)	Provision of HF Radio Maritime Communications to Lobito Harbour	0.8
(T-MC-2)	Expansion of Maritime Communication Facilities	1.8
(T-PT-1)	Microwave Link Benguela/Lobito-Luau	11.4
(T-PT-2)	Spur Routes along the Benguela/Lobito--Luau Corridor	5.9
(T-PT-3)	Extension/Rehabilitation of Switching and Outside Plant along the Corridor	9.1
(T-PT-4)	Rehabilitation of Tropospatter Link Malange-Gauribo-Luena-Zambia	1.3
(T-PT-5)	Microwave Link Luanda-Benguela/Lobito	2.3
	TOTAL	35.1

Status : A Technical Co-ordination Conference to discuss the plan was held in February 1989. NORAD has shown interest to finance the provision of HF Radio Maritime Communications to Lobito Harbour and provision of Link Luena (Angola) - Zambezi (Zambia).

Financing is required to finance the other project elements.

September 1990

5.1.3 Microwave Link Luanda-Cabinda



Estimated Costs
Total : USD 5.1 million
Foreign : USD 4.1 million
Local : USD 1.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 1.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 4.1 million

Executing Agency:
Ministry of Transport and Communications, Angola
Start : 1990
Duration: 4 Years

Objective : The project seeks to provide a large capacity microwave system from Luanda to Cabinda, as part of the PANAFTEL terrestrial network which will give SADCC Countries access to the Central and Western African Subregion.

Description: Presently on the Panaftel section Luanda - Cabinda, a troposcater system is in operation.

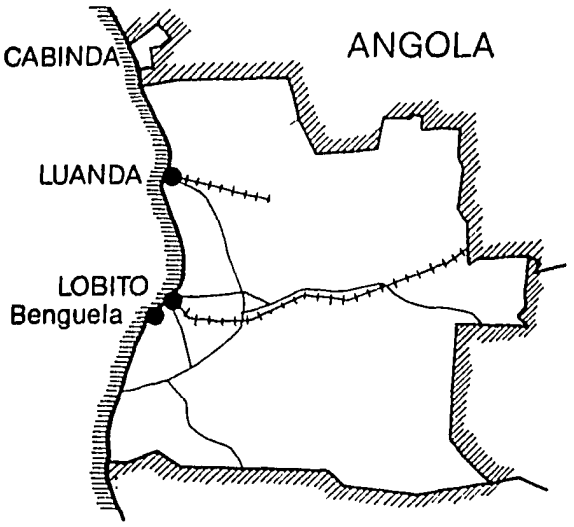
The project calls for the implementation of a 960 channel system consisting of about 8 hops. The link will provide for the needs of the national, regional and international traffic, giving also access to the Panaftel network of the western countries of Africa.

Status : At a preliminary planning stage. Survey data and details of the link are required for preparation of technical specifications.

Financing is required for project implementation.

September 1990

5.1.6 Expansion of Telecommunication Training Centre, Angola



Estimated Costs
Total : USD 21.5 million
Foreign : USD 21.0 million
Local : USD 0.5 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 21.0 million

Executing Agency:

Start : 1990
Duration: 2 Years

Objectives : The project consists of:

a) upgrading and expanding the existing National Telecommunications Training Centre to combined ENATEL and EPTEL training school in order to provide the much needed skilled staff for the operation of the telecommunication network;

b) establishment of the Telecommunication Training Institute to provide the necessary manpower skills to the electronic and telecommunication enterprises.

Description : a) The ENATEL training centre had been operating since May, 1979 under funding from the UNDP in cooperation with the ITU. Training is given in Portuguese. The school is partially equipped with training equipment for illustrating switching, multiplexing and transmission principles.

The project is not yet fully defined but is to include:

- addition of several more classrooms to the training centre
- provision of boarding and lodging facilities to students
- provision of basic classroom equipment
- basic reorganisation of the training programme
- provision of instructors.

A more detailed survey of project requirements is necessary before proceeding to project implementation stage; this might include the relation of the site to allow for the buildings expansion and extensions.

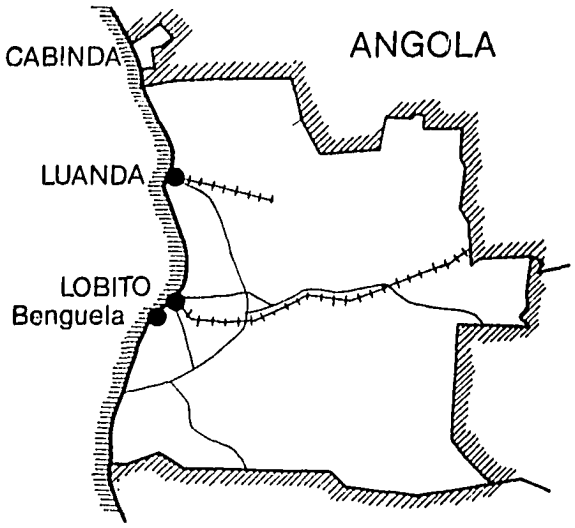
b) This project is to be co-ordinated with the proposed Telecommunications Training Institute to be establish in the country. This part of the project involves

-Provision of Technical Assistance for course and syllabus development and instructors for three years	USD 8.0 million
-Construction of the Institute facilities	USD 12.0 million
TOTAL	USD 20.0 million

Status : Financing is required for project implementation.

May 1980

5.1.8 Provision and Expansion of National Telex Exchanges, Angola



Estimated Costs
Total : USD 2.4 million
Foreign : USD 2.0 million
Local : USD 0.4 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.4 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.0 million

Executing Agency:
Empresa Nacional de
Telecomunicacoes, Angola
Start : 1990
Duration: 1 Year

Objectives : Provision of new (2000 lines) tlex exchanges in Luanda with concentrator extensions to the rest of the country.

Description: The existing telex network consist of old electromechanical exchanges, two in Luanda and one in Huambo, and concentrators located in Cabinda, Lobito and Benguela.

The equipment is 20 years old, obsolete and difficult to get the spares for maintenance and expansion and hence is not able to cater for future growth and expansion of the telex subscribers.

It is proposed to install new exchanges and concentrators at a total capacity of 2,000 lines at the following sites:

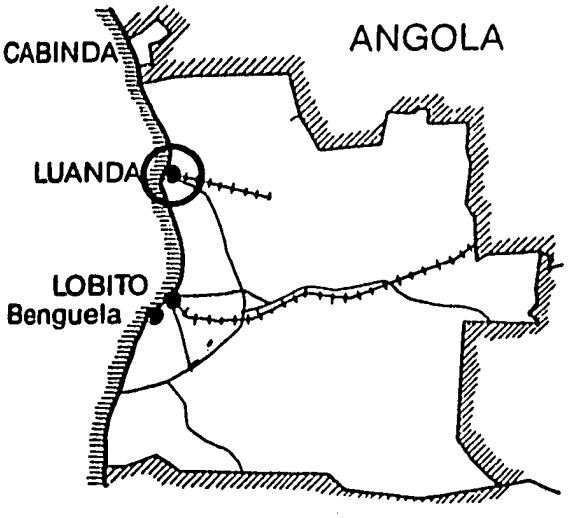
	Existing Capacity	New Capacity
Luanda	800	-
Huambo	200	-
Cabinda	-	-
Lobito	-	-
Benguela	-	-
Lubango	-	-
Total		2,000

A detailed system configuration and technical specification is necessary for project implementation.

Status : Financing is required both for technical specification and project implementation.

September 1990

5.1.9 Provision of digital exchanges for Angola Development Programme (1990-2000).



Estimated Costs
Total : USD 70.0 million
Foreign : USD 52.0 million
Local : USD 18.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 18.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 52.0 million

Executing Agency:
Empresa Nacional de Telecomunicacoes (ENATEL)
Start : 1990
Duration: 10 years

Objectives : Provision of digital telephone switching equipment for national, regional and international transit exchanges in Malanje, Huambo, Benguela, Lubango in order to provide high quality switching capacity along the PANATEL trunk network.

Description : Provision of digital exchange equipment and outside plant (local network) in each of the following national centres.

	Estimated Exchange lines	Estimated Trunks	Estimated costs USD in million
Luanda	20.000	247	14.0
Malanje	6.000	100	4.0
Cabinda	3.000	8	3.0
Huambo *	15.000	110	8.0
Kuito *	3.500	23	3.5
Benguela *	13.500	80	9.0
Lubango	8.000	74	5.0
Ondjiva	1.000	10	1.5
Luena *	1.000	6	1.5
Namibe	3.000	18	2.5
Vije			

The project consists of the following components:

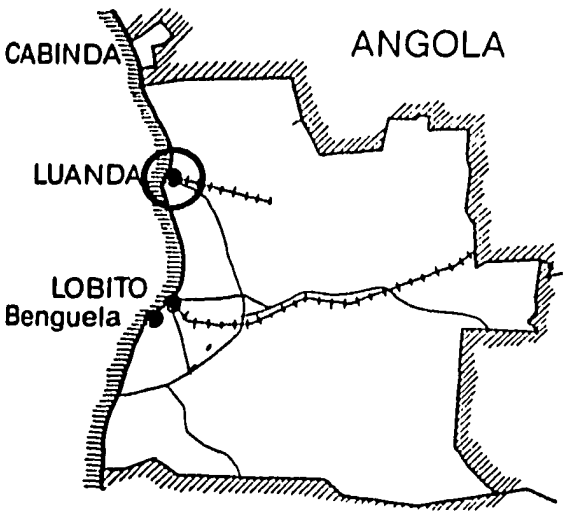
- Technical assistance for drawing up of the detailed technical specification;
- Switching, power and Test equipment; and,
- Installation commissioning and training;

ENATEL will cover costs towards some civil works, buildings and complementary projects

Status : Financing is required for supply, installation and commissioning of exchanges.

September 1990

5.1.10 Provision of Domestic Satellite Network ANGOSAT for Angola



Estimated Costs
Total : USD 70.0 million
Foreign : USD 65.0 million
Local : USD 5.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 5.0 million

Funding Under Negotiation
Total : USD 37.0 million

Financing Gap:
Total : USD 28.0 million

Executing Agency:
Empresa Nacional de Telecomunicacoes
Start : 1990
Duration: Ten years

Objectives : Expansion of international, regional and national trunk telecommunication transmission systems which will enable Angola to improve its PANAFTEL and regional routes,by provision of domestic satellite and terrestrial links.

Description : Domestic Satellite System (ANGOSAT):

This part of the project involves the provision of dedicated earth stations to national provincial centres initially (1990-1995) to Luanda, Luena, Huila, Lubango and establish circuits between these locations.

Terrestrial Links:

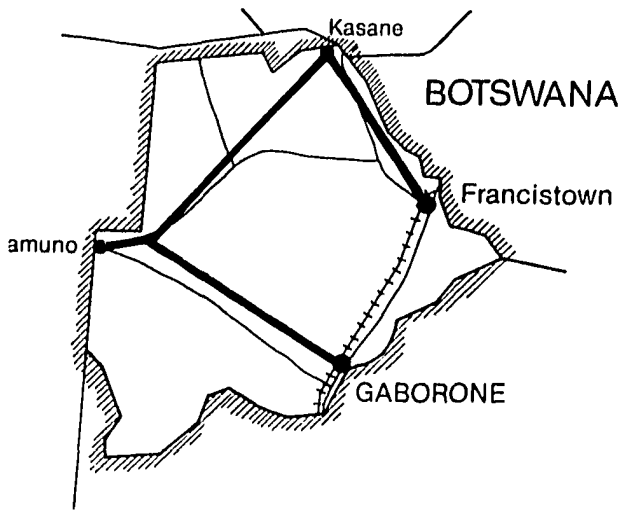
Feeder terrestrial links from the national centres of Luena to Zambig, Benguela-Lubango, Lubamgo-Namibe, Huambo-Kuito, Vige-Banza Congo, Mavinga-Huambo, Malanje-Saurimo, Saurimo-Luena, Ndjiva-to Namibia for the provision of interconnection to the SADCC region, and possible provision of submarine cable along the Angolan Coastline.

Status : Negotiations are underway with ADB for USD 37.0 million.

Financing is required for implementation and detailed specification of microwave terrestrial requirements.

September 1990

5.2.3 Expansion of the Microwave Trunk Network, Botswana



Estimated Costs
Total : USD 30.5 million
Foreign : USD 28.0 million
Local : USD 2.5 million

Funding Secured
Foreign : USD 13.0 million
Local : USD 2.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 15.0 million

Executing Agency:
Botswana Telecommunications Corporation, Botswana
Start : 1988
Duration: 6 Years

Objetives : To extend the Microwave Trunk Network with connections to neighbouring SADCC Countries.

Progress : Botswana has completed a microwave link between Francistown and Bulawayo. The country's telecommunications are undergoing a major National Main Development Programme which includes a new International Telephone Switching Centre (ITSC) in Gaborone.
The project comprises:

- Phase I (1987-1989)
  Expansion of the country's microwave trunk network with Francistown as Pilot Point stretching to Kasane via Tutume/Nata and Pandamatenga. This will provide direct regional connection to Zambia and Angola.

- Phase II (1988-1991)
  Extension of the microwave link from Kasane to Mamuno via Maun and Ghanzi to form the main backbone for future regional connection to Namibia.

- Phase III (1990-1993)
  Extension of the Microwave Trunk Network to the west and south of the country, between Ghanzi and Gaborone, via Jwaneng to complete a ring network and provide a route for the PANAFTEL link to Namibia. The project will integrate the Southern Kalahari Region into the national network as well as providing ring diversity for Botswana's switching network.

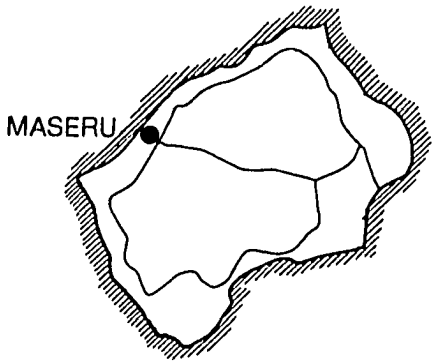
The provision of complementary telephone exchange equipment will be handled by the Botswana Telecommunications Corporation.

Norad is financing phase I and part of phase II (extension from NATA to MAUN) completion of this section of the project is expected by end of 1990.

Status : NORAD has provided USD 13.0 million for the first part; Financing is required for preparation of specification and implementation of phase III and part of phase II from Maun through Ghanzi to Mamuno through Jwaneng to Ghanzi.

5.3.2 Rural Communication System, Lesotho

LESOTHO



Estimated Costs
Total : USD 10.0 million
Foreign : USD 9.8 million
Local : USD 0.2 million

Funding Secured
Foreign : USD 0.1 million
Local : USD 0.2 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 9.7 million

Executing Agency:
Lesotho Post and Telecommunication Corporation
Start : 1989
Duration: 3 Years

Objective : 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 scheudles of the various activities leading to implementation to be initiated in 1988. The project also includes training fellowships for technicians.

Progress: The microwave backbone was installed and commissioned in July 1985 to provide telephone services to the district centres. But some scattered rural villages are not connected due to the mountainous nature of the terrain. It is very expensive to construct open wire carrier routes to these rural areas.

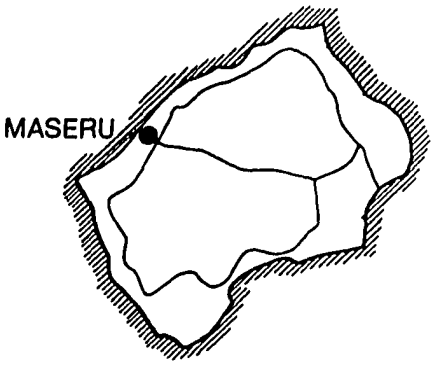
The rural system which is expected to be implemented consists of :

- 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); and
- remote stations located at the subscribers' premises in remote areas where there is no commercial power and in some cases difficult to reach by vehcile.

Status : Canadian International Development Agency has provided financing for the feasibility study under the auspices of the SATCC Technical Services Fund. Telletra of Spain has provided the technical and commercial offer for implementation. Additional funding is being sought.

5.3.3 Rural Automatic Telephone Exchanges, Lesotho

LESOTHO



Estimated Costs
Total : USD 3.0 million
Foreign : USD 2.5 million
Local : USD 0.5 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.5 million

Executing Agency:
Lesotho Post and Telecommunications Corporation
Start : 1990
Duration: 1 Year

Objective : Provision of automatic rural telephone exchanges located at various rural centres in Lesotho.

Description: The project involves the provision of rural telephone exchange equipment to rural localities having a potential capacity of between 20 and 200 subscribers. Approximately 100 sites will be equipped throughout the country.

The project will provide :

- Solar panel power sources;
- Distribution frames and subscriber connections;
- Equipment installation and commissioning;
- Spare parts and
- Training of staff.

Lesotho Telecommunications Corporation will provide housing for the equipment.

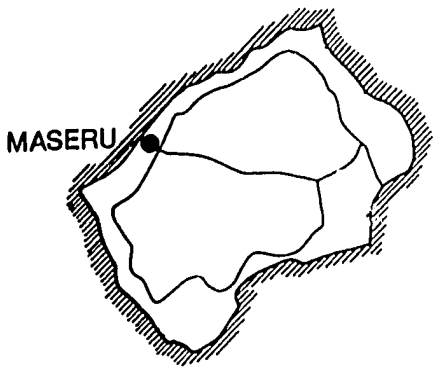
Detailed technical requirements are yet to be defined. This project should be co-ordinated with project 5.3.2., Rural Telecommunications Study for Lesotho.

Status : Financing is required for project implementation.

September 1990

5.3.4 Fundamental Master Plan and Planning Unit, Lesotho

LESOTHO



Estimated Costs
Total : USD 0.4 million
Foreign : USD 0.3 million
Local : USD 0.1 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.1 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.3 million

Executing Agency:
Lesotho Telecommunications Corporation
Start : 1990
Duration: 1 year

Objectives: The preparation of a Long Range Master Plan, 1989-2009, for the development of the national telecommunications infrastructure, and the setting up of a Fundamental Planning Unit for supporting future network and corporate planning activities.

Description: (1) Preparation of a switching network review, including:
- interim planning proposals for the period up to 1996, in order to recommend solutions for the most urgent outstanding expansion requirements.
- an integrated concurrant fundamental plan consisting of a medium and long range national demand study.
- preparation of a national switching and transmission plan covering the period to year 2009.

(2) Identify, define, configure and appraise expansion projects in order to meet:
- the technical and economic guidelines of the national network plan.
- the financial and economic criteria appropriate to the commercial requirements of the LTC and its obligations to the national social development.

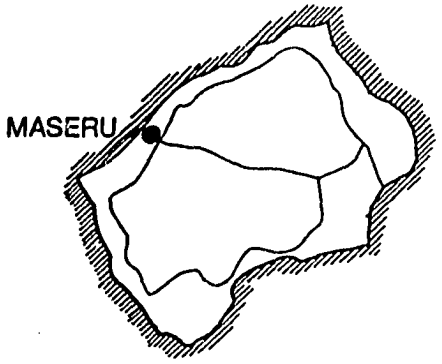
(3) Set up a Fundamental Planning Unit to undertake the following functions:
- demand and traffic analysis,
- network development strategy,
- economic analysis, and
- investment plan preparation and project identification.

Status : Financing for the Technical assistance is sought in order to proceed with the study.

September 1990

5.3.5 Provision of New ITSC and Digitalization of National Exchanges, Lesotho

LESOTHO



Estimated Costs
Total : USD 7.1 million
Foreign : USD 6.6 million
Local : USD 0.5 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 6.6 million

Executing Agency:
Lesotho Telecommunications Corporation
Start : 1990
Duration: 4 years

Objectives : Provision of new digital International Telephone Switching Centre to replace the existing combined Local / Exchange / National Transit / International exchange and the replacement of some manual and electromechanical exchanges with digital systems in order to extend ISD facilities.

Description:

- New Digital International Telephone Switching Centre.
- The current ITSC (AXE10) 4096 local lines and 248 International Trunks, is a combined International Exchange, National transit and local exchanges for the Maseru area. Due to the hybrid functions of the switch problems affecting the entire network are more often experienced when new software facilities are introduced and hence the proposal for a new and separate stand alone ITSC to cater solely for international traffic with capacity of 500 International Trunks
- Digitalization of Manual and Electromechanical Exchanges.
- Provision and installation of digital exchanges and associated trunk transmission equipment to replace the manual and obsolete electromechanical exchanges as follows:

SITE	EXISTING TYPE	PLANNED CAPACITY (LINES)
Qacha's Nek	Electromechanical	640
Mapoteng	"	400
Mokho Hong	"	640
Morija	"	500
Van Royens Gate	"	400
Kukhune	Manual	640
Mantsonyane	"	400
Marakabei	"	256
Mpharane	"	180
Peka	"	500
Semonkong	"	256
Sekake	"	256
Sehlabathebe	"	180

The project components comprise:

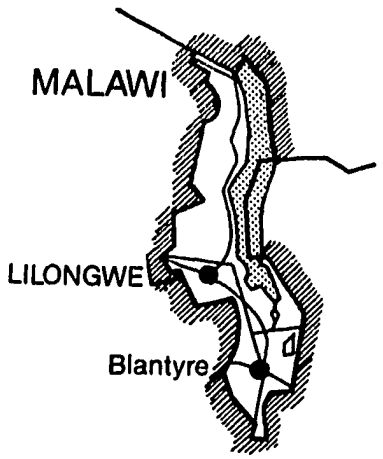
(i) Switching and associated trunk transmission equipment, plus associated power and test equipment.

(ii) Installation, commissioning and training.

Status : Financing is required for both detailed definition and implementation of the project.

September 1990

5.4.3 Supply of Digital Equip. for the Expansion of Tele. Exchngs in Blantyre-Lilongwe-Zomba



Estimated Costs
Total : USD 20.6 million
Foreign : USD 19.4 million
Local : USD 1.2 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 1.2 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 19.4 million

Executing Agency:
Malawi Dept. of Posts and Telecommunications
Start : 1990
Duration: 2 years

Objectives : Digitilization and expansion ofthe national telephone exchange centers comprising Blantyre, Lilongwe and Zomba in order to provide high quality switching capacity to the national, regional and international traffic along the PANAFTEL trunk network.

Progress : Provision of digital exchange equipment in each of the following national centres:

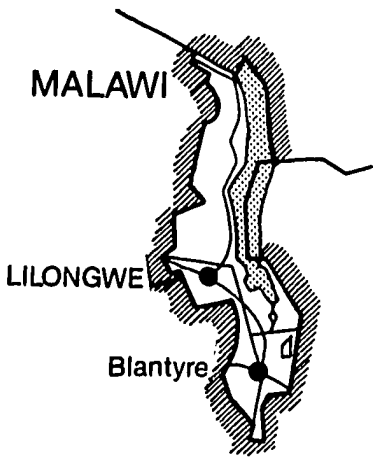
	Estimated Exchange Lines	Estimated Costs USD in Millions Total	Foreign	Local
PHASE I 1987-1990				
- Blantyre Implementation period 1989 - 1990	10.000	3.4	3.3	0.1
- Lilongwe Implementation period 1988 - 1990	9.000	7.6	7.4	0.2
- Zomba Implementation period 1988 - 1990	5.000	2.5	2.3	0.2
PHASE II 1990-1996				
- Blantyre	10.000	4.0	3.6	0.4
- Lilongwe	9.000	3.1	2.79	0.31

The project components comprise :
(i) Switching, PCM line, equipment, plus associated power and test equipment, to cover expansion at the existing locations.
(ii) Installation, commissioning and training.
The Malawi Post Office will cover the costs of buildings and complementary projects.

Status : Financing is sought for implementation of the exchanges.

September 1990

5.4.4 Expansion of Telecommunications Training Centre, MPO, Malawi



Estimated Costs
Total : USD 5.0 million
Foreign : USD 1.0 million
Local : USD 4.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 4.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.0 million

Executing Agency:
Department of Posts and Telecommunications, MALAWI
Start : 1990
Duration: 2 Years

Objectives : Provision of basic and medium level training facilities to meet Malawi's Manpower requirements for its expanding telecommunications network infrastructure.

Description: During the past few years the total basic level training needs have moe than doubled. The existing buildings for classroom and equipment accommodation has been severely constrained and is insufficient.

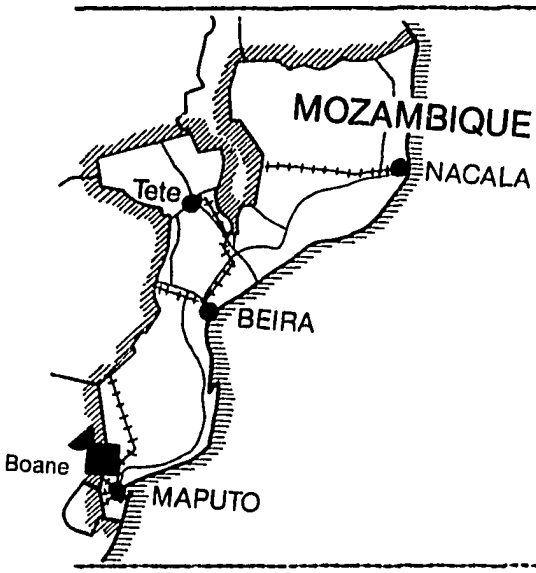
The project involves:

- Construction of buildings and associated accommodation and facilities for a maximum of 60 trainees.
- Training aids and test equipment for external plant, subscribers apparatus, switching and transmission maintenance.
- Staff training and fellowships in advanced telecommunicatio technologies.
- Malawi Department of Posts and Telecommunication is undertaking the construction of the building all the local costs of the project at a total of USD 4.0 millions.

Status : Financing is required for procurement of training aids, test equipment, staff training and provision of fellowships.

September 1990

5.5.1 National/Regional Satellite Communication System of Mozambique



Estimated Costs
Total : USD 20.6 million
Foreign : USD 20.1 million
Local : USD 0.5 million

Funding Secured
Foreign : USD 19.1 million
Local : USD 0.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.0 million

Executing Agency:
Telecommunications of Mozambique
Start : 1984
Duration: 1 Year

Objectives : The project seeks to expand the international, regional and national trunk telecommunications transmission systems which will enable Mozambique to improve its PANAFTEL and regional connectivity.

Progress : Part 1. Basic domestic satellite system in Mozambique.

Provision 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 on a pre-emptible basis.

Part 2. Dual polarisation for the Boane A antenna.

Retrofit of Boane A antenna to comply with the INTELSAT mandatory specifications for dual polarization. Due to cost implications a new revised SIDA was proposed for the Boane antenna.

Part 3. Additional domestic antenna Earth Stations.

Provision of two earth stations with small diameter antennas in Lichinga and Pemba, to be integrated in the basic system of part 1.
A further study is proposed to cover the rest of the domestic satellite requirements.

Status : Part 1

Financing was secured from France (13.2 million), Kuwait (4.3 million), local funds (8.4 million). The domestic satellite earth stations in Maputo, Beira and Nampula were comission in August 1986.

Part 2

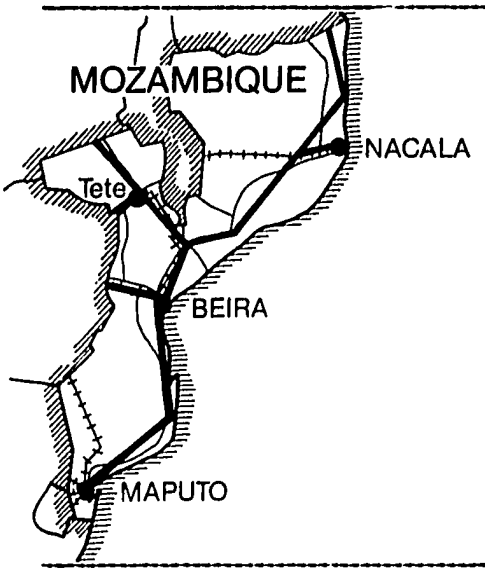
Financing was secured from CIDA (USD 2.2 millions). The project was completed late 1987.

Part 3

Feasibility study was undertaken by HN Engineering of Canada under the auspices of the SATCC Technical Services Fund. CIDA (Canada) will be financing the domestic satellite stations at Lichinga and Pemba
France is financing the study for the provision of domestic satellite stations to cover the rest of the country.

September 1990

5.5.3 National Telecoms Development Proj.with Connections to Neigh bouring Countries (Reg. Part)



Estimated Costs
Total : USD 347.7 million
Foreign : USD 307.9 million
Local : USD 39.8 million

Funding Secured
Foreign : USD 99.0 million
Local : USD 39.8 million

Funding Under Negotiation
Total : USD 26.2 million

Financing Gap:
Total : USD182.7 million

Executing Agency:
Telecomunicacoes de Mozambique

Start : 1985
Duration: 7 Years

Objectives : Expansion of the telecommunications system up to 1995 in order to provide switching and transmission capability to SADCC countries.

Progress : The regional part of the programme consists of:

Phase I

Microwave backbone systems Maputo / Xai-Xai / Chokwe, Beira / Chimoio, Nampula / Nacala; International switching centre of Maputo and Beira;
Switching systems in Maputo, Beira, Nampula, Nacala, Chimoio with buildings and junctions.

As a separate project, a new telex exchange at Beira will be implemented so as to match the commissioning of the 1st phase of the present Telecommunication Development Project.

Phase II and III

The remaining part of the microwave backbone network, i.e. Xai-Xai / Massinga, Caia / Quelimane, Tete / Ulongwe, the possible provision of Submarine Cable System along the Mozambique Coastline, and the international extension Tete / Blantyre, Chimoio / Mutare, tete / Katete, Nampula / Mtwara.

A number of plants of the National Telecommunications Development Plan, which are related to the Beira Corridor, have been extracted from the present project and grouped under the Project 5.5.5. Telecommunication Projects in Beira Port Transport System Development Plan.

Study Surveys, Engineering design and technical specifications are yet to be defined for phase II and III before proceeding to the implementation stage.

Status : Phase I

Financing for the national and regional parts of the project have produced agreements with:

- Italy	USD 55.2	million, loan and grant
- ADB	USD 15.9	million, loan
- BADEA	USD 8.1	million, loan
- SWEDEN	USD 13.8	million, loan and grant
- GERMANY (FRG)	USD 2.2	million, loan
- NORWAY	USD 6.0	million, grant

Implementation of projects for provision of equipment in Phase I is at various stages of completion.

Negotiations for a further USD 24 million are ongoing with Italy part of which will provide financing for the extension of microwave link from Xai-Xai to Massinga.

Contract for the provision of a stand alone telex exchange in Beia has not been finalised with Germany (FRG) pending final agreement on the configuration of the switch.

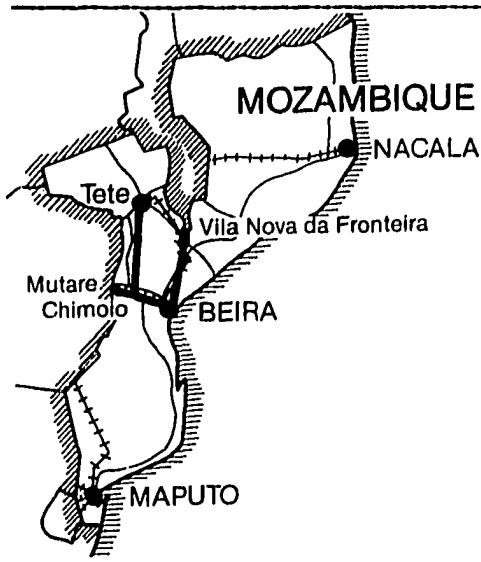
Phase II and Phase III (1987-1994)

Financing is being sought for the implementation of this part of the project. CIDA under the SADCC Technical Services Fund is interested in carrying out a study to provide telecommunications Services to towns and locations bordering Zimbabwe by using some of the basic infrastructure in Zimbabwe.

Negotiations with KTW are on-going for Technical Assistance to undertake the feasibility study for the provision of Submarine Cable System along the Mozambican Coastline and implementation of the projects emanating from the study.
Additional funding sought.

September 1990

5.5.5 Telecommunications Projects in Beira Port Transport System Development Plan



Estimated Costs
Total : USD 20.1 million
Foreign : USD 18.1 million
Local : USD 2.0 million

Funding Secured
Foreign : USD 0.9 million
Local : USD 2.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 17.2 million

Executing Agency:
Telecomunicacoes de Mozambique

Start : 1986
Duration: 10 Years

Objectives : To ensure international quality standard telecommunications to/from Beira for the correct operation of the port, railway and roads belonging to the Beira Port Transport System.

Progress : The National Telecommunication Development Plan for Mozambique contains all the projects of the telecommunication system of the Corridor of Beira. A number of these projects are ongoing as specified in the SATCC Projects 5.5.1 and 5.5.3.

The following projects will complete the System, ensuring also a proper operation of the plants.

	Estimated Cost USD million		Former Ref No in SATCC Programme
	Total	Foreign	
- Technical Assistance to TDM	0.6	0.6	-
- Spur Routes Beira-Machipanda, Zimbabwe Corridor	3.7	3.3	5.5.3
- Crossborder section of the link Beira-Chimoio-Mutare (Zimbabwe)	0.8	0.7	5.5.3
- Digital Microwave link Beira-Caia-Tete	8.7	7.8	5.5.3
- Spur Routes Beira-Vila Nova da Fronteira, Malawi Corridor	6.3	5.7	5.5.3
TOTAL	20.1	18.1	

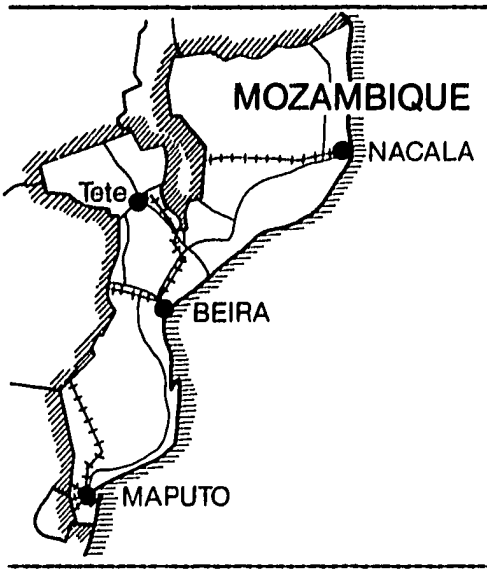
For details, see Beira Port Transport System 10-Year Development Plan.

Technical Assistance to TDM is being provided by SIDA.

Status : Italy is providing support in financing the implementation of the Crossborder Section of the link Beira-Chimoio-Mutare (Zimbabwe). Financing is sought for the implementation of the other project items.

September 1990

5.5.6 Maritime Radio Communication Project, Mozambique



Estimated Costs
Total : USD 2.5 million
Foreign : USD 2.3 million
Local : USD 0.2 million

Funding Secured
Foreign : USD 0.3 million
Local : USD 0.2 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.0 million

Executing Agency:
Telecomunicacoes de Mozambique

Start : 1987
Duration: 5 Years

Objectives : The project aims at establishment of communications for the operation of the major ports Mozambique (Maputo, Beira and Nacala) and for the users located in the neighbouring countires, i.e.:

- short and long distance ship to shore communication
- port to port communication
- access to the public network
- co-ordination with the existing HF stations of TDM

Progress : The project comprises:

- 1 first category station for long distance connections;
- 2 second category stations for medium and short distance connections;
- 1 maintenance centre;
- on-board transceivers for 4 ships.

Each of the stations will be essentially formed by an HF transmitting centre (equipped with 2 HF KW transmitter) and a receiving centre (equipped with 3 HF receivers and 1 UHF 400 W transceiver). The stations will be equipped with proper antenna systems and will provide the following services:

- commercial telephony, telex, facsmile;
- marine services such as notice for ships, weather forecast, etc.

As a first step TDM is requesting consultancy services for:

- evaluation of the project in respect of the requirements and considering the existing facilities;
- preparation of the tender documents and evaluation of the proposals;
- supervision of the implementation of the contract;
- training;
- technical assistance.

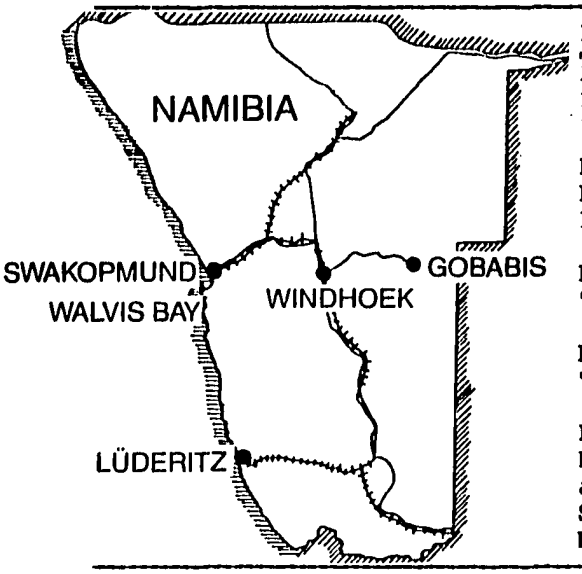
Status : NORAD had made available NOK 300 000.00 for the consultancy services to undertake an assessment of the equipment already stored in Maputo.
The consultancy team from Norway has already visited the sites and the equipment has been installed.

Consultel of Italy is undertaking a study for a more detailed project evaluation and description for implementation.

Financing is sought for the projects emanating from the study.

September 1990

5.6.1 Extension of International Telecommunications Services, Namibia



Estimated Costs
Total : USD 13.5 million
Foreign : USD 12.5 million
Local : USD 1.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 1.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 12.5 million

Executing Agency:
Namibia Department of Posts and Telecommunications
Start : 1990
Duration: 2 years

Objective : To improve international connectivity, diversity, and reduction of level of reliance and financial out payment for transit through South Africa for international services.

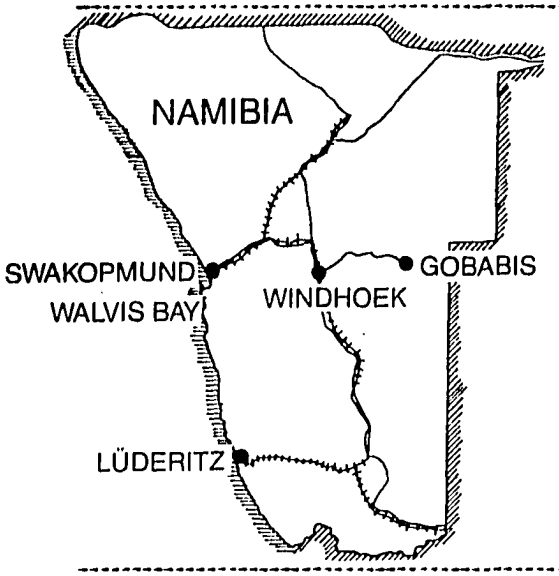
Description: All international services to and from Namibia are switched through International Gateway Exchange and Earth Stations in Johannesburg and Cape Town via the Windhoek-Upington Microwave link.
The project consists of the provision of Technical Assistance and consulting services for feasibility, detailed technical specification for the implementation of the following:

- Standard A Earth Station in Windhoek equipped with IDR/DOME equipment and SCPC circuits in certain relations facing the intelsat 335.50 Satellite.
- Digital backhaul link from EIS to TISC.
- International telephone Gateway Exchanged in Windhoek with CCITT No 5, R2 software.
- Internationaltelex Gateway exchange in Windhoek.

Status : Financing is required for project implementation.

September 1990

5.6.2 Telecommunications Master Plan Study, Namibia



Estimated Costs
Total : USD 1.8 million
Foreign : USD 1.7 million
Local : USD 0.1 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 1.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.7 million

Executing Agency:
Namibia Department of Posts and Telecommunications
Start : 1990
Duration: 1 year

Objective : The preparation of a long Range Master Plan (1991-2011) for the development of the national telecommunications infrastructure and the setting up of the Planning Unit.

Description : (1) Preparation of a Master Plan including:

- Fundamental Plans for switching, numbering, routing, signalling, synchronisation and transmission;
- Traffic, tariffs and subscriber forecasts;

Development and Investment Plans for short, medium and long term.
manpower and training requirements.
(2) Identify and define expansion projects to meet:
technical and economic guidelines of the national network.
the financial and economic viability of the Department of Posts and Telecommunication.
(3) Set up Fundamental Planning Unit to undertake the periodic updating of the following:

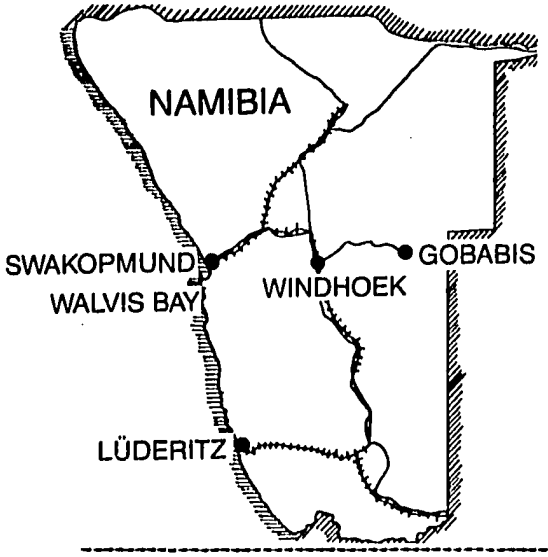
- demand, traffic and economic analyses,
- investment plans preparation and project identification.

(4) Study the economic, financial and management viability of the incorporation of the posts and telecommunications services.

Status : Financing is required to proceed with the project.

September 1990

5.6.3 Extension of Backbone Trunk Network, Namibia



Estimated Costs
Total : USD 19.5 million
Foreign : USD 17.5 million
Local : USD 2.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 2.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 17.5 million

Executing Agency:
Namibia Department of Posts and Telecommunications
Start : 1990
Duration: 4 years

Objective : To extend large capacity digital transmission for interconnection to the north and eastof the country with interconnection to PANAFTEL links to the reighboring countries and provision of automatic switching and ISD facilities for national, regional and international services.

Description : The project involves the :

(a) supply, installation and commissioning of equipment identified through the detailed definition and determination of the following:

- Digital trunk connection to Botswana through Gobabis with as sociated spares and telephone exchangey;
- digital link Windhoek-Tsumb-Oshakati with spares to Bushmanland and terrestrial interconnection to Angola;
- Associated digital telephone exchanges at Oshakati, Ondangwa, Ongwediva, Tsumeb, Rundu, Katima Mulilo to replace existing Manual exchanges.

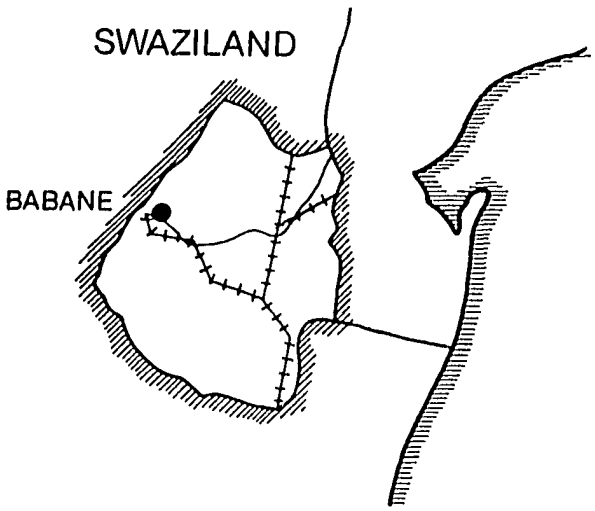
(b) Technical assistance for drawing up detailed technical requirements and specification for above project elements.

Namibia Department of Posts and Telecommunications is in the process of providing optical fibre cable for the Tsumb-Oshakati link with associated digital exchanges and complementary buildings and civil links.

Status : Financing is required for implementation of the other project elements.

September 1990

5.7.5 Extension of Nat. Switching Centre and Associated Network Digitalization, SWAZILAND



Estimated Costs
Total : USD 12.0 million
Foreign : USD 10.0 million
Local : USD 2.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 2.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 10.0 million

Executing Agency:
Swaziland Posts and
Telecommunication Corporation
Start : 1990
Duration: 3 years

Objective : Provision and digitalization of new regional / national transit switching centres and associated remote exchanges with ISD facilities to replace the present trunk switch which is congested and obsolete.

Description: The project involves the supply, installation and commissioning of digital switching and associated trunk transmission equipment as follows:

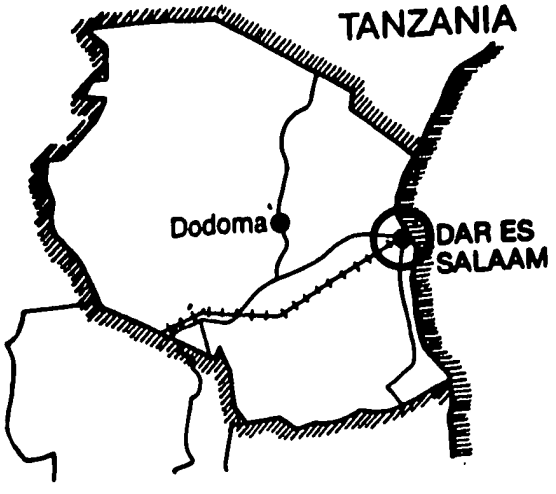
Switching	Estimated Exchange lines	Type	Estimated Cost USD millions
Mbabane	2048	Transit/Local	6.5
Bhunya	256	Local	
Malkerns	512	Local	
Manzini	1024	Transit/Local	
Ngwenya	512	Local	
- Radio and Transmission Six links, 2 MBits and 34 MBits			1.0
- Cables for local network			1.7
- Consultancy and Logistics			0.8

Detailed survey of requirements and technical specification is necessary before proceeding to the implementation stage.

Status : Funding is being sought.

September 1990

5.8.2 Extension of ITSC Capacity, and Associated Telephone Exchanges Dar es Salaam, Tanzania



Estimated Costs
Total : USD 4.7 million
Foreign : USD 4.5 million
Local : USD 0.2 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.2 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 4.5 million

Executing Agency:
Tanzania Posts & Telecommunications
Start : 1989
Duration: 3 Years

Objective : Provision of a new digital international telephone Switching Centre, national transit centre and associated replacement, rehabilitation and expansion of telephone exchanges and local networks in Dar es Salaam to augment or replace the existing cross-bar exchange in order to:

(i) cater for continued growth of international, regional and national traffic and improve the grade of service available to the international callers and the traffic handling capability of the network.

(ii) allow expansion of PANAFTEL terrestrial circuit groups with neighbouring SADCC countries and improve calling facilities through the introduction of international subscriber dialing (ISD).

Progress : The Dar es Salaam telecommunication Network which constitute 43% of the total national network consists of old obsolete step-by-step and crossbar equipment which create traffic congestion and is not capable of expansion to meet future demand due to non-availability of spares for maintenance and extension.

Tanzania Posts and Telecommunications Corporation proposes as a first priority to extend and rehabilitate the ITSC, national transit and three local exchanges in Dar es Salaam and associated local network.

The first phase of the project involves the supply, installation and commissioning of digital exchange and associated power and transmission equipment as follows:-

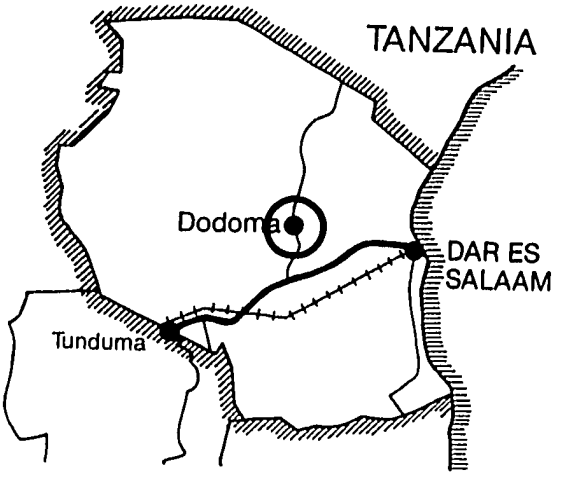
	Existing capacity	Estimated trunks	Lines
- Exchange:			
ITSC	150 (Crossbar)	2,000	-
National/Local Transit		3,000	2,000
3 x Local Exch.	4,600	2,490	8,000
- External Plant (cable etc.,)			240,000 p/K

However a detailed survey and technical specification for the whole Dar es Salaam exchange requirements including local network is necessary before proceeding to the implementation stage.

Status : Funding is being sought.

September 1990

5.8.4 New Transit Digital Telephone and Telex Exchanges for Dodoma Tanzania



Estimated Costs
Total : USD 3.1 million
Foreign : USD 2.4 million
Local : USD 0.7 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.7 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.4 million

Executing Agency:
Tanzania Posts and Telecommunications Corporation
Start : 1990
Duration: 2 Years

Objectives : The project is to provide new transit telephone and telex exchanges in Dodoma for routing international, national and local traffic. Dodoma is on the intersection of the PANAFTEL microwave network in Tanzania.

Description: PART I, Telephone Exchange :
At present the existing switch in Dodoma handles national traffic. The proposed exchange would be required to switch international traffic as well as national traffic at the important intersection of the PANAFTEL network. The sizing ofthe exchange is partly dependent on the implementation of the Dar es Salaam to Dodoma microwave system, Project 5.7.5. The exchange has to interconnect with the new international exchange in Dar es Salaam, Project 5.7.2.

The new digital telephone exchange will be equipped as follows :

- 2000 trunks;
- 6000 local lines;
- 18 position auto-manual board;
- a rectifier and battery plant sized up to the proposed switch.

Air conditioned accommodation and standby power would be provided by the Tanzania Posts and Telecommunications Corporation.

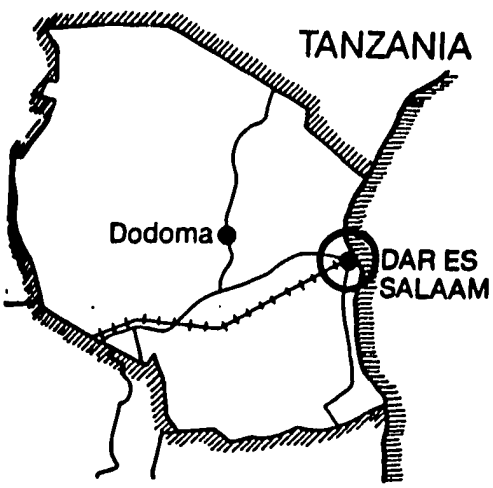
PART II, Telex Exchange :
The proposed new switch will be used initially to off load approximately 30-40% of the total subscribers from the existing single ESK telex switch in Dar es Salaam.

The new switch will serve subscribers in Dodoma, Mwanza, Arusha, Mbeya and also be capable of routing regional and international telex messages on the PANAFTEL routes through Dodoma.

The project will include supply and installation, all relevant spares and test equipment, and training for operations and maintenance staff.

Status : Financing is required for implementation of the project.

5.8.5 Digital Microwave Link Dar - Dodoma - Zanzibar and Exp. of Multiplex Equip. at Dodoma



Estimated Costs
Total : USD 20.0 million
Foreign : USD 17.7 million
Local : USD 2.3 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 2.3 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 17.7 million

Executing Agency:
Tanzania Posts and Telecommunications Corporation
Start : 1989
Duration: 2 Years

Objectives : The project comprises:

- the provision of a new digital radio system to parallel the existing analogue microwave system between Dar Es Salam and Dodoma on the PANAFTEL route, and extension of the link from Dar es Salaam to Zanzibar and Pemba.

- the study to determine the traffic, equipment and financial requirements necessary for the expansion of the multiplex circuits at Dodoma.

Progress : Part I

The projects involve the provision, installation and commissioning of a new digital microwave system equipped initially with one bearer operating at 140 M bits. The equipment to be supplied is to include:

- radio and multiplex equipment;
- antenna systems;
- towers at the new sites;
- power systems (solar power systems are proposed at the new repeater sites).

The civil works including site preparations, buildings and road construction would be provided locally.

Part II

Dodoma is at the intersection of four major microwave trunk routes of the PANAFTEL network:

- the trunk from Zambia and South Western Tanzania;
- the trunk from Tabora, Mwanza and Western Tanzania with planned extensions to Rwanda, Burundi and Uganda;
- the trunk to the east through Morogora to Dar Es Salaam.

The microwave systems are all designed for 960 channel capacity but, except for the system to Dar Es Salaam, are currently not fully equipped. Congestion is experienced on most of these routes. Traffic is expected to increase as Dodoma further develops as a regional centre.

This part of the project involves a study:

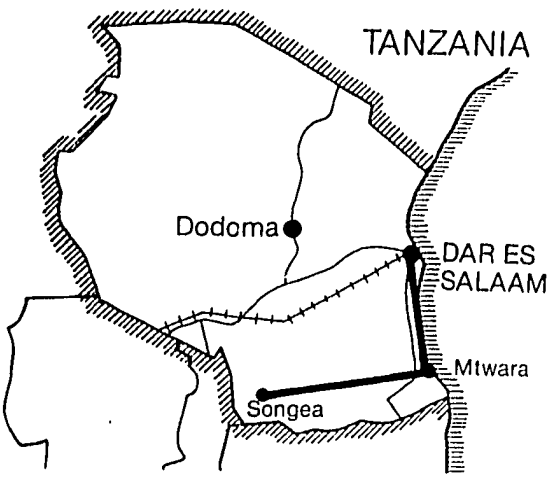
- to determine the existing and projected traffic;
- to determine the equipmenttypes currently in use on these microwave systems;
- to define an overall multiplex plan;
- to determine the availability and cost of suitable multiplex equipment;
- to work out an implementation plan.

Tanzania Posts and Telecommunications Corporation has undertaken a survey of the route in Part I and a report is in preparation. The contractor will be required to verify the results of the route survey before project implementation.

Status : Telletra has undertaken a survey of requirements for the provision and instalation of equipment in collaboration with Tanzania Posts and Telecommunications Corporation. Funding is being sought.

September 1990

5.8.7 Provision of Digital Microwave Link Dar es Salaam-Mtwara- Songea and Exchange at Songea



Estimated Costs
Total : USD 30.0 million
Foreign : USD 30.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 30.0 million

Executing Agency:
Tanzania Posts and Telecommunications Corporation
Start : 1990
Duration: 3 Years

Objective : The project aims to provide telecommunication services for PANAFTEL link along the coast to Mozambique and into the Southern Corridor consisting of:

PART I

- a new digital mivrowave link from Dar es Salaam South along the coast to the port of Mtwara.

PART II

- a new digital microwave link from the port of Mtwara to Songea into the PANAFTEL network; and

- a combined digital transit and local exchange at Songea for traffic routing from this new link into the PANAFTEL network.

Descriptio : PART I

Telephone trunking between the Mtwara area and Dar-Es-Salaam is presently provided by 120 channel tropocatter system. Songea 500 Km to the east of Mtwara will be connected to the North-South network by a 2 ghz 960 channel microwave system.

PART II

A new digital exchange is proposed for Songea to replace the existing manual exchange. Transmission systems from other comunities in the area centre on Songea and hence the switch be equipped for both transit and local traffic in order for the Mowara-Songea Link to interconnect with the North-South PANAFTEL system.

The proposal is to provide a new digital microwave system to link Dar-Es-Salaam, Mtwara and Sogea and thence from Songea to the main Noth-South PANAFTEL system, and also from part of the PANAFTEL network to interlink with Mozambique.

A survey of the proposed microwave routes with the analasys has been completed by the Tanzania Posts and Telecommunications Corporation. A traffic analysis for the System has been conducted as part of the national traffic survey. The proposal is for 34 Mbit digital microwave system.

Status : PART I

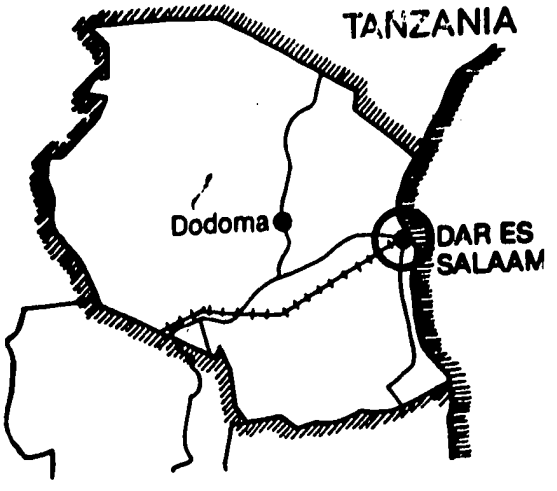
Financing is being sought for the propagation study survey for the Dar es Salaam - Mtwara Link and the envisaged projects wich will be developed from the study.

PART II

Financing is required to provide a digital exchange at Songea and the interconnecting Mtwara-Songea 34 MBit digital microwave link.

September 1990

5.8.8 Provision of Digital Exchanges, Tanzania.



Estimated Costs
Total : USD 44.1 million
Foreign : USD 40.5 million
Local : USD 3.6 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 3.6 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 40.5 million

Executing Agency:
Tanzania Posts and Telecommunication Corporation
Start : 1990
Duration: 3 years

Objective : Provision of digital exchanges to extend ISD facilities for national, regional and international traffic.

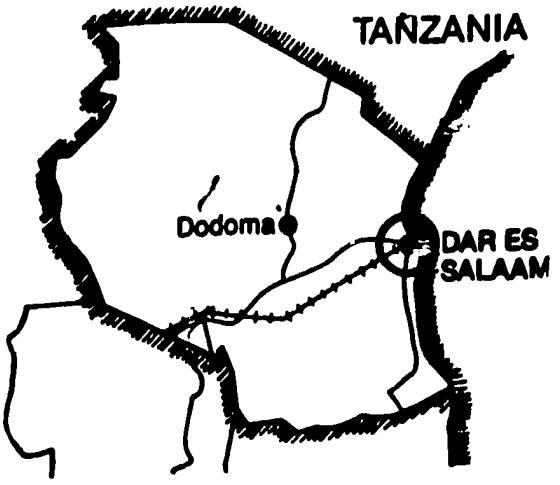
Description : The existing switching network in Tanzania consists of old strowger and cross-bar analogue systems which in most cases is absolete and difficult to find spares for maintenance and repairs. It comprises of 181 analogue local exchanges, of which 144 are manual and 37 are automatic. The total installed capacity is 78,000 lines with about 60,000 connected subscribes. There are 74,000 waiting applicants due in most cases to lack of line plant.

The project consists of the extension, rehabilitation of outside plant and provision of new digital exchanges with automatic ISD facilities to the following Tertiary Centres:

Exchange	Planned Capacity	Estimated Costs in millions USD Local	Foreign
Zanzibar	6,400	0.6	6.3
Arusha	7,200	0.6	6.3
Dodoma	8,700	0.2	7.1
Mwanza	13,800	1.2	11.6
Mbeniya	6,000	0.5	5.8
Morogoro	3,200	0.5	3.4

Status : Financing is required for drawing up technical specification and project implementation.

5.8.9 Rehabilitation of Trunk PANAFTEL Links, Tanzania.



Estimated Costs
Total : USD 20.9 million
Foreign : USD 18.9 million
Local : USD 2.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 2.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 18.9 million

Executing Agency:
Tanzania Posts and
Telecommunications Corporation
Start : 1990
Duration: 3 years

Objective : Extension and rehabilitation of the digital backbone PANAFTEL links to provide high quality traffic to national, regional and international centres.

Description : Performed of the existing backbone analogue transmission network is very poor and congested due to aging of equipment, under-dimensioning and non-availability of spares for maintenance and operations.

The project consists of supply, installation and commissioning of equipment for rehabilitation and extension programme of the North-South and East-West trunk network as follows:

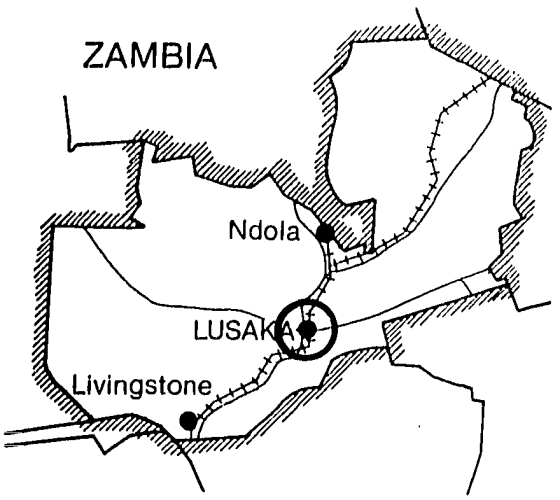
	Cost Estimate Forex USD millions
- 140 MBITS digital links Dodoma-Arusha-Moshi to the north;	4.2
- 140 MBITS digital links Dodoma-MBEYA-Sumbawanga to the South;	6.9
- 140 MBITS digital links Dodoma-Mwanza-Nyamanyama to the West;	7.2
With 34 BITS and 8 MBITS Spurs for Mosh-Mkuu and Moshi-Mwanga respectively.	
- provision of technical assistance for drawing up of technical specification.	0.1
- training of technicians who will be operating and maintaining the system.	

TPIC will provide complementary civil works and buildings.

Status : Financing is required for project implementation.

September 1990

5.9.1 Extension of the International Telephone Switching Centre (ITSC) in Lusaka, Zambia



Estimated Costs
Total : USD 2.5 million
Foreign : USD 2.5 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 2.5 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
Zambia Posts and Telecommunications Corporation
Start : 1990
Duration: 2 Years

Objective : Provision of an extension unit and 10 modern computerized switchboards to the International Switching Centre in Lusaka.

Progress : The project comprises of :

- Supply and installation of an extension unit for the AXE 10 digital international telephone exchange with an additional capacity of 500 trunks to augment the existing exchange capacity of 824 trunks.

- Provision of computerized switchboards with automatic change and information storage to replace the manual switchboards currently connected to older portion of the ARMTO International exchange.

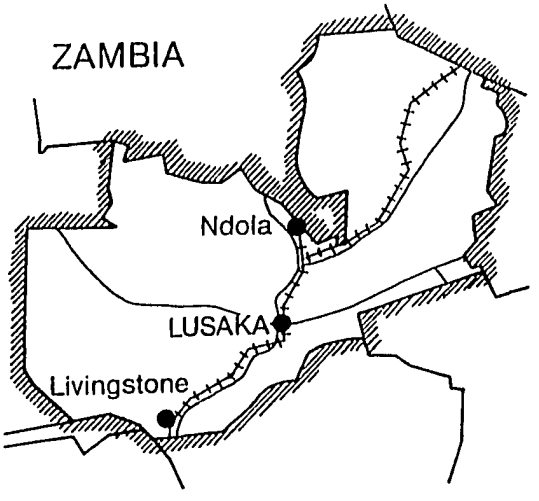
- Interworking equipment for TTMC and other digital and analogue exchanges will also be required.

As Zambia is designated as a regional traffic collection centre, a detailed traffic analysis is required to determine the final capacity of the switch. The exchange should also be able to provide transit switching facilities to regional and international telephone traffic.

Status : Negotiations underway with Sweden.

September 1990

5.9.2 Masterplan Study and Fundamental Planning Unit for Zambia



Estimated Costs
Total : USD 0.4 million
Foreign : USD 0.4 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.4 million

Executing Agency:
Posts and Telecommunications Corporation, Zambia
Start : 1990
Duration: 2 Years

Objective : The preparation of a Long Range Master Plan for the development of the national telecommunications infrastructure, and the setting up of a Fundamental Planning Unit for supporting future network and corporate planning activities.

Description: (1) Preparation of a switching network review, including :

- interim planning proposals for the period to 1990, in order to recommend solutions for the most urgent outstanding expansion requirements
- an integrated concurrent fundamental planning consisting of a medium and long range national demand study
- preparation of a national switching network plan covering the period to year 2005.

(2) Identify, define, configure and appraise expansion projects in order to meet :

- the technical and economic guidelines of the national network plan
- the financial and economic criteria appropriate to the commercial requirements of the PTC and to the PTC's social responsibility of contributing to national development.

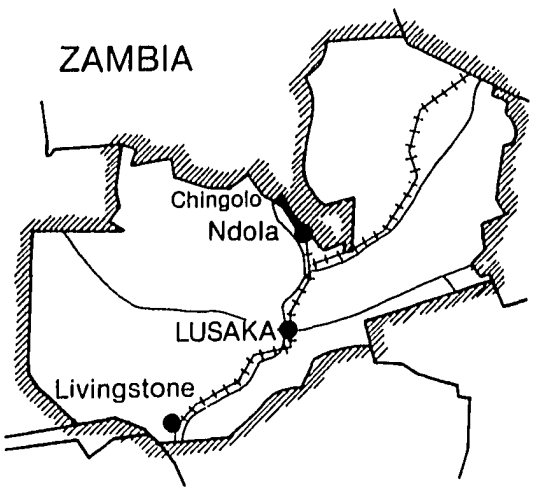
(3) Set up a Fundamental Planning Unit whose functions should include following activities :

- demand and traffic analysis
- network development startegy
- economic analysis
- investment plan preparation and project identification.

Status : Financing and Technical assistance is sought in order to proceed with the study.

September 1990

5.9.3 Microwave Terminal at Chingola to Complete the Link Zambia - Zaire



Estimated Costs
Total : USD 0.2 million
Foreign : USD 0.2 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.2 million

Executing Agency:
Posts and Telecommunications Corporation
Start : 1990
Duration: 2 Years

Objectives : Provision of a microwave radio relay system between Zambia and Zaire to provide a gateway to Central and Western Africa subregion for the SADCC countries.

Description: The project involved the supply, installation and commissioning of a 960 channel microwave link which is between Chingola (in Zambia) as part of the PANAFTEL Network. The project involves two terminal stations at each end and two repeater stations within Zaire.

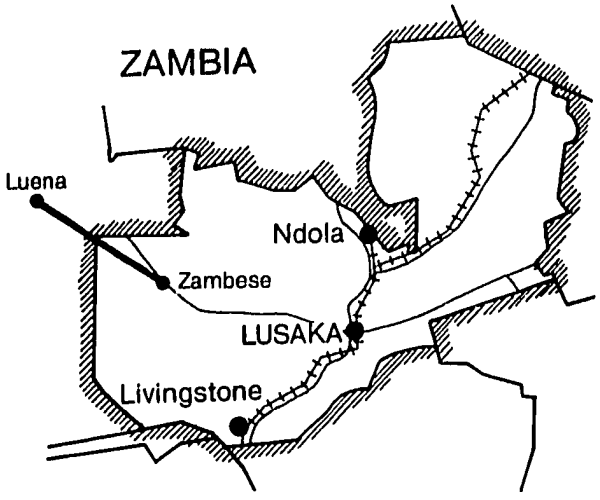
Technical specifications for the 960 channel microwave radio system has been prepared by ITU. A bilateral project agreement was signed late 1985 between Zambia and Zaire.

As an interim arrangement a 120 channel radio system between Chingola (Zambia) and Lubumbashi (Zaire) has been installed and commissioned in April 1987. Most of the circuit of the interim link are made for local Zairean and cross-border traffic and are not enough to carry regional and international traffic from SADCC countries.

Status : Funding is being sought.

September 1990

5.9.4 Microwave Link Zambezi-Luena, Zambia



Estimated Costs
Total : USD 4.0 million
Foreign : USD 3.8 million
Local : USD 0.2 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.2 million

Funding Under Negotiation
Total : USD 3.8 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
Posts and Telecommunications Corporation, Zambia
Start : 1990
Duration: 2 Years

Objective : The project aims to provide a microwave radio relay system between Zambia and Angola which will improve access of SADCC Countries to Angola through the Zambia PANAFTEL network.

Description: Installation of a microwave link with a capacity of 360 telephone channels from Zambezi to Luena, Angola, across the border to give Angola a direct access to the terrestrial PANAFTEL network.

Since the section east of Luena presents logistical problems, the implementation of a tropescatter system linking Luena and Zambezi is envisaged until such time that a multi-hop microwave system can be installed.

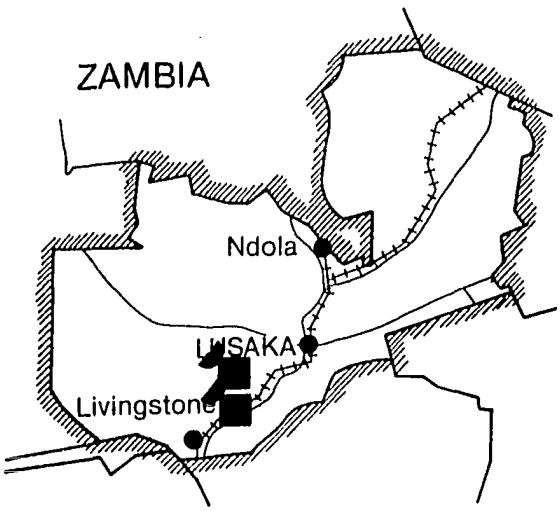
Status : On the Zambia side the network expansion programme in the north western areas provides high capacity 960 channel microwave link up to Zambezi funded by NORAD.

Angola is in the process of expanding the national network with microwave and domestic satellite systems up to Luena, see project 5.1.10.

Negotiations are underway with Norway to finance the provision of large capacity microwave radio system between Luena and Zambezi.

September 1990

5.9.7 Expansion of the Earth Station at Mwembeshi, Zambia



Estimated Costs
Total : USD 25.0 million
Foreign : USD 23.0 million
Local : USD 2.0 million

Funding Secured
Foreign : USD 7.1 million
Local : USD 2.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 15.9 million

Executing Agency:
Zambia Posts & Telecommunications Corporation
Start : 1989
Duration: 3 Years

Objectives : 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 stations in the region.

Progress : The project consists of :

PHASE I

- installation of a new standard A antenna (Mwembeshi II) antenna facing AOR primary satellite, with SCPC and CFDM carriers.

PHASE II

- instalation of standard B (Mwembeshi III) antenna facing AOR major path 2 satellite, with SCPC carriers, and IDR/MD chains for major relations.

- Provision of new transmitting and receiving carriers FDM for the existing standars A antena (Mwembeshi I) facing IOR primary satellite; and also refubishing of the antenna.

- provision of new transmitting and receiving carriers FDM and CFDM for the existing standard A antenna (Mwembeshi I) facing IOR primary satellite; and also refurbishing of the antenna.

- provision of new high capacity digital Microwave backhaul link from Mwembeshi to the LUSAKA International Terminal Equipment Station.

Status : An agreement was signed with CIDA (USD 12.0 millions) for financing of phase 1, and Spar Aerospace of Canada completed implementation of the project end 1987.

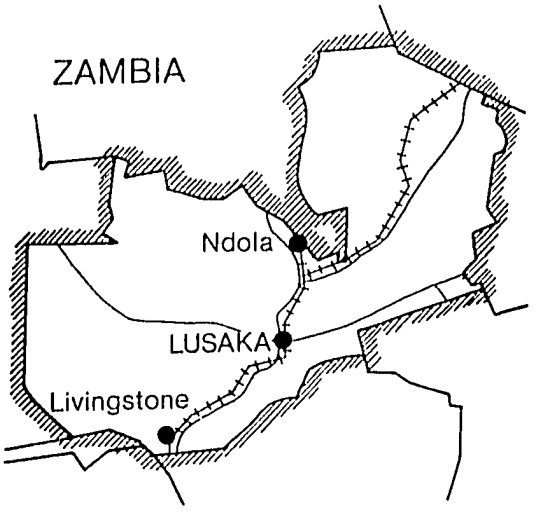
Financing is required for the implementation of phase II.

Phase II of the project is to be part of regional project 5.0.4, Implementation Study for Regional Earth Station Connectivity, funded by CIDA under the auspices of SADCC Technical Services Fund.

Financing is required for a detailed feasibility study and implementation of phase II of the project.

September 1990

5.9.5 Message Switching System in Lusaka, Zambia



Estimated Costs
Total : USD 0.8 million
Foreign : USD 0.8 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.8 million

Executing Agency:
Zambia Posts and Telecommunications Corporation
Start : 1990
Duration: 1 Year

Objective : Provision of an electric message switching centre in Lusaka for the national and international telegram services.

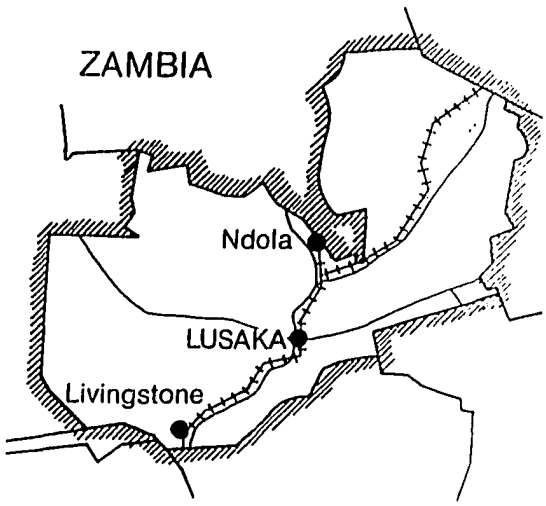
Description: The present system of operating the telegram service is based on a torn-tape principle. Traffic from local and international destinations terminates at a central tape relay console. Transfer of messages from national to international is manual. A computer controlled electronic message switch will process and route telegrams automatically thus increasing efficiency and interconnectability.

The project comprises the provision of a 100 line message switching centre including teleprinters. Installation, spares and technical training shall be included.

Status : Financing is sought for the implementation of the project.

September 1990

5.9.10 Upgrading Lusaka-Livingstone Microwave Trunk Network, Zambia



Estimated Costs
Total : USD 10.0 million
Foreign : USD 9.0 million
Local : USD 1.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 1.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 9.0 million

Executing Agency:
Zambia Posts and
Telecommunications Corporation
Start : 1990
Duration: 2 years

Objectives : Upgrading and digitalization of the main Lusaka-Livingstone PANAFTEL microwave trunk network to provide high quality transmission capability for national regional and international traffic through to Zimbabwe, Botswana and Namibia.

Description: The existing 960 channel analogue microwave radio system is old and channel capacity is approaching saturation in the transmission of national, regional and international traffic. The system carries the main PANAFTEL traffic to Zimbabwe, Botswana as well as the intermediate national traffic.

Currently the multiplex part of the link is being upgraded by NORAD to allow limited growth of channel capacity for international and regional traffic.

The project consists of:

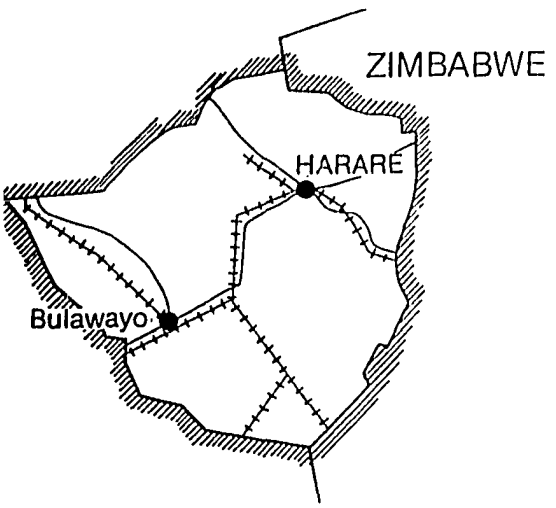
- 140 MBit digital radio equipment with appropriate spares along the route.
- Expansion of power, housing and associated facilities.
- Provision of spares, test equipment, and training of maintenance technicians.

A detailed propagation survey and technical specification of requirements is necessary for project implementation.

Status : Financing is required for project implementation.

September 1990

5.10.6 Provision of Packet Switching for Data Network in Zimbabwe



Estimated Costs
Total : USD 3.6 million
Foreign : USD 3.2 million
Local : USD 0.4 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.4 million

Funding Under Negotiation
Total : USD 3.2 million

Financing Gap:
Total : USD 0.0 million

Executing Agency:
Posts and Telecommunications Corporation, Zimbabwe
Start : 1990
Duration: 1 Year

Objectives : The project is for the provision of DATA PACKET SWITCHING in order to cater for fast and low cost data communications for national, regional and international traffic.

Progress : Zimbabwe has already established links with ither international countries through the UK International Packet Switching System, (IPSS).

The development of data communication in Zimbabwe and traffic demand to Europe, America, SADCC and non-SADCC countries requires the eventual cost saving packet system.

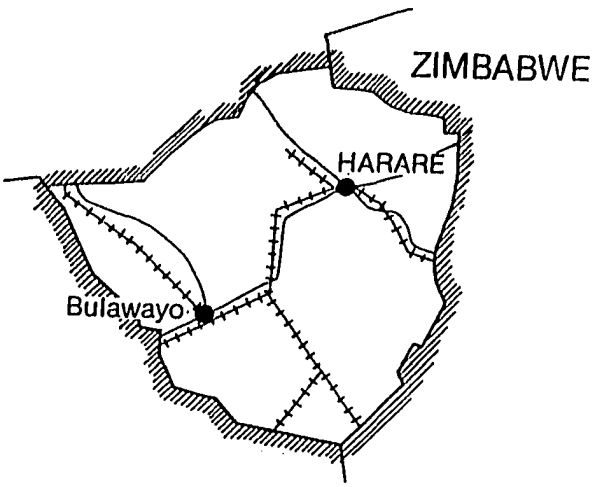
The demand for data communication in Zimbabwe has doubled during the past year and is expected to quadruple its current size by 1990.

The project will involve the provision of a data Packet Switch and the associated modems in Harare and nodes in Bulawayo, Gweru, Mutare and Masvingo. Local staff training will form part of the project.

Status : Negotiations underway with Belgium.

September 1990

5.10.7 Supply of Digital Telephone Exchanges in Zimbabwe



Estimated Costs
Total : USD 68.0 million
Foreign : USD 62.9 million
Local : USD 5.1 million

Funding Secured
Foreign : USD 47.5 million
Local : USD 5.1 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 15.4 million

Executing Agency:
Posts and Telecommunications Corporation, Zimbabwe
Start : 1988
Duration: 7 Years

Objective : Digitalization of the five national telephone exchange zone centers comprising Gweru, Bulawayo, Masvingo, Mutare and Harare in order to provide high quality switching capacity and capability to the national regional and international traffic along the PANAFTEL trunk network.

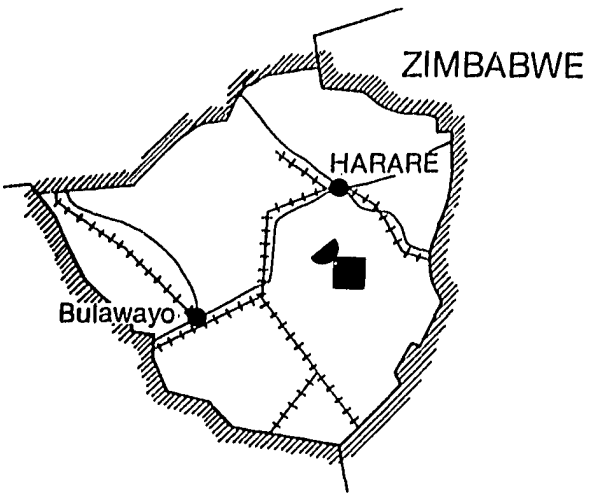
Progress : Provision of digital telephone exchange equipment in each of the following regions:

Phase I, 1987-1992 :				
- Mashonaland/Manicaland Implementation period 1991-1992	65.000	21.738	19.5642	2.1738
- Matabeleland Implementation period 1991-1992	10.000	21.738	3.	0.3
- Midlands/Masvingo	18.000	5.58	5.	0.58
Phase II, 1992-1995 :				
- Mashonaland/Manicaland Implementation period 1993-1994	45.000	15.	13.5	1.5
- Matabeleland implementation period 1993-1994	13.000	4.2	3.78	0.42
- Midlands/Masvingo Implementation period 1994-1995	9.000	2.79	2.511	0.279

Status : For the five year programme 1987-1992; three national exchanges at gweru, Bulawayo and Masvingo are either funded or completed. The funding of Mutare is required while Harare is partly financed. Bulawayo main digital exchange was funded (USD 7.5 million) by IEB, International European Bank with implementation by Fujitsu.

Japan is financing the Mashonal and/Manicaland project with implementation by Fujitsan.
Financing of digital exchanges in Matebeleland is sought.

5.10.8 Expansion of the Earth Station at Mazowe, Zimbabwe



Estimated Costs
Total : USD 11.5 million
Foreign : USD 10.5 million
Local : USD 1.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 1.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 10.5 million

Executing Agency:
Posts and Telecommunications Corporation, Zimbabwe
Start : 1990
Duration: 2 years

Objective : Expansion of the capacity at the existing satellite earth station at Mazowe in order to provide regional satellite connectivity by 1989 and improve diversity of routes outside Zimbabwe by taking into account :

- delays to the INTELSAT VI Satellite launches
- evolution of INTELSAT to a distributed system
- and the accelerating trend towards IDR and TDMA digital carrier technologies.

Progress : PHASE 1

- reorientation of the Standard A earth station antenna at Mazowe, Zimbabwe onto the 335.5 E Atlantic Satellite, and progressive conversion to IDR, Intermediate Data Rates, carrier operation over the 1989-1983 time frame.

PHASE 2

- construction of a second revised Standard A earth station at Mazowe in the Indian Ocean region, with TDMA carrier operation in the 1992-1994 time frame.

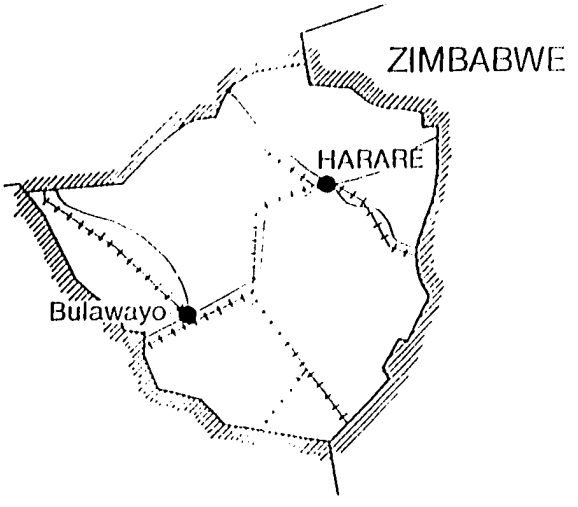
Estimated Costs:	Total USD	Foreign USD
Phase 1	USD 1.5 million	USD 1.5 million
Phase 2	USD 10 million	USD 9 million

This project should be co-ordinated with Project 5.0.4, Implementation Study for a regional Earth Station Connectivity Project.

Status : Japan has provided detailed technical specification for the project; and USAID is providing planning specification as part of Project 5.0.4.
Financing is required for project implementation.

September 1990

5.10.9 Provision of Telex Exchange and Network, Zimbabwe.



Estimated Costs
Total : USD 7.5 million
Foreign : USD 7.0 million
Local : USD 0.5 million

Funding Secured
Foreign : USD 0.0million
Local : USD 0.5million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 7.0 million

Executing Agency:
Ports and Telecommunication Corporation
Start : 1990
Duration: 2 years

Objective : Provision of telex and associated transmission equipment to meet national, regional and international service demand for telex traffic throughout Zimbabwe.

Description: The existing telex network consists of an EIX telex exchange in Harare with concentrators in Gweru and Bulawayo.

The capacity of the present network is inadequate to cover the demand forecast for up to the year 2000 covering the whole country and estimated at 16,000 subscribers.

The project consists of:

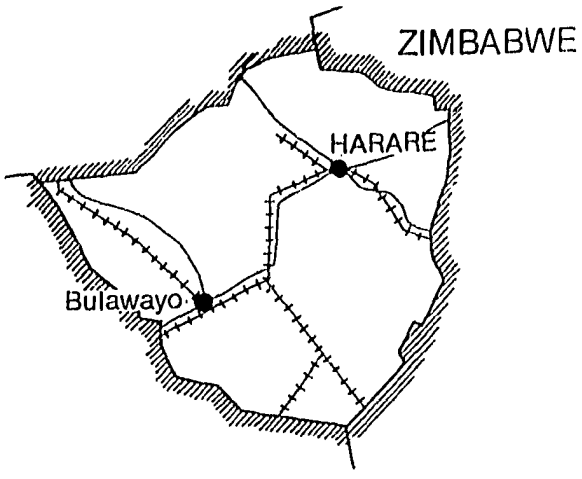
	Estimated trunks	Exchange
- Main telex exchange	1,896	3,200
- 6 x Concentrators	1,200	4,800

Project will include associated interconnecting transmission and power equipment, and training of maintenance technicians and engineers.

Status : Financing is required for project implementation.

September 1990

5.10.10 Extension of ITSC GWERU, Zimbabwe



Estimated Costs
Total : USD 6.8 million
Foreign : USD 6.6 million
Local : USD 0.2 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.2 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 6.6 million

Executing Agency:
Zimbabwe Post and Telecommunication Corporation
Start : 1990
Duration: 1 year

Objectives : Provision of extension and modification of the telecommunication system for international, regional and national interworking to the International Switching Centre in Gweru.

Description : The project comprises:

- Supply and installation of a large capacity APZ 212 processor, with CCIT Nr.7 and R2 International Swicthing Signalling Software packages, as a replacement to the existing APZ 210 processor which has a limited capacity for regional and international use.

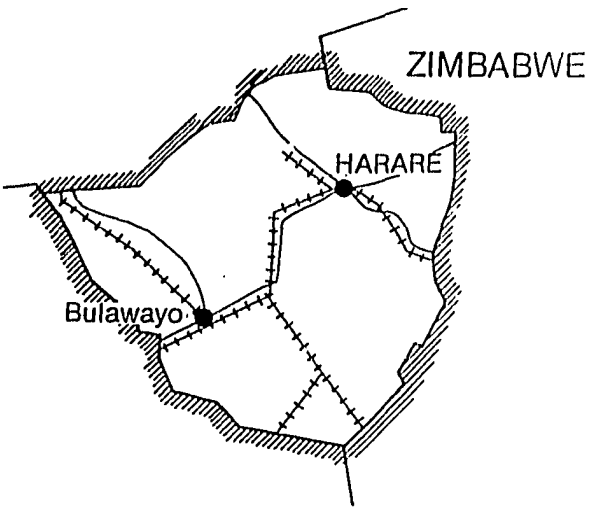
- Supply and installation of code senders and receivers, analogue and digital R2 International Signalling System for regional interworking along the PANAFTEL Network.

- Provision of technical assistance for management support and training of technicians for operating and maintainning the system.

Status : Financing is required for project implementation.

September 1990

5.10.11 Digital Microwave Link Gweru (Zimbabwe) to Maputo Mozambique.



Estimated Costs
Total : USD 18.5 million
Foreign : USD 16.0 million
Local : USD 2.5 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 2.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 16.0 million

Executing Agency:
Zimbabwe Posts and Telecommunications Corporation and
Start :
Duration:

Objectives : Provision of digital radio microwave system from Gweru and Masvingo in Zimbabwe to Maputo, Mozambique, along the Limpopo Railway Line, to carry high quality and reliable PANAFTEL traffic between the two countries and Swaziland.

Description : The project will complete the PANAFTEL network between Mozambique and Zimbabwe. The existing rehabilitation of the Limpopo Railway Line between Maputo and Rutenga will require improved telecommunications in both Mozambique and Zimbabwe.
The project consists of:
(a) the provision of digital microwave radio equipment for:
- 140 Mbits system for Gweru-Rutenga with 70Mbits and 34Mbits spur links to Beit Bridge and Chiredzi in Zimbabwe.
- 140 Mbits digital crossborder link, Rutenga (Zimbabwe) to Chicualacuala and Macia in Mozambique.
- 140 Mbits digital radio link between Maputo and Macia with spur links to provide communication facilities to 9 towns and communities along the Limpopo Railway Line;
(b) Supply of associated civil works and power supplies;
(c) Supply of some digital rural exchanges along the route;
(d) Training of maintenance personnel;
(e) Technical assistance for detailed technical specification of the project and commissioning of the link.
Zimbabwe PTC and TDM will provide some financing complementary civil engineering projects.

Status : Financing is required for project implementation

September 1990

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Meteorology

6.0.1 Meteorological Expert Services and Fellowships

Estimated Costs
Total : USD 6.3 million
Foreign : USD 6.3 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 5.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.3 million

Executing Agency:
National Meteorological Services
Start : 1986
Duration: 7 years

Objectives : The basic aim of the project is to increase the number of well educated and adequately trained staff members of the meteorological services in the Region.

Description : Emphasis is, for the time being, placed on agrometeorology, data processing, telecommunications and equipment maintenance. In order to increase the ability of the services to produce more user oriented meteorological information of various kinds, the assistance of expatriate experts are required for a limited period of time. Training of personnel will be accomplished by the provision of fellowships

The cost figures above include the expert service and fellowship components of projects 6.0.2 through to 6.0.7, cf. the respective project briefs.

Status : Additional funding is being sought.

September 1990

6.0.2 Regional Drought Monitoring Centre, Harare

Estimated Costs
Total : USD 1.2 million
Foreign : USD 1.1 million
Local : USD 0.1 million

Funding Secured
Foreign : USD 0.6 million
Local : USD 0.1 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.5 million

Executing Agency:
Department of Meteorological Services, Zimbabwe
Start : 1987
Duration: 5 Years

Objectives : Being the Southern Africa part of the UNDP/WMO project "assistance to Drought Stricken Eastern and Southern African Countries in the Field of Agrometeorology and Hydrology" (RAF/84/002), its main objectives are to enable the preparation and dissemination of meteorological information etc. of vital importance to both planning and operational measures within the field of agriculture. The centre is supposed to cooperate closely with the SADCC/FAO "Regional Early Warning System for Food Security", also located to Harare.

Description : The establishment of the RDMC is expected to result in the following achievements:

* Readily available meteorological, agrometeorological and hydrological information in data banks designed for computer processing;

* Development of drought monitoring and mitigation capabilities by assisting member services in establishing similar, national data banks. This will be done by providing both expert services and fellowships.

The above estimated costs are related mainly to the purchase of equipment. Necessary funds for the provision of expert services and fellowships (USD 1,3million) are included in project 6.0.1.

Status : The buildings for the center are completed. The installation of a telecommunication message switching system (provided by Canada), a primary user satellite receiving station (funded by Japan through FAO) and a computer system (provided by UK) is in progress or will be commenced in a near future.

External funding is secured by UNDP. Additional funding is being sought.

6.0.3 Regional Meteorological Telecoms Hub and Data Exchange, Lusaka

Estimated Costs
Total : USD 1.6 million
Foreign : USD 1.3 million
Local : USD 0.3 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.3 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.3 million

Executing Agency:
Meteorological Department, Zambia
Start : 1988
Duration: 5 Years

Objectives : Lusaka has been designated by the WMO's Association for Africa as the location of a Regional Telecommunications Hub (RTH) for Southern Africa. The responsibility of a RTH is to operate a system for rapid collection and dissemination of meteorological data for national, regional and intercontinental use.

The main objective of the project is to develop the RTH Lusaka in such a way that it can reach a level of service acceptable to all users of meteorological data.

Description: The development of the RTH Lusaka is proposed to be accomplished in three ways :

(i) Establishment of a computerised telecommunications message switching system;

(ii) Improvement of the telecommunications links between RTH and the National Meteorological Services (NMS) as well as with neighbouring RTH's for connection with the Global Meteorological Telecommunications System (GTS). (See also Project 6.0.7).

(iii) Training in the fields of telecommunications engineering and software maintenance.

The provision of Expert Services and fellowships at an estimated cost of USD 0.4 million is included in Project 6.0.1.

Status : A project document describing an optimum meteorological telecommunications system for the SADCC Region has been prepared under FINNIDA funding arrangements. At a meeting in October 1989, the Directors of Meteorological Services adopted the report and, furthermore, decided that the proposed three-step solution should be implemented.
The cost of implementing the first step is estimated at USD 0.9 million.
Deliberations are under way with the aim to transfer FINNIDA funds of approx. the same magnitude from other meteorological projects, mainly 6.0.7, thus enabling the commence of step one. The Government of Zambia has allocated funds for the construction of a building to accomodate the RTH. It was expected to be completed by March 1990.

6.0.4 Regional Maintenance Support of Meteorological Services

Estimated Costs
Total : USD 0.4 million
Foreign : USD 0.4 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.2 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.2 million

Executing Agency:
WMO and the National Meteorological Services
Start : 1989
Duration: 5 years

Objectives : The main objective is to improve the possibility within the Region to maintain, repair and calibrate meteorological traditional measuring as well as high technology equipment.

Description : Rehabilitation and upgrading of certain maintenance facilities is in progress at National Meteo Services as a result of FINNIDA partial funding (Project 6.0.6).

In order to make the services in question capable of maintaining at least less complicated equipment, this rehabilitation should be continued and completed.

At the SADCC Meteo Directors Meeting, 1988 it was agreed that a consultant should be hired to define equipment, tools, spare parts and manpower requirements, as well as investment, operational costs and institutional framework necessary for a regional support facility. So far, the costs of tools, spare parts etc. are estimated at USD 0.4 million. Another USD 0.4 million intended for expert services and training are included in Project 6.0.1.

Status : A Contracted Consultant is supposed to finish the work during 1990. Funds for the provision of some tools and spare parts have been made available by FINNIDA. Additional funding is being sought.

September 1990

6.0.5 Data Processing in Meteorological Services

Estimated Costs
Total : USD 1.4 million
Foreign : USD 1.4 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.5 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.9 million

Executing Agency:
National Meteorological Services
Start : 1987
Duration: 5 Years

Objectives : For various purposes in the society, such as urban extension and rural resettlement, agriculture, energy resources assessment etc., ready available meteorological data and statistics are of vital importance. This can be accomplished in an effective manner using computers in non-real-time applications.

Other sectors need rapid information on actual weather conditions as well as reliable forecasts. For this purpose suitable computer-programmes and computers directly accessible for real-time operations are required.

The main objective of this project is to provide the meteorological services of the Region with both trained manpower and equipment to facilitate these operations.

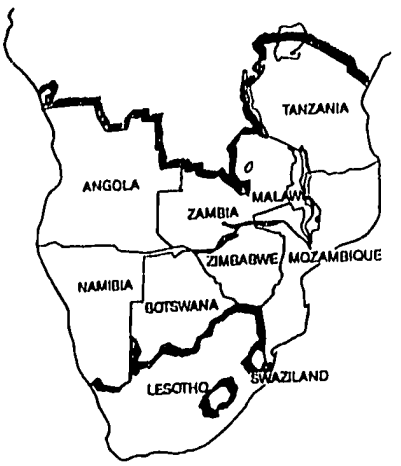
Description : Under Phase I of the FINNIDA support, most of the member services were furnished with the CLICOM system. One more country should be provided with this facility, and some smaller enhancement made in seven other countries. Furthermore, micro-computers for real time data processing should be made available for some of the services. Expert services and fellowships at an estimated cost of USD 0.8 million are included in Project 6.0.1.

Status : The installation of CLICOM computers and the training of staff members is going on under FINNIDA funding arrangements.

Financing is being sought for the provision of microcomputers for real-time data processing.

September 1990

6.0.6 Meteorological Observational Networks



Estimated Costs
Total : USD 8.2 million
Foreign : USD 8.2 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 5.2 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 3.0 million

Executing Agency:
National Meteorological Services
Start : 1987
Duration: 5 Years

Objectives : The project has two main objectives :

(i) upgrading and rehabilitation of certain facilities at observing sites in order to secure better and more reliable meteorological data;

(ii) strengthening and extension of the regional observing network to meet certain prerequisite inputs for the preparation of required meteorological end-user products.

Description : During phase I of the FINNIDA support, a partial rehabilitation of observing as well as maintenance facilities took place. This process will be continued during phase II, and the network extended by adding some new facilities. The project includes the following components :

(1) Establishment of approx.20 new stations in the Region (some of these equipped with radiosonde facilities).

(2) Establishment of agrometeorological and automatic weather observing stations, and provision of instruments for a continued rehabilitation process.

(3) Provision of vehicles for inspection of meteorological observing sites.

Financing of expert services and felowships at an estimate cost of USD 0.4 million is included in project 6.0.1

Status : Additional funding is being sought.

September 1990

6.0.7 Meteorological Telecommunications

Estimated Costs
Total : USD 4.4 million
Foreign : USD 4.4 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 1.9 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.5 million

Executing Agency:
National Meteorological Services
Start : 1987
Duration: 5 Years

Objectives : Upgrading and improvement of the telecommunications facilities at the Meteorological services in order to ensure a fast and reliable collection of meteorological observations as well as dissemination and exchange of meteorological data. The project is strongly connected to the RTH, Lusaka. (see Project 6.0.3).

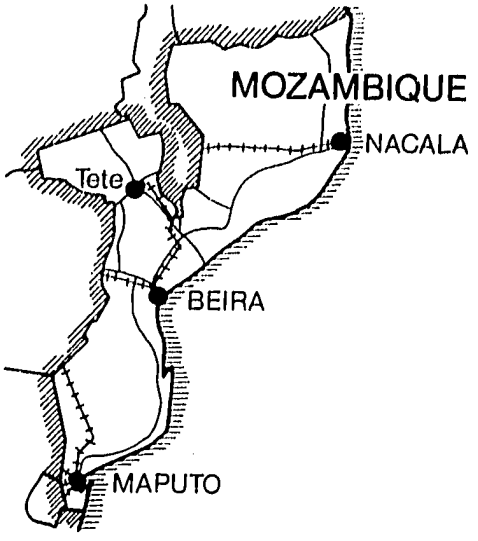
Description: A substantial rehabilitation and upgrading of the various national meteorological telecommunications facilities is in progress as a result of FINNIDA financing arrangements. However, additional external funding is required to complete the modernization and strenghtening of the telecommunication units at most of the services.

The Directors of the Met. Services have adopted a three step implementation plan, in which provisions been made for this modernization as well as for the development of the RTH, Lusaka.
The estimated total cost is expected to be revised during the second step of the implementation phase.
Cost of the required provision of expert services and fellowships, USD 0.6 million, is included in Project 6.0.1.

Status : Financing is partly secured by Finland and the implementation is in progress.

At the 10th SADA Conference in Livingstone, Zambia, in Feb. 1990, the Telecomminications Administrations agreed to assist the Meteo Services of their resp. countries in establishing the data network within the Region for interconnection to the RTH, Lusaka, and similarly for the RDMC, Harare (6.0.2 above)

6.5.1 Meteorological Buoys for Mozambique



Estimated Costs
Total : USD 0.1 million
Foreign : USD 0.1 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.1 million

Executing Agency:
Ministry of Transports and Communications, Mozambique
Start : 1991
Duration: 2 Years

Objectives : Mozambique is responsible for safety in the Mozambique Channel and has to issue warnings for shipping purposes. The lack of data from the sea is one of the major problems and effects the quality of forecasts, mainly during cyclone seasons.

Acquisition and location of meteorological observing buoys in the Mozambique Channel would greatly help in obtaining necessary data from this area.

Description: The intention is to equip the buoys with sensors that will provide measured data on air temperature, atmospheric pressure, wind speed and direction , and water temperature.

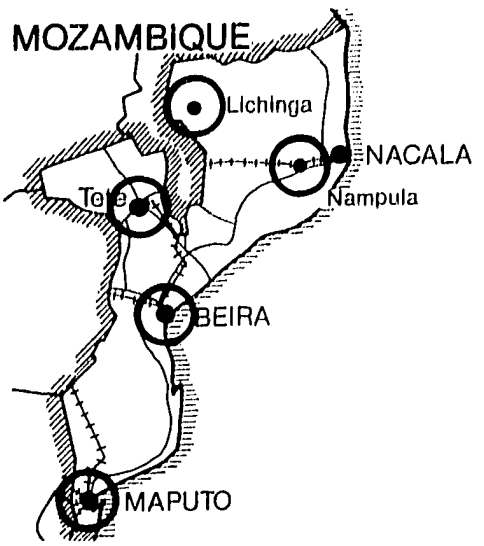
The project also comprises

- training
- adequate telecommunications for data transmission
- spare parts.

Status : Further studies been initiated . Funding is being sought.

September 1990

6.5.2 Aeronautical, Meteorological Equipment for Airports in Mozambique



Estimated Costs
Total : USD 0.7 million
Foreign : USD 0.7 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.7 million

Executing Agency:
Ministry of Transports and Communications, Mozambique
Start : 1990
Duration: 5 Years

Objectives : Old and partly obsolete meteorological measuring equipment at the main airports of Mozambique have to be replaced in order to safeguard the quality of the meteorological information provided for aviation.

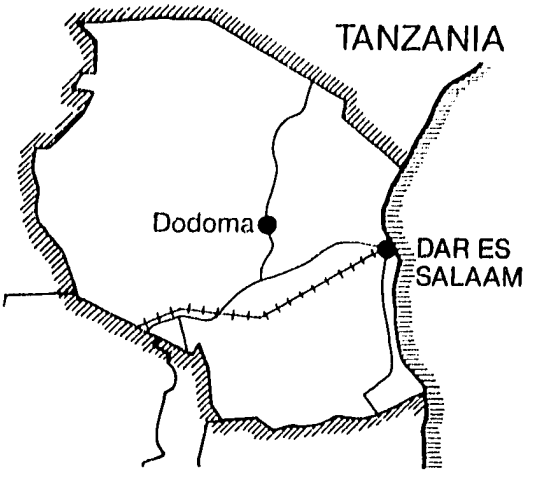
Description: The project includes the following aeronautical, meteorological equipment :

- Two devices for measuring the Runway Visibility Range at the international/regional airports of Maputo and Beira
- Three ceilometers for measuring the cloud base
- Four pieces of equipment for measuring the visibility
- Two pieces of equipment for detection of wind shear in the lowest 1000 metres
- Miscellaneous components

Status : Financing is being sought.

September 1990

6.8.1 Meteorological Buoys for Tanzania



Estimated Costs
Total : USD 0.4 million
Foreign : USD 0.4 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.4 million

Executing Agency:
Ministry of Communications
and Works, Tanzania
Start : 1991
Duration: 2 Years

Objectives : With a view to get more adequate meteorological coverage of the Indian Ocean, at least 3 meteorological measuring buoys have to be acquired and installed in the data sparse areas of the Indian Ocean facing Tanzania.

Description: The buoys should be equipped with sensors for measuring air temperature, atmospheric pressure, wind speed and direction, and water temperature.

The project comprises the following elements :

- acquisition and installation of 3 buoys;
- adequate telecommunications equipment for data transmission; and
- spare parts.

Status : Funding is being sought.

September 1990

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Postal Services

7.0.1 Postal Training Development Programme

Estimated Costs
Total : USD 1.1 million
Foreign : USD 1.0 million
Local : USD 0.1 million

Funding Secured
Foreign : USD 0.2 million
Local : USD 0.1 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.8 million

Executing Agency:
SATCC

Start : 1987
Duration: 3 years

Objectives : To promote the development of training and training facilities, including Management Courses, for the Postal Administrations in SADCC Member States and provision of technical assistance, including small equipment.

Description: The project includes the following :

(i) Management Courses;
(ii) Refresher Course for Instructors;
(iii) Languages Courses Portuguese/English;
(iv) Meetings of a training Subgroup reporting to the Meetings of Directors of Postal Services;
(v) Revision of regulation books and related matters;
(vi) Equipment, both hardware and software for postal training;
(vii) Technical assistance and scholarships for training purposes;
(viii) Development of special courses on postal systems for example International Accounting, Statistics, Postal Management, Planning, Marketing, Philately, etc.

The project is in principle based on a SATCC/TU Report on Postal Training Development of Basic and Further Education and Training of Instructors (July, 1986).

Status : A Refresher Course for Instructors, developed by SWEDPOST and financed by NORAD Technical Services Fund, was held in Dar es Salaam, Tanzania, 1987.

A Training Subgroup has been established and has prepared a Training Programme which in principle has been accepted by the Meeting of Directors of Postal Services.

In 1986 and 1987 the Post and Telecommunications of Finland arranged a Postal Management Course, fully financed by FINNIDA.

FINNIDA ha sfinanced a three weeks study circle on Postal Planning and marketing for Portuguese speaking African countries in June 1989. The Study cycle was effected by Finnpost in cooperation with the Portuguese consulting company Tecnologia Das Comunicacoes (TDC) in Lisbon, Portugal.
The vast majority of the seats were directed to Angola and Mozambique, 5 each.

7.0.2 Feasibility Study on the Introduction of a Postal Giro System in the SADCC Countries

Estimated Costs
Total : USD 0.2 million
Foreign : USD 0.2 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.2 million

Executing Agency:
SADCC

Start : 1990
Duration: 10 months

Objectives : Evaluation of effects of the possible introduction of a postal giro system in SADCC countries and of the feasibility of such a system.

Description: The study will evaluate the effects of the planned postal giro system on :

(i) cash in circulation and and payment of bills;
(ii) savings;
(iii) banking services to both urban and rural population, government institutions, public utilities and business enterprises;

and make an assessment of
(iv) the facilities needed for the introduction of such services; and
(v) of the costs involved and benefits;

and make recommendations based on the findings of the study on the viability of the proposed system.

Status : A prestudy was carried through in Zambia by Finnpost in 1986 and in Zimbabwe by SwedPost in 1989. Funds are being sough in both cases. From Finland for a Feasibility study in Zambia (10 man-months) and from Sweden for implementation in Zimbabwe of a first step of a new Payment system (8 Manmonths). Funding is being sought.

September 1990

7.0.3 Technical Assistance to Postal Services

Estimated Costs
Total : USD 1.4 million
Foreign : USD 1.0 million
Local : USD 0.4 million

Funding Secured
Foreign : USD 0.1 million
Local : USD 0.4 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.9 million

Executing Agency:
SADCC

Start : 1989
Duration: 3 years

Objectives : Assistance by postal experts for more efficient mail handling at the sorting centres by introducing new methods, proper equipment, training (mainly on the job), management and efficient operations in all SADCC Member States (separate arrangements have been made for Mozambique and Zimbabwe).

Description: Following needs country by country are presented in the report " Technical Assistance to Postal Services - May 1988:

Angola : Insufficient and very bad premises at the Sorting Centre in Luanda. An expert examination of the Feasibility Study of a new Postal Terminal in Luanda is demanded.

Estimated time : 6 man months.

Botswana : Need of expert assistance for a study concerning a new Postal Terminal in Francistown.

A survey of the sorting-and transportsystem in the country is demanded.

Estimated time : 3 man months.

Lesotho : Need of expert assistance for :

- a study concerning a new postal centre in Maseru;
- introducing of Express Mail Service (EMS);
- an overhaul of the statistical system;

Estimated total time : 6 man months.

Interest also of a Postal Giro System.

Malawi : Need of expert assistance for :
- a survey concerning internal and external sorting and transportorganization;
- a feasibility study about postal terminals in the country

Estimated time : 6 man-months.

Swaziland : Need of expert assistance for :
- a feasibility study about the sorting and transportorganization;
- a study about the needs of new postal terminals in the country;

Estimated time : 2 man months.
Interest also of a Postal Giro System.

Tanzania : Need of expert assistance for:

- a study concerning the sorting - and transport organization including the introduction of a postcode system;
- a feasibility study about a sorting and transit centre in Dar es Salaam

Estimated time : 6 man-months

Interest also of a Postal Giro System.

Zambia : Need of expert assistance for :

- a study of the sorting and transport system including introduction of a postcode system;
- studies concerning new sorting centres in Luanda and Kapiri Mpushi.

Estimated time : 2 man-months

Zimbabwe : Need of expert assistance for :

- a feasibility study of the postal terminal project in Harare;
- a study of the sorting-and transport organization including introduction of a postcode system.

Estimated time : 8 man-months.

Interest also of a Postal Giro System.

Status : A Survey on the Needs for Technical Assistance to Postal Services, was completed in May 1988, covering all SADCC countries, except Mozambique.

In Mozambique a project for improvement of the mail handling at the Sorting Centres in Maputo and Beira, financed by SIDA and conducted by SwedPost, was carried through in 1989-90.
A corresponding project in Zimbabwe, partly financed by German aid was carried through by DEMICON, German Telepost Consulting, 1988-90. Additional funding soug

7.0.4 Regional Programme for the Development of Postal Terminals

Estimated Costs
Total : USD 27.7 million
Foreign : USD 16.3 million
Local : USD 11.4 million

Funding Secured
Foreign : USD 0.6 million
Local : USD 11.4 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 15.7 million

Executing Agency:
SADCC

Start : 1989
Duration: 5 years

Objectives : Construction, establishment and organisation (including equipment) of Postal Regional Sorting and Transit Centres in the SADCC Countries for mail handling and routeing of mail in accordance with the SADCC goals.

Description : The sorting of mail, both local and international, in the SADCC Countries is concentrated to some important centres.

In a report "Technical assistance to Postal Services", May 1988, the actual situation has been illustrated. The rational handling of mail at many of these centres is hindered by inadequate premises.

To achieve a better mail handling service which can fulfil the expectations of the customers of other Postal Administrations around the world, and to make it possible to route the mail in accordance with SADCC goals, there are immediate needs for investments to premises and equipment to provide better working conditions and to cope with expected mail volumes.

The Project consists of following Terminals :

		COST (USD) million Total	Foreign
(i)	Postal Terminal in Luanda	12.6	10.0
(ii)	Postal Terminals in Gaborone and Francistown	1.2	0.4
(iii)	Postal Terminals in Maseru and Quacha's Nek	3.0	1.0
(iv)	Postal Terminal in Lilongwe	1.1	1.0
(v)	Postal Terminal in Beira	1.7	1.0
(vi)	Postal Terminals in Mbabane and Manzini	0.6	0.2
(vii)	Postal Terminal in Dar es Salaam	3.0	1.0
(viii)	Postal Terminals in Lusaka and New Kapiri Mposhi	0.5	0.1
(ix)	Regional Postal Terminal in Harare	4.0	1.6
		27.7	16.3

Status : Angola :
A description of the project has been made. The Postal Administration has asked for tenders about a Feasibility Study. Financing of a study, estimated cost USD 300 000, is being sought.

Botswana :
A new Postal Terminal in Gaborone financed by own resources will be ready in 1989 (March). There is however, still need for technical assistance

(organization, methods, equipment, training, etc).

Lesotho :
Project descriptions are being prepared.
Malawi :
Design study has to be made.

Mozambique :
The Plan for a new terminal in Beira is based on a study carried out by SOFREPOST in 1985 and a report on short term activities prepared by SATCC in 1987. Denmark has been approached.

Swaziland :
A feasibility study has been completed showing that the planned offices will be fully utilized.

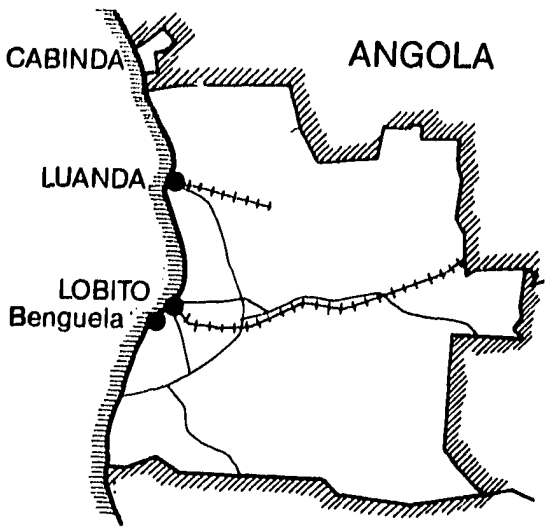
Tanzania :
A study should be carried out as the first step of implementation. Terms of Referecne for a study have been prepared.

Zambia :
Project descriptions have been prepared.

Zimbabwe :
A Feasibility Study concerning a Postal Terminal in Harare financed by Sweden was carried out in 1989. Vlak, a Swedish Engineering Company assisted by Swedish postal experts, performed the Study.

Additional funding sought.

7.1.2 Development of Postal Training in Angola



Estimated Costs
Total : USD 2.7 million
Foreign : USD 2.2 million
Local : USD 0.5 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.5 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 2.2 million

Executing Agency:
Ministry of Posts and Telecommunications, Angola
Start : 1990
Duration: 3 years

Objectives : Establishment of a national training school for postal and telecommunications services and revision and documentation of basic and other postal courses in Angola.

Description: The aim is to provide adequate facilities for basic and middle management training. A postal training school will progressively improve the quality of postal services.

The project is composed of two parts, namely :

	Cost (USD million) Total	Foreign
(i) Establishment of a national training school;	2.5	2.0
(ii) Revision and documentation of basic and other courses	0.2	0.2
Total	2.7	2.2

The present training facilities are inadequate. In addition to new premises, training equipment, furniture and vehicles are needed.

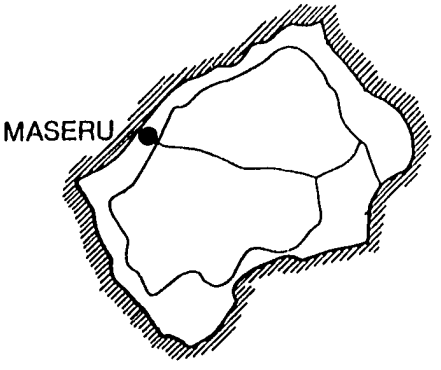
The development of training courses is planned to be carried out in co-operation with the Angolan training instructors.

Status : Financing is being sought to begin with for a study on the new training school.

September 1990

7.3.1 Postal Training School, Lesotho

LESOTHO



Estimated Costs
Total : USD 0.2 million
Foreign : USD 0.2 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.2 million

Executing Agency:
Department of Postal Services, Lesotho
Start : 1990
Duration: 1 year

Objectives : Provision of furniture, equipment and transport for the new training school.

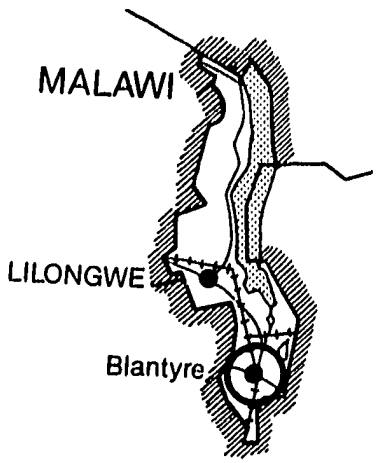
Contents : Hitherto, the Post Office staff/participants attending courses at the present Training School are not provided with any kind of accommodation throughout the duration of their stay in Maseru.

There are some outstanding issues pertaining to the project. These are furniture and equipment and a commuter vehicle, which formen important element of the project. The new school will be located some 10km out of the town centre of Maseru.

Status : Project description has been prepared. Financing is being sought.

September 1990

7.4.2 Upgrading of Postal Wing of the MCTC in Blantyre, Malawi



Estimated Costs
Total : USD 0.2 million
Foreign : USD 0.2 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 0.2million

Executing Agency:
Department of Posts and Telecommunications, Malawi
Start : 1990
Duration: 1 year

Objectives : Upgrading of courses and premises (additional classrooms and hostel accommodation) of the Multi-country Training Centre (MCTC) in Blantyre.

Description: Intermediate training is provided for staff from Botswana, Lesotho, Malawi and Swaziland at the Blantyre Training Centre.

Five different courses are run, related to supervision, accounting, correspondence, training and junior management. At present the courses cover about 400 trainees weeks. Two new courses are in the programme. Therefore the capacity of the centre has to be increased to cover 1400 trainee weeks per annum.

The project includes the following :

(i) two additional classrooms;
(ii) two additional hostel blocks, each with eight rooms;
(iii) additional equipment; and
(iv) provision of a management expert and fellowships to the amount of USD 170.000.

The training activities are supported by EEC under Lome II and III funds.

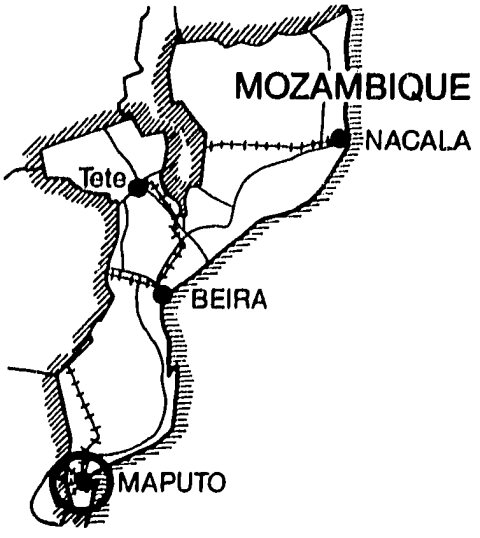
Status : A study was carried out on the development of the centre a few years ago by the UPU. A project description has been prepared.

Plans are being made to develop the centre to serve all SADCC member States.

Funding is being sought.

September 1990

7.5.1 Sorting Centre and Stamp Printing Facilities in Maputo, Mozambique



Estimated Costs
Total : USD 2.3 million
Foreign : USD 2.0 million
Local : USD 0.3 million

Funding Secured
Foreign : USD 0.2 million
Local : USD 0.3 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.8 million

Executing Agency:
Postal Department, Mozambique

Start : 1988
Duration: 2 years

Objectives : Upgrading of the Postal Terminal in Maputo and improvement of the present printing facilities.

Description: The project includes the following:

		Cost (USD, million) Total	Foreign
(i)	Rehabilitation and upgrading of the facilities at Maputo postal terminal; and	1.3	1.0
(ii)	Improvement of the existing stamp printing facilities	1.0	1.0
	TOTAL	2.3	2.0

Due to the increase of the volume of mail the existing facilities in Maputo are inadequate. The sorting shall be improved and facilities and equipment provided for a mechanized handling system. The premises will be upgraded.

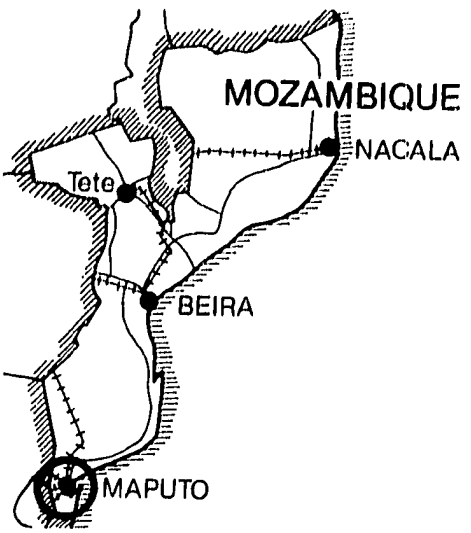
To improve the quality of stamps and to increase capacity the following equipment is needed for stamp printing: offset machine for printing of stamps, repetex machine, press machine and elarod machine.

Status : SIDA, Sweden, has agreed to finance technical assistance by SWEDPOST of the Postal Sorting Centre in Maputo.

New machinery for stamp printing have been installed financed by Mozambique's own resources.

Additional funds are being sought.

7.5.2 Development of Postal Training in Mozambique



Estimated Costs
Total : USD 1.0 million
Foreign : USD 1.0 million
Local : USD 0.0 million

Funding Secured
Foreign : USD 0.0 million
Local : USD 0.0 million

Funding Under Negotiation
Total : USD 0.0 million

Financing Gap:
Total : USD 1.0 million

Executing Agency:
Postal Department, Mozambique

Start : 1990
Duration: 1,5 years

Objectives : The project aims at improving the performance of the existing training centre by provision of instructors and purchase of training equipment.

Description: To meet increased staff requirements and to eliminate the acute shortage of skilled postal staff it has become necessary to improve training and training facilities in Maputo.

Following activities are included in the plan :

- modification of existing space to provide an auditorium;
- provision of a dummy office for practical training;
- procurement of training equipment;
- technical assistance for the development of training courses, and training of instructors, personnel dealing with international dispatches etc;

Status : By own resources the rehabilitation of the Postal School in Maputo has already started. One postal training course has been carried out (june 1988) supported by Portugal.

A detailed implementation plan has been prepared. Funds are being sought for implementation. Funding is being sought.

In its plans for 1991 FINNPOST has included an eight weeks postal management course in English to be arranged in Africa. The majority of the course seats will be given to participants from the SADCC countries.

A seminar in Postal Statistics will be arranged in Tanzania for participants from Tanzania in 1990. It is a pilotcourse and the ambition is to carry through similar courses in all SADCC countries. The pilot co 'll be conducted by a Swedish expert whose cost is covered by Sweden. Ad nal funding is being sought.

September 1990

Section Three

Criteria and Procedures for the Selection and Approval of Projects

ANNEX I

CRITERIA AND PROCEDURES FOR THE SELECTION AND APPROVAL OF PROJECTS

1. INTRODUCTION

The criteria and procedures for the selection and approval of projects are intended to safeguard the coherence and integrity of the SATCC within the framework of the objectives of SADCC. They shall, therefore, guide the SADCC Members States, the Sector Coordinator and the Cooperating Partners in the presentation of project proposals for inclusion in the SATCC programme.

2. GENERAL CRITERIA

The Sector of Transport and Communications has been identified as a key element in achieving the overall objectives of SADCC. Projects in this Sector play a vital role in national and regional economic development. Hence, the first requirement for a project to be eligible for inclusion in the SATCC programme is that it is consistent with the overall objectives of SADCC, and that it contributes to the solution of national and regional transport and communications problems.

The following general criteria shall be applied in assessing projects for inclusion in the SATCC Programme:

i) in keeping with overall SADCC objectives, projects should aim at the reduction of economic dependence of the Member States, and/or the enhancement of genuine and equitable regional integration;

ii) reflecting the regional character SADCC projects should be able to benefit more than one Member State;

iii) to ensure consistence with national development objectives, and to assure government commitment, projects proposed for regional cooperation should also be part of the National Development Plans of the Member States concerned;

iv) to ensure the comprehensiveness of the overall programme, all projects of regional benefit should be included in the programme, even if additional outside financing is not required;

v) in specific transport modes, projects should generally aim at improvement of facilities and services defined as regional (e.g. regional ports, railways, trunk road network, etc;

vi) minor transport elements of projects in other sectors should generally be dealt as integral parts of those sectors, and not included in the SATCC programme.

3. GUIDELINES FOR PROJECT PREPARATION

While the project proposals should first satisfy the above general criteria, they should further be assessed in terms of their specific objectives, priority status in the regional system of transport and communications, potential benefits and probability of successful implementation. To permit such assessment to be made in an adequate manner, the following criteria should be considered in the course of preparation of projects:

i) cost reduction, improvement of service and institutional strengthening;

ii) relationship and compatibility with existing or planned national transport and communications systems;

iii) relationship and compatibility with existing or planned regional transport and communications systems;

iv) financial implications of the project, including costs of both implementation and subsequent operation, and the measures for securing the necessary funds, particularly Member States' provision for local costs; and,

v) manpower requirements, both for implementation and subsequent operation and where inadequate manpower is anticipated, provisions should be made to accommodate this deficiency.

4. PROCEDURES

4.1 Admission of New Projects

i) The Member State/Entity proposing a new project should, as a rule, present the project to SATCC at least six months in advance of the meeting where it will be considered, with adequate documentation and information to cover the aspects set out in Sections 2 and 3 above;

ii) The project proposal should be presented in the standard form used for SATCC project documentation, and circulated to the Member States by SATCC well in advance of the meeting where it is to be considered;

iii) Only in exceptional circumstances such as in case of emergency projects, could the procedures in (i) and (ii) above be waived;

iv) Member States/Entities proposing new projects may request technical assistance from the SATCC Technical Unit for the preparation of project documentation, if required;

v) All proposals presented to SATCC should include an evaluation and recommendations by SATCC/Technical Unit;

vi) Each proposal shall be considered by the Coordinating Committee, which shall make appropriate recommendations to the Committee of Ministers, taking into account the information presented, the recommendations of the Technical Unit, and the concrete circumstances relevant to the project;

vii) The final decision on the admission of a new project shall rest with the Council of Ministers.

4.2 **Review of Existing Projects**

i) All projects already in the programme, which are not being implemented, should be reviewed from time-to-time on the basis of criteria in Sections 2 and 3 above.

ii) Projects considered to be no longer fulfilling the criteria should be withdrawn from the programme. The decision on the removal of projects from the programme shall rest with the Council of Ministers, on the recommendation of the SATCC COmmittee of Ministers.

iii) Concerning on-going projects where major changes should be communicated to SATCC by the Member State(s) concerned, to facilitate new funding and other appropriate arrangements.

5. **PROCEDURE FOR CONTACTS WITH THE COOPERATING PARTNERS**

Sectoral programmes and projects are, generally communicated through the sectoral programme document produced for the Annual Consultative Conference. However, in between Annual Consultative Conferences, specific projects may be communicated to interested cooperating partners directly.

In the case of a project located in one country, the Member State which is host for the project, assisted by the SATCC Technical Unit, will coordinate contact with interested cooperating partners. Both the SATCC Technical Unit and other interested Member States must be kept fully informed of progress in consultations on the implementation of projects, either by direct contact or usually through progress reports submitted to Sectoral meetings. In the case of projects involving more than one country, and general coordination activities or projects involving all Member States, the SATCC Technical Unit, assisted as appropriate by the Member States, will coordinate contacts.

6. AGREEMENT AND CONTRACT PROCEDURES

The Council of Ministers has agreed that as a matter of general principle, SADCC project agreements should be signed be the Member States directly involved and cooperating partners, and witnessed by the SATCC. Such agreements should spell out the rights and obligations of all parties and, in particular, should indicate clearly the reporting and monitoring procedures.

7. PROJECT IMPLEMENTATION, OPERATION AND MONITORING

Implementation refers to the preparation and execution of a project, but does not include subsequent operation and maintenance (e.g. of a plant).

Member States involved in each project, with the assistance of the SATCC Technical Unit, are responsible for its implementation and operation, through their appropriate institutions.

The SATCC Technical Unit will provide the required assistance to Member States in all stages of the project.

Financial responsibility for each project will be of the Member State (s) involved, and each Member State will be responsible for servicing its financial commitments.

It will, in a manner of cases, be necessary to have a project steering Committee, which is responsible for overseeing and monitoring the implementation of the project and serves to give policy guidance and control. The steering committee would have the following members:

- representatives of the Member Government(s) responsible and involved;
- a representative of the cooperating partners supporting the project; and,
- a representative of SATCC Technical Unit.

The executing agency, implementing the project, will not be a member of the Committee, but will participate in the meetings for reporting and liaison purposes.

When a project involves simultaneous and inter-dependent implementation in more than one country, the steering committee will ensure the overall coordination of the implementation of the various parts of project.

The Sector Coordinating Country is responsible for reporting on the status and progress of sectoral programme and project implementation and related activities to the Coordinating Committee and the Committee of Ministers; and to the Council of Ministers and Summit of Heads of State and Government, at the scheduled meetings.

Annex 2

Summary Status of Projects

Project	Project Title	Estimated Cost US$ Million Total	Foreign	Local	Funding Secured & Source US$ Million	Funding under Negotiation US$ Million	Financing Gap US$ Million	Comments/Status
TRANSPORT AND COMMUNICATIONS								
TABLE 2(A): REGIONAL OPERATIONAL COORDINATION PROJECTS								
MULTIMODAL								
0.0.1	Technical Assistance to the SATCC	10.00	9.50	0.50	1.00 (ITA) 0.10 (CAN) 0.10 (FRA) 0.30 (ITU) 0.50 (SADCC)	3.00 (Nordics)	5.00	Period 1981-91.
0.0.2	Operational Coordination Development Programme	(4.70)	(4.70)	-	(3.40)	(0.3)	(1.00)	Period 1983-1990.
(1)	Road Infrastructure	0.70	0.70	-	0.70 (DEN)	-	-	Period 1985-89
(2)	Road Traffic & Transport	1.10	1.10	-	1.10 (NOR)	-	-	Period 1984-90
(3)	Railway Administrations	0.80	0.80	-	0.80 (DEN)	-	-	Period 1985-88
(4)	Civil Aviation Administration & Spare Parts Task Group	0.70	0.70	-	-	-	0.70	Financing for two years being sought.
(5)	National Airlines	-	-	-	-	-	-	Financed under 0.0.1 from July 1985
(6)	Port Administration	0.60	0.60	-	0.60 (NOR)	-	-	Period 1985-90.
(7)	Shipping, Clearing and Forwarding	-	-	-	-	-	-	Financed under Project 0.0.1
(8)	Telecomunications (SATA)	0.50	0.50	-	0.20 (CAN)	-	0.30	Financed under Project 0.0.5.
(9)	Meteorology	-	-	-	-	-	-	Financed under Project 0.0.1.
(10)	Postal Services	-	-	-	-	-	-	Financed under Project 0.0.1.
(11)	Survey for Regional Frequency Management and Radio Monitoring	0.30	0.30	-	-	0.30 (GTZ)	-	
0.0.4	Transit Transport Project	10.30	10.30	-	3.50 (UK) 1.30 (US)	-	5.50	Covers period 1984-91
0.0.5	SATCC Technical Services Funds	14.40	14.00	-	11.00 (CAN) 1.00 (NOR)	1.60 (FRG) 0.80 (AUS)	-	
0.0.6	SATCC Transport Statistics Data Base	-	-	-	-	-	-	Financed under Project 0.0.5, Studies completed. System being implemented.
(01)	Telecommunications Statistics Data Base System	0.10	0.10	-	0.10 (SWE)	-	-	Studies being prepared.

0.0.7	SATCC Housing in Maputo	2.20	2.20	-	-	-	2.20	Funding sought.
0.0.8	Regional Transport Operations Plan	-	-	-	-	-	-	Financed under Project 0.0.5. Draft final report prepared.
0.0.9	Package of Transport Statistics Programmes	2.10	2.10	-	-	-	2.10	Funding sought.
ROADS								
1.0.1	Package of Road Safety Programmes	(14.00)	(14.00)	-	-	(1.80)	(12.20)	Preparation of country programmes is ongoing.
(1)	Road Safety Programme, Angola	2.00	2.00	-	-	-	2.00	
(3)	Road Safety Programme, Lesotho	2.00	2.00	-	-	-	2.00	Programme prepared.
(4)	Road Safety Programme, Malawi	2.00	2.00	-	-	-	2.00	Programme prepared.
(5)	Road Safety Programme, Mozambique	1.80	1.80	-	-	-	1.80	Programme prepared.
(6)	Road Safety Programme, Swaziland	1.80	1.80	-	-	-	1.80	Programme prepared.
(7)	Road Safety Programme, Tanzania	1.60	1.60	-	-	-	1.60	Programme prepared.
(8)	Road Safety Programme, Zambia	1.80	1.80	-	-	1.80 (FIN)	-	Programme prepared.
(9)	Road Safety Programme, Zimbabwe	1.00	1.00	-	-		1.00	
1.0.2	Package of Weighbridge Programmes	(2.30)	(1.80)	(0.50)	(0.50) (SADCC)	-	(1.80)	Descriptions have been prepared.
(1)	Angola	0.40	0.30	0.10	0.10 (ANG)	-	0.30	
(2)	Botswana	0.20	0.20	-	-	-	0.20	
(3)	Lesotho	0.10	0.10	-	-	-	0.10	
(4)	Malawi	0.20	0.20	-	-	-	0.20	
(5)	Mozambique	0.20	0.20	-	-	-	0.20	
(6)	Swaziland	0.30	0.20	0.10	0.10 (SWA)	-	0.20	
(7)	Tanzania	0.30	0.20	0.10	0.10 (TAN)	-	0.20	
(8)	Zambia	0.30	0.20	0.10	0.10 (ZAM)	-	0.20	
(9)	Zimbabwe	0.30	0.20	0.10	0.10 (ZIM)	-	0.20	
1.0.3	Implementation of Harmonized Road Maintenance Management System in SADCC Countries	2.60	2.40	0.20	0.20 (SADCC)	0.50 (DEN)	1.90	Funding sought.
RAILWAYS								

2.0.8	Study on Rail Wagon Standardization & Wagon Spare Parts	-	-	-	-	-	-	Funded under Project 0.0.5
2.2.10	Equipment for Maintenance Depots for Botswana Railways	4.20	4.20	-	-	-	4.20	Funding sought.
PORTS AND WATER TRANSPORT								
3.0.3	Marine Safety Development Programme for SADCC Coastal States	0.30	0.30	-	-	-	0.30	TOR revised to cover all SADCC Coastal Countries. Financing being sought.
3.0.4	Package of Port Statistics Programmes	1.10	1.10	-	-	-	1.10	Detailed project descriptions are being prepared.
CIVIL AVIATION								
4.0.1 (2)	Expansion of DCA Flight Calibration Unit, Tanzania	6.30	6.30	-	-	-	6.30	Study financed by FINNIDA. Financing sought for implementation. Background document prepared by ICAO.
4.0.3	Study on Coordinated Use of Aircraft Maintenance Facilities	0.30	0.30	-	-	-	0.30	Funding is sought.
4.0.5	Study on General Aviation Activities	0.40	0.40	-	-	-	0.40	Funding sought.
4.0.7	Updating the Aeronautical Information Service	1.70	1.70	-	-	-	1.70	Funding sought.
4.0.10	Study of Joint Use of Wide Body Aircraft	1.00	1.00	-	-	-	1.00	Funding sought.
4.0.11	Review of SADCC Airline Industry	0.60	0.60	-	0.60	-	-	World Bank to carry out study.
TELECOMMUNICATIONS								
5.0.3	Study on AXE 10 Repair Centre	0.40	0.40	-	-	-	0.40	Funding sought.
5.0.4	Implementation Plan for Regional Earth Station Connectivity Project, (1989-1993)	16.00	16.00	-	0.50 (CAN) 0.10 (USA)	-	15.40	Financed under Project 0.0.5. Financing is required for project implementation.
5.0.5	Study on the Harmonization of Telephone and Telex Tariffs for the Sub-region	0.30	0.30	-	0.10 (CAN) 0.10 (ITU)	-	0.10	Undertaken by ITU and CIDA with financing from Project 0.0.5. Financing required to complete the study.
5.0.6	Study on the Development of a Regional Manufacturing Strategy	0.20	0.20	-	0.10 (CAN)	-	0.10	Funding sought.
5.0.7	Model Study on Maintenance Procedures and Schedules for PAMAFTEL Terrestrial Microwave Radio Systems	0.10	0.10	-	-	-	0.10	Funding sought.
5.0.8	Regional Data Communication Strategy	0.10	0.10	-	-	-	0.10	Funding sought.

	Study							
5.0.9	Study on Optimisation of Regional Switching and Signalling Facilities	0.10	0.10	-	-	-	0.10	Funding sought.
5.0.10	Study for Establishment of Regional Maintenance/Repair Workshops	0.10	0.10	-	-	-	0.10	Funding sought.
5.0.11	Workshop/Seminar on Digital Synchonisation Planning	0.20	0.20	-	-	-	0.20	Funding sought.
	Sub-total	96.10	94.90	1.20	24.50	8.00	63.60	
TABLE 2(B): TRAINING PROJECTS								
0.0.3	Training Development Programme	(1.50)	(1.50)	-	(0.70)	(0.20)	(0.60)	
(1)	Road Traffic & Transport Training Study and Task Group	-	-	-	-	-	-	Study completed January 1990, financed under Project 0.0.5. See project 1.0.4
(4)	Training Course in National Telecommunications Network Planning	0.50	0.50	-	0.50 (SWE)	-	-	First course run by SIDA in 1989 and follow-up course in 1990.
(5)	Satellite Communications Technology Course	0.20	0.20	-	-	-	0.20	First course and second course financed under Project 0.0.5. Follow-up study survey undertaken by Canada.
(7)	Workshop/Seminar on Telecommunications Switching Signalling Systems in the Sub-region	0.10	0.10	-	-	-	0.10	Funding sought.
(8)	Local Network (External Plant) Planning Course	0.20	0.20	-	-	0.20 (ITA)	-	Italy financed the first course. Funding sought for follow-up course in 1989.
(9)	Telecommunications Training Needs Survey	0.10	0.10	-	-	-	0.10	Funding sought.
(10)	Telecommunications Course in Traffic, Tariffs & Accounting Procedures	0.30	0.30	-	0.10 (CAN) 0.10 (ITU)	-	0.10	Funding sought.
(11)	Seminar on Rural Telecommunications Planning	0.10	0.10	-	-	-	0.10	Funding required.
1.0.4	Task Group for the Road Transport Training Plan	-	-	-	-	-	-	Follow-up of Project 0.0.3(1). Financed under P0.0.5, to start February 1990.
2.0.6	Development of Railway Training, Regional	8.60	8.60	-	0.60 (FRG)	8.00 (SWI)	-	Based on Study on Railway Training Programme, Project 2.0.2.
(1)	Study into the Establishment and Location of a Regional Railway Management Development Centre	-	-	-	-	-	-	Completed.

2.0.7	Seminar on Marketing for the SADCC Port and Railway Administration	-	-	-	-	-	-	The seminar funded through the Canadian Technical Services Fund, held in October 1989, project 0.0.5.
2.5.13	Development of Railway Training for Portuguese Speaking Personnel	25.30	24.20	1.10	14.30 (FRA) 2.50 (POR) 7.40 (EEC) 1.10 (MOZ)	-	-	1st Phase completed.
2.7.3	Technical Assistance & Management Training to Swaziland Railway	4.70	3.50	1.20	3.50 (USA) 1.20 (SWA)	-	-	Under implementation.
3.5.5	Port Staff Training Institute, MOZAMBIQUE	6.80	5.80	1.00	5.80 (NOR) 1.00 (MOZ)	-	-	In progress. Administration and Technical Assistance through ILO with NORAD funding.
4.0.6	Civil Aviation Manpower & Training Requirements Survey	0.30	0.30	-	0.30 (ICAO)	-	-	For updating the Angolan port.
4.6.1	ATC Training, Namibia	1.00	1.00	-	-	-	1.00	Funding sought.
4.5.4	SADCC Boeing 737 Flight Training Centre	3.60	3.60	-	-	-	3.60	Funding sought.
4.9.5	Improvement of Zambia Air Services Training Institute (ZASTI)	1.70	1.70	-	-	-	1.70	Project documentation to be revised.
5.1.6	Expansion of Telecommunication Training Centre, Angola	21.50	21.00	0.50	0.50 (ANG)	-	21.00	Funding sought.
5.4.4	Expansion of Telecommunications Training Centre, MPO, Malawi	5.00	1.00	4.00	4.00 (MAL)	-	1.00	Funding sought.
6.0.1	Meteorological Expert Services and Fellowships	6.30	6.30	-	5.00 (FIN)	-	1.30	Additional funding sought.
7.0.1	Postal Training Development Programmes	1.10	1.00	0.10	0.20 (FIN) 0.10 (SADCC)	-	0.80	Two management courses financed by Finland. Instructors course financed by Norway. Additional funding sought.
7.1.2	Development of Postal Training in Angola	2.70	2.20	0.50	0.50 (ANG)	-	2.20	Funding sought.
7.3.1	Postal Training School, Lesotho	0.20	0.20	-	-	-	0.20	Funding sought.
7.4.2	Upgrading of Postal Wing of the MCTC in Blantyre, Malawi	0.20	0.20	-	-	-	0.20	Funding being sought.
7.5.2	Development of Postal Training in Mozambique	1.00	1.00	-	-	-	1.00	Funding sought.
	Sub-total	91.50	83.10	8.40	48.70	8.20	34.60	

TABLE 2(C): MAPUTO PORT TRANSPORT SYSTEM PROJECTS

ROADS								
1.3.1	Upgrading of the Road Mohales Hoek - Quthing - Qacha's Nek. Lesotho	89.00	81.00	8.00	8.00 (LES) 15.50 (EEC) 34.00 (USA) 5.00 (DEN)	-	26.50	Additional funding required to complete the project.
1.3.2	Upgrading and Reconstruction of the Road Taung - Mokhotlong - Sani Top. LESOTHO	50.00	41.00	9.00	9.00 (LES)	-	41.00	Feasibility study & engineering design completed (financed by UK). Financing is being sought.
1.3.3	Upgrading of the Road Thaba Tseka-Taung-Mpiti. LESOTHO	35.70	28.50	7.20	7.20 (LES)	-	28.50	Feasibility study financed by Canada has been completed. Funding for the construction of the road is being sought.
1.3.4	Construction of a New Road Ramabanta-Semokong-Sekake. LESOTHO	36.80	29.40	7.40	7.40 (LES) 0.30 (FRG)	-	29.10	Engineering design of the Ramabanta-Semonkong section completed, financed by FRG. Funding sought for project.
1.3.5	Upgrading of the Road Mokhotlong-Oxbow. LESOTHO	51.30	44.00	7.30	7.30 (LES) 22.00 (ADB) 10.00 (BADEA) 2.00 (OPEC)	10.00 (KUW)	-	Design completed. Additional funding is sought.
1.5.4	Rehabilitation of the Road Maputo - Swaziland. MOZAMBIQUE	21.00	17.00	4.00	0.80 (SWE) 4.00 (MOZ)	-	16.20	Works on Matola bridge completed. Resealing in progress. Additional funding being sought.
1.5.6	Road Linking Southern Zimbwe with the Maputo Area, Mozambique	25.00	17.50	7.50	7.50 (MOZ)	-	17.50	Financing sought urgently for upgrading service road for Limpopo Railway (cf. Project 2.5.6(03)).
1.7.1	Rehabilitation and Upgrading of the Road Mozambique border at Lomahasha-Siteki-Big Bend.	22.00	18.70	3.30	5.70 (ADB) 3.20 (SWE) 3.30 (SWA)	-	9.80	Work completed on section Lomahasha-Siteki. Financing is being sought for the section Siteki-Big Bend.
1.7.2	Improvement of Mbabane-Manzini Road, SWAZILAND	28.90	23.10	5.80	5.80 (SWA)	-	23.10	Financing sought.
RAILWAYS								
2.2.1	Rehabilitation of the Main Railway Line BOTSWANA	(95.00)	(76.60)	(19.00)	(3.00) (CHI) (19.00) (BOT)	-	(73.00)	See phasing of project. Funding sought.
(1)	Section 1: Gaborone - Southern Border	-	-	-	-	-	-	Completed, financed by China & Botswana.
(2)	Section 2: Francistown - Northern Borde	15.00	12.00	3.00	3.00 (CHI) 3.00 (BOT)	-	9.00	Canada is financing study on Section 2 & 3 under Project 0.0.5, US$0.15m.
(3)	Section 3: Gaborone - Francistown	80.00	64.00	16.00	16.00 (BOT)	-	64.00	See note for Section 2 above.
2.2.2	Rehabilitation of Railway Telecommuni-	4.10	4.10	-	4.10 (SWE)	-	-	Project completed.

	cations Facilities. BOTSWANA							
2.2.4	Renewal of Train Working System. BOTSWANA	5.00	4.70	0.30	4.70 (SWE) 0.30 (BOT)	-	-	Project completed.
2.2.6	Procurement of Railway Rolling Stock, BOTSWANA	38.10	37.60	0.50	18.50 (JAP) 0.50 (BOT)	-	19.10	Goods Wagons being manufactured in Zimbabwe. In addition, 20 refrigerated containers financed by Denmark. Funding needed for passanger coaches.
2.2.8	Exchange Yard for Botswana Railways at Rakhuna, BOTSWANA	1.60	1.20	0.40	0.40 (BOT)	-	1.20	Funding sought.
2.2.9	Rescue Crane for Botswana Railways, BOTSWANA	2.00	2.00	-	2.00 (FIN)	-	-	Under implementation.
2.5.1	Rehabilitation of the Mozambique Swaziland Railway	(60.00)	(43.00)	(17.00)	(17.00) (ITA) (11.00) (SWA) (6.00) (MOZ)	-	(26.00)	Additional funding being sought.
(2)	Rehabilitation of the Machava-Swaziland Border	23.00	17.00	6.00	17.00 (ITA) 6.00 (MOZ)	-	-	Under implementation.
(3)	Rehabilitation of Matsapha-Mozambique Border	37.00	26.00	11.00	11.00 (SWA)	-	26.00	Study completed, financed by Italy. Additional funding being sought.
2.5.6	Railways in Southern Mozambique	-	-	-	-	-	-	See phasing of project.
(3)	Rehabilitation of the Maputo - Chicumlacuala Railway	(224.80)	(216.80)	(8.00)	(124.30) (UK) (8.00) (MOZ)	(1.10)	(91.40)	A Study on Rehabilitation has been completed. Additional funding sought.
(31)	Phase 1: Track Renewal for Resleepering, Welding Plant, Communications, etc.	27.00	25.00	2.00	25.00 (UK) 2.00 (MOZ)	-	-	Phase I completed.
(32)	Phase 2-A: Completion of Rehabilitation including Motive Power & Rolling Stock	107.10	102.00	5.10	5.10 (MOZ) 99.30	1.10	1.60	Ongoing.
(33)	Phase 2-B: Additional Support Programme	(90.7)	(89.8)	(0.9)	(0.9) (MOZ)	-	(89.8)	
(A-BR1-3)	Housing, Buildings	3.50	3.00	0.50	0.50 (MOZ)	-	3.00	Funding sought.
(A-LO1-3)	Locomotives: Spares, Materials and Technical Assistance	55.70	55.50	0.20	0.20 (MOZ)	-	55.50	Funding sought.
(A-WA1-3)	Wagons: Spares, Materials & Technical Assistance	31.50	31.30	0.20	0.20 (MOZ)	-	31.30	Funding sought.
(C-BG)	Bridge Repairs	4.40	4.20	0.20	0.20 (MOZ) 3.40 (EEC) 0.80 (UK)	-	-	
(C-BR1-3)	Other Buildings and Services, Water, Power Generation	3.90	3.70	0.20	0.20 (MOZ) 2.10 (EEC)	-	1.60	
(C-FC-1)	Technical Assistance for Financial	1.20	1.10	0.10	0.10 (MOZ)	1.10 (USA)	-	

	Control							
(C-LO1-6)	Locomotives: Spares, Tools, Workshops, Technical Assistance	8.80	8.80	-	8.80 (USA)	-	-	US$ 6.4 million under Project 2.5.12.
(C-RD1-2)	Rail Depot: Equipment	2.20	1.00	1.20	0.80 (UK) 0.20 (CAN) 1.20 (MOZ)	-	-	
(C-OM-1)	Workshop Study	0.60	0.60	-	0.60 (DEN)	-	-	
(C-QO1-2)	Quarry Equipment and Ballast	2.60	2.00	0.60	2.00 (UK) 0.60 (MOZ)	-	-	
(C-CR-1)	Rescue Crane and Rerailing Equipment	5.30	5.30	-	5.30 (FRG)	-	-	
(C-RD-1)	Road Maputo-Chokwe-Chicualacuala	-	-	-	-	-	-	US$ 25 million under Project 1.5.6.
(C-RM-4)	Track Renewal by Brigada de Melhoramento do Sul (BMS)	10.20	9.50	0.70	0.70 (MOZ) 5.40 (EEC) 0.60 (CAN) 3.50 (UK)	-	-	
(C-RZ1-5)	Concrete Sleepers, Ballast, Track Renewal by National Railways of Zimbabwe	31.70	31.10	0.60	(9.00) (CAN) (3.60) (UK) 3.60 (BOT) 12.20 (FRG) 1.20 (AUSr) 1.50 (SWE) 0.60 (MOZ)	-	-	
(C-SC1-2)	Sleeper & Inventory Control	1.80	1.50	0.30	1.50 (USA) 0.30 (MOZ)	-	-	
(C-SF1-2)	Sleeper Factory/Sleepers, Ballast	3.80	3.30	0.50	0.50 (MOZ) 3.30 (UK)	-	-	
(C-ST1-2)	Signal System Maputo-Machava	4.80	4.80	-	4.80 (FRG)	-	-	
(C-TA1-4)	Technical Assistance to BMS and CFM	8.20	7.70	0.50	5.50 (UK) 0.80 (POR) 0.50 (MOZ) 1.40 (IDA/IBRD)	-	-	
(C-TE1-2)	Equipment & Tools for Track Maintenance	7.80	7.80	-	4.60 (EEC) 3.20 (CAN)	-	-	
(C-TL-1)	Telecommunications	3.70	3.50	0.20	3.50 (UK) 0.20 (MOZ)	- -	- -	
(C-TM1-3)	Steel Sleepers, Rails, Turnouts	6.10	6.10	-	4.90 (CAN) 1.20 (EEC)	-	-	
(C-WA1-5)	Wagons: Spares, Tools, Buildings, Technical Assistance	-	-	-	-	-	-	US$ 10.6 million under Project 2.5.8

2.7.1.	Rolling Stock for Swaziland Railway	16.50	16.00	0.50	0.50 (SWA)	-	16.00	Funding sought.
2.7.4	Dieselization of Swaziland Railway	40.00	40.00	-	-	-	40.00	Funding sought.
2.7.5	Provision of Operating, Security and Safety Related Equipment for Swaziland Railway	2.00	2.00	-	-	-	2.00	Funding sought.
2.7.6	Integrated Telecommunications for Swaziland Railway	2.50	2.50	-	-	-	2.50	Funding sought.
PORTS & WATER TRANSPORT								
3.5.1	Maputo Port, Mozambique	(121.30	(115.20)	(6.10)	(9.00) (ITA) (1.80) (UK) (6.10) (MOZ)	-	104.40	Additional funding being sought.
(1)	Feasibility Study on Improvement of the Entrance Channel to Maputo Port	1.70	1.40	0.30	0.30 (MOZ)	-	1.40	Dredging of existing channel to 9.4m started July 1987, going on.
(2)	Matola Coal Terminal, Mozambique	90.60	89.00	1.60	1.60 (MOZ)	-	89.00	Phase 1 (US$ 1.6 million) completed. Phases 2 & 3 (US$ 89.00 million) will be initiated when warranted by foreseen increase in traffic.
(3)	Container Terminal Equipment and Management Assistance, Port of Maputo	29.00	24.80	4.20	9.00 (ITA) 1.80 (UK) 4.20 (MOZ)	-	14.00	US$ 9.00 million Italian credit for cranes and other equipment. UK is financing a Management Assistance Scheme over 5 years.
(4)	Maputo Port (Other Projects), Mozambique	-	-	-	-	-	-	
	Sub-total	972.60	861.30	111.30	394.20	11.10	567.30	
TABLE 2(D): BEIRA PORT TRANSPORT SYSTEM PROJECTS								
0.5.1	Multimodal projects in Beira Port Transport System Development Plan	(47.10)	(41.40)	(5.70)	(38.00)	(6.00)	(3.10)	
PR-M-2	Support to Workers	-	-	-	-	-	-	
PR-M-2	B) Workers Transport	1.10	1.10	-	1.10 (SWE)	-	-	5 Buses arrived August 1988.
PR-M-2	C) Workers Housing	17.60	11.90	5.70	11.90 (FIN) 5.70 (MOZ)	-	-	Implementation started - Plan controlled.
PR-M-4	Core Staff for Beira Corridor Authority	5.80	5.80	-	5.80 (NORDICS)	-	-	The expatriate team is fully staffed.
PR-M-6	Training Facilities	4.80	4.80	-	4.80 (IDA/IBRD)	-	-	
PR-M-8	Technical Assistance to CFM (C) Central Services	10.20	10.20	-	6.70 (IDA/IBRD) 0.40 (UNDP)	-	3.10	

PR-M-9	Technical Assistance to Implementation of Management Information System (MIS)	6.00	6.00	-	-	6.00 (IDA/IBRD)	-	
PR-M-10	Housing for Technical Assistance Personnel	1.50	1.50	-	1.50 (IDA/IBRD)	-	-	
PR-M-11	Studies A) Private Sector Involvement B) Incentive Scheme	0.10	0.10	-	0.10 (IDA/IBRD)	-	-	
1.5.1	Road Projects in Beira Port Transport System Development Plan	(42.80)	(39.90)	(2.90)	(21.30) (MOZ)	-	(21.50)	Additional funding being sought.
RD-CE-1	Beira-Machipanda	8.60	7.20	1.40	7.20 (SWE) 1.40 (MOZ)	-	-	
RD-CE-1	A.2. Emergency Repairs, Manica	5.40	5.40	-	5.40 (EEC)	-	-	
RD-CE-1	B) Equipment and Technical Assistance to Road Maintenance Units	4.80	4.80	-	4.80	-	-	
RD-CE-1	C) Beira-Machipanda, Reconstruction	14.50	14.50	-	1.00 (ADB)	-	13.50	Design being made, financed by ADB.
RD-CE-2	Lusaka-Kafue Junction	-	-	-	-	-	-	Included in Project 1.8.3
RD-CE-3	Chimcio-Changara	3.00	3.00	-	-	-	3.00	
RD-CE-4	Matundo-Chiuta	6.50	5.00	1.50	1.50 (MOZ)	-	5.00	
1.9.4	Rehabilitation of Kafue-Chirundu Road, Zambia	38.00	35.00	3.00	3.00 (ZAM) 13.00 (USA)	-	22.00	Works about to be completed. Additional funding being sought.
1.10.1	Rehabilitation of Harare-Chirundu Road, ZIMBABWE	2.80	1.20	1.60	1.20 (IDA/IBRD) 1.60 (ZIM)	-	-	Funding sought.
1.10.3	Upgrading of Eastern end of Harare-Mutare-Mozambique Border Road, Zimbabwe	22.00	18.00	4.00	0.60 (FIN) 4.00 (ZIM)	-	17.40	Finland financing design, which started in October 1989. Additional funding being sought.
2.5.3	Railway Projects in Beira Port Transport System Development Plan	(168.30)	(150.60)	(17.70)	(115.20)	(30.10)	(17.40)	Additional funding being sought.
R-CE-3	Track Rehabilitation Blentyre - Border	15.50	12.40	3.10	3.10 (MAL)	12.40 (UK)	-	Ongoing
R-CE-4	Rehabilitation Dondo-Vila Nova/Moatize	83.80	70.80	13.00	75.20	7.80	0.80	Funding sought.
R-CE-4	A) Quarry & Sleeper Factory	19.00	19.00	-	19.00 (ITA)	-	-	About to be completed.
R-CE-4	B) Rehabilitation of Dondo-Inhamitanga (156 Km)	64.00	51.00	13.00	43.20 (ITA) 13.00 (MOZ)	7.80 (OPEC)	-	
R-CE-4	C) Studies for Restauration & Strenghtening of Zambezi Bridge	0.80	0.80	-	-	-	0.80	
R-CE-5	Study, Rail Link Kafue - Lions Den	0.80	0.80	-	-	-	0.80	Funding sought.

R-CE-6	Line Doubling Beira to Dondo	8.00	6.40	1.60	1.60 (MOZ)	-	6.40	Funding sought.
R-CE-7	Track Maintenance CFM(C)	3.50	3.50	-	1.00 (AUS)	2.50 (CAN)	-	Under negotiation.
R-ME-1	Scrapping, Salvaging of Wagons and Locomotives, Rehabilitation of Wagons. Conversion to Roller Bearings CFM(C)	2.50	2.50	-	-	-	2.50	Foreign component only for convertsion to roller bearings.
R-ME-2	C) Acquision of Shunting	5.40	5.40	-	-	5.40 (IDA/IBRD)	-	New main line locomotives under Project 2.5.12.
R-ME-3	Replacement of Malawi Railway Wagons	2.00	2.00	-	-	-	2.00	
R-ME-4	Rehabilitation of Locomotive Workshops CFM(C)	5.00	5.00	-	5.00 (USA)	-	-	
R-ME-5	Extension of Limbe Workshop	0.60	0.60	-	0.60 (UK)	-	-	
R-ME-6	Facilities, Spares, Equipment for CFM(C) Workshops	6.20	6.20	-	-	-	6.20	
R-ME-7	Rescue Cranes and Rerailing Equipment	2.00	2.00	-	2.00 (UK)	-	-	Delivery of cranes in 1990.
R-OP-2	Electrification Study	0.70	0.70	-	-	-	0.70	
R-ST-2	Radio Telecommunication System for Beira - Machipanda	6.40	6.40	-	6.40 (ITA)	-	-	
R-ST-3	Train Control System CFM(C)	4.80	4.80	-	2.80 (ITA)	2.00	-	Waiting for a complementary financing agreement.
R-ST-4	Wagon Control System CFM(C)	1.00	1.00	-	-	-	1.00	System analysis/design ongoing.
R-ST-5	Replacement of Railway Telephone Exchanges CFM(C)	0.50	0.50	-	-	-	0.50	
R-ST-6	Solar Power Panels, Blantyre to Border	0.10	0.10	-	-	-	0.10	
R-TA-1(A)	Technical Assistance to CFM (C) Rail Division	3.50	3.50	-	3.50 (SPA)	-	-	
R-TA-1	Railway Training	5.00	5.00	-	5.00 (IDA/IBRD)	-		
R-TA-2	Technical Assistance to Malawi Railways	2.00	2.00	-	-	-	2.00	
R-TA-3	Rehabilitation of CFM Wagons	3.20	3.20	-	3.20 (DEN)	-	-	
R-TA-1(B)	Technical Assistance to Technical Departments	5.80	5.80	-	5.80 (IDA/IBRD)	-	-	
3.5.2	Port Projects in Beira Port Transport Development Plan	(418.40)	(398.70)	(19.70)	(173.30)	(60.60)	(184.50)	Estimates of costs & funding represent the total of the sub-projects listed belo
P-A-1	Channel Dredging to CD-8 metres, Beira Port	15.60	15.60	-	15.60 (NET)	-	-	Dredging to 8 metres, started January 1989.

P-A-2	Navigational Aids, Beira Port	1.70	1.70	-	0.90 (SWE)	0.80 (SWE)	-	Included in 1st phase of Project 3.5.4.
P-A-3	Maintenance Dredging	1.40	1.40	-	-	1.40 (EEC)		
P-CE-1	A) Multipurpose & Container Handling Terminal (Berths 2-5)	62.20	62.00	0.20	57.60 (EEC) 0.20 (MOZ) 2.70 (NET)	1.70 (NET)	-	Works in progress. Supervision financed by the Netherlands.
P-CE-1	B) Maintenance Building	1.90	1.90	-	1.90 (FIN)	-	-	In progress.
P-CE-1	C) Transit Shed	3.90	3.90	-	3.90 (FIN)	-	-	Start of construction March 1990.
P-CE-1	D) Administration Building in Gate House	1.20	1.20	-	-	1.20 (FIN)	-	
P-CE-2	New Oil Terminal, Beira Port	22.80	22.80	-	10.80 (NOR)	12.00 (NOR)	-	
P-CE-3	Port Railways, Beira Port	21.00	21.00	-	12.60 (ITA)	-	8.40	Design made.
P-CE-4	Sugar & Cereal Terminal, Beira Port	9.00	8.10	0.90	-	-	9.00	Study on Cereal Terminal financed by Netherlands. Users of the facilities are expected to be involved in funding.
P-CE-5	Cold Storage Facilities, Beira Port	8.10	8.10	-	-	-	8.10	In planning phase.
P-CE-6	Tobacco Terminal, Beira Port	3.00	2.70	0.30	-	-	3.00	Users of the facilities are expected to finance the project.
P-CE-7	Cotton Terminal, Beira Port	3.00	2.70	0.30	-	-	3.00	Users of the facilities are expected to finance the project.
P-CE-8	Grain Silos (combined with P-CE-4)	-	-	-	-	-	-	Waiting for the findings of study P-CE-4.
P-CE-9	Coastal Protection Scheme, Beira Port	10.00	9.00	1.00	1.00 (MOZ)	-	9.00	
P-CE-10	Service Port Facilities, Beira Port	5.20	5.20	-	-	5.20 (DEN)	-	Appraisal in April 1990.
P-CE-11	Port Roads, Beira Port	1.00	-	1.00	1.00 (MOZ)	-	-	Being undertaken by Mozambican contractors.
P-CE-12	High Capacity Coal Terminal	160.00	144.00	16.00	16.00 (MOZ)	-	144.00	Implementation to be started when warranted by foreseen traffic increase.
P-CE-13	Port Traffic Control Centre	8.80	8.80	-	-	8.80 (DEN)	-	
P-CE-14	Power Supply to Beira Port	9.50	9.50	-	-	9.50 (SWE)	-	
P-CE-15	Fire Fighting System	0.70	0.70	-	0.70 (NET)	-	-	
P-ME-1	Equipment for Multipurpose and Container Handling Terminal	33.40	33.40	-	27.90	5.50	-	1st phase 1987-88 secured. Agreement on grant part signed June'87. Implementation started.
P-ME-1	B) New Equipment for Temporatry	12.90	12.90	-	6.90 (FIN)	-	-	In progress according to schedule.

	Container Terminal				6.00 (SWE)			
P-ME-1	C) New Equipment for New Multi-purpose and Container Terminal	15.00	15.00	-	14.60 (ADB) 0.40 (FIN)	-		Equipment 1989-90.
P-ME-1	D) Additional Equipment	5.50	5.50	-	-	2.80 (FIN) 2.80 (SWE)	-	
P-ME-2	Tugs, Pilot Boats and Line Boats	11.20	11.20	-	11.20 (DEN)	-	-	2 tugs and 2 pilots boats arrived 1988/89. Technical assistance to continue to 1992.
P-ME-3	Procurement of General Cargo Handling Equipment	2.00	2.00	-	2.00 (BEL)	-	-	
P-ST-1	Telecommunications Network Port and Railways	2.00	2.00	-	-	2.00 (SWE)	-	
P-TA-1	Technical Assistance to the Beira Port	5.60	5.60	-	5.60 (NET)	-	-	Funding secured for three years. Assistance team arrived in Jul-Aug'87.
P-TA-2	Technical Assistance to the Beira Port after 1990	13.30	13.30	-	-	3.50 (FIN) 6.30 (NET) 3.50 (SWE)	-	
P-TA-3	Technical Assistance to Port Training	2.60	2.60	-	2.60 (IDA/IBRD)	-	-	
	Sub-total	739.40	684.80	54.60	371.20	96.70	271.50	

TABLE 2(E): NACALA PORT TRANSPORT SYSTEM PROJECTS

ROADS								
1.4.1	Study on Upgrading of road Mangochi-Mandimba-Mitande. MALAWI/MOZAMBIQUE.	0.20	0.20	-	-	-	0.20	Funding is being sought.
1.9.6	Rehabilitation of the Road Lusaka-Chipata. ZAMBIA	54.00	54.00	-	-	-	54.00	Funding is being sought.
RAILWAYS								
2.4.2	Rehabilitation & Acquisition of Locomotives, Rolling Stock & Maintenance Equipment, MR	14.60	14.60	-	-	-	14.60	Funding is being sought.
2.5.5	Rehabilitation of the Nacala-Cuamba Railway 538 Km. MOZAMBIQUE	(181.50)	(152.10)	(29.40)	(29.40) (MOZ) (110.80)	-	(41.30)	About 230Kms of track have been renewed. Track laying of 2nd phase started in July 1987. Additional funding is being sought.
01-A	Track Rehabilitation (i) 1st Phase (Nacala-Nampula, 192 km)	-	-	-	-	-	-	Completed.
01-B	Track Rehabilitation (ii) 2nd Phase (Nampula-Cuamba, 346 km)	143.60	121.40	22.20	39.50 (FRA)	-	10.60	Ongoing

					30.00 (EEC) 23.20 (CAN) 22.20 (MOZ) 12.60 (POR) 4.00 (ITA) 1.50 (FIN)			
01-C	Track Rehabilitation (iii) 3rd Phase (Cuamba-Entre Lagos, 77 km)	18.70	12.80	5.90	5.90 (MOZ)	-	12.80	
02	Rehabilitation of Lomotives	3.50	3.50	-	-	-	3.50	Acquisition of new locomotives is included in Project 2.5.12.
03	Rehabilitation of 30 coaches	1.10	1.10	-	-	-	1.10	
04	Railway Telecommunications	6.90	6.80	0.10	0.10 (MOZ)	-	6.80	
05	Workshops, Equipment and Material	7.70	6.50	1.20	1.20 (MOZ)	-	6.50	Rehabilitation of Wagons is included in Project 2.5.8.
PORTS & WATER TRANSPORT								
3.5.3	Design, Construction & Operational Assistance of Container Terminal for the Nacala Port, MOZAMBIQUE	35.00	30.50	4.50	24.00 (FIN) 4.50 (MOZ)	6.50 (FIN)	-	Ongoing project, progressing on schedule.
	Sub-total	285.30	251.40	33.90	168.70	6.50	110.10	

TABLE 2(F): DAR-ES-SALAAM PORT TRANSPORT SYSTEM

ROADS								
1.4.3	Road Link Balaka-Salima-Karonga-Uyole, MALAWI/TANZANIA	47.60	47.60	-	23.30 (EEC) 12.00 (FRG) 8.00 (NET) 4.30 (IEB)	-	-	Works for the Karonga-Ibanda & Balaka-Salima sections started 1988.
1.4.4	Road Shuttle Service, Malawi-Tazara	2.00	2.00	-	-	-	2.00	Funding is being sought.
1.8.2	Total Malawi-Dar es Salaam Corridor Projects	(75.7)	(75.7)	-	(75.7)	-	-	
1.8.3	Rehabilitation/Strengthening of the TANZAM Highway. TANZANIA.	62.00	41.50	20.50	13.20 (IDA/IBRD) 19.40 (ADB) 6.90 (NOR) 20.50 (TAN)	-	2.00	Works have been started in 1988. Additional funding is being sought.
1.9.8	Rehabilitation of the TANZAM Highway. ZAMBIA.	9.30	5.90	3.40	3.40 (ZAM)	5.90 (DEN)	-	Study completed.
RAILWAYS								
2.8.1	TAZARA 10 Year Development Plan	(361.70)	(341.90)	(19.00)	152.10	27.00	162.80	A revised 10-Year Plan has been

	Projects				19.80 (TAZARA)			completed in 1988.
CE:1	Rehabiliattion of Quarries	17.90	16.20	1.70	11.50 (SWE) 4.70 (EEC) 1.70 (TAZARA)	-	-	
CE:2	Permanent Rectification of Landslides	32.70	27.60	5.10	5.10 (TAZARA) 0.60 (AUS)	27.00 (ADB)	-	Study (1 year) financed by Australia.
CE:3A	Mechanized Track Maintenance	22.00	21.90	0.10	2.40 (SWI) 4.80 (EEC) 3.90 (AUSt) 0.10 (TAZARA)	-	10.80	Financing sought for two tampers, 1 ballast cleaners, ballast regulators, trolleys and small equipment.
CE:3B	Spare and Wear Parts	2.50	2.50	-	-	-	2.50	
CE:3C	Manual Track Maintenance	18.00	15.00	3.00	3.00 (TAZARA)	-	15.00	
CE:4	Rail Welding	23.40	18.70	4.70	4.70 (TAZARA) 0.10 (AUS)	-	18.60	Study carried out by Austria.
CE:5	Rail Burn Repairs	8.10	7.60	0.50	5.40 (SWE) 2.20 (SWI) 0.50 (TAZARA)	-	-	Ongoing.
CE:7	Railway Link TAZARA-Mpulungu Port,ZAMBIA	0.40	0.40	-	-	-	0.40	TOR submitted to ADB. Prefeasibility Study carried out in October 1987.
CE:8	Malawi Cargo Centre, Mbeya Emergency Bridges?	0.90	0.90	-	-	-	0.90	
CE:9	Malawi Cargo Centre, Mbeya?	6.40	6.40	-	6.40 (USA)	-	-	Malawi - Dar es Salaam
CE:10	Malawi Cargo Centre, DAR-es-SALAAM	8.60	8.60	-	8.60 (USA)	-	-	(Malawi - Dar-es-Salaam)
GM:1A	Technical Assistance to the Head Office	3.90	3.90	-	3.90 (USA)	-	-	In addition Tanzania, Zambia & China have signed an agreement for technical cooperation involving 200 experts for 5 y
GM:1B	Job Evaluation	0.60	0.60	-	-	-	0.60	
GM:2	Manpower Development Plan & Training Facilities	6.50	6.00	0.50	2.60 (NOR) 0.50 (TAZARA) 2.20 (FRG) 1.20 (USA)	-	-	
GM-3	Project Coordinating Unit	5.50	5.00	0.50	5.00 (NORDICs) 0.50 (TAZARA)	-	-	
ME:1	Locomotives	104.40	101.90	2.50	3.70 (TAZARA) 40.70 (USA) 9.80 (FRG)	-	50.20	Includes US$60.0 million for Phase II.
ME:2A	Goods Wagons, Phase I	17.00	17.00	-	17.00 (SWE)	-	-	

ME:2B	Phase II	30.00	30.00	-	-	-	30.00	
ME:3	Trolleys and Trailers	12.50	12.50	-	-	-	12.50	Funding sought.
ME:4	Handling Equipment for Goods Depots	0.50	0.50	-	-	-	0.50	
ME:5A	Rescue Crane and Rerailing Equipment	6.80	6.60	0.20	6.60 (FIN) 0.20 (TAZARA)	-	-	The need for a second crane will be assessed during implementation of
ME:5B	Accident Prevention	1.20	1.20	-	1.20 (FIN)	-	-	
ME:6A	Wheel Lathes	3.70	3.60	0.10	3.60 (EEC) 0.10 (TAZARA)	-	-	
ME:6B	Underfloor Wheel Lathe	1.50	1.50	-	-	-	1.50	
ME:7	Mechanical Equipment for Workshops	10.40	10.40	-	1.80 (EEC)	-	8.60	
ME:8	Coaches	10.00	10.00	-	-	-	10.00	
ME:9	Malawian Tank Wagons and Tank Containers	1.30	1.30	-	1.30 (USA)	-	-	Malawi - Dar es Salaam.
ST:1	Solar Power Panels	4.30	3.40	0.90	3.40 (DEN) 0.90 (TAZARA)	-	-	
ST:2	Back-up HF Radio Link (Combined with ST-1 and ST-3)	-	-	-	-	-	-	
ST:3	Teleprinters (Combined with ST-1 and ST-2)*	-	-	-	-	-	-	
ST:4	Feasibility Study of Future Telecommunications System	0.70	0.70	-	-	-	0.70	
PORTS & WATER TRANSPORT								
3.8.1	Development of Navigation on Lake Niassa/Nyasa/Malawi, Malawi, Mozambique & Tanzania	(12.20)	(12.20)	-	(12.20)	-	-	Estimates of costs and fundings represent the total of the sub-projects listed below.
(1)	Lake Navigation Study	0.40	0.40	-	0.40 (DEN)	-	-	Draft final report (Phase A) received December 1989.
(2)	Lake Ports, Chilumba, Chipoka & Monkey Bay	5.90	5.90	-	5.90 (USA)	-	-	(Malawi - Dar es Salaam)
(3)	Self Propelled Pontoons	3.70	3.70	-	3.70 (FRG)	-	-	(Malawi - Dar es Salaam)
(4)	Monkey Bay Shipyard	2.20	2.20	-	2.20 (USA)	-	-	(Malawi - Dar es Salaam)
3.8.2	Development of the Port of Dar es Salaam, TANZANIA.	(368.70)	(320.80)	(47.90)	213.80) (479.00) (TAN)	(10.80)	(93.70)	Estimates of costs and fundirgs represent the total of the sub-projects listed below.
(1A)	Kurasini Oil Terminal Rehabilitation (Phase 2), Port of Dar es Salaam	8.20	6.60	1.60	6.60 (NOR) 1.60 (TAN)	-	-	Started January 1987. Cost increases to be clarified.

(1B)	Kurasini Oil Terminal Strengthening (Phase III), Port of Dar es Salaam	12.80	10.80	2.00	2.00 (TAN)	10.80 (KOR)	-	
(2)	Improvement of Harbour Entrance Channel, Port of Dar-es-Salaam	45.40	41.00	4.40	4.40 (TAN)	-	41.00	Tender documents ready. Financing being sought.
(3A)	Construction of Container Terminal, Ubungo ICD & Kurasini Warehouse - Dar-es-Salaam, Tanzania	40.50	33.50	7.00	25.50 (IDA/IBRD) 7.00 (TAN) 8.00 (SWE)	-	-	Including (5) Ubungo Container Depot. Execution started Sept.'85. Completion December 1988.
(3B)	Expansion of Container Terminal, Ubungo ICD and Kurasini Warehouse, Phase II	26.00	19.30	6.70	18.90 (IDA/IBRD) 0.40 (FIN) 6.70 (TAN)	-	-	Tender documents under preparation, implementation planned to commence 3rd quarter of 1990.
(3C)	Repairs to piles and fenders, Berths 9, 10 and 11, Port of Dar es Salaam	5.70	4.30	1.40	1.40 (TAN)	-	4.30	Studies completed, financing being sought, discussions are held with Denmark.
(4)	Construction of Grain Facility Port of Dar-es-Salaam	27.10	23.10	4.00	23.10 (NET) 4.00 (TAN)	-	-	Implementation started January 1988. Completion November 1989.
(5)	Ubungo Container Depot, Dar-es-Salaam	-	-	-	-	-	-	Included under (03).
(6.1)	Belgian Wharf Reconstruction, Port of Dar-es-Salaam	2.10	1.60	0.50	0.50 (TAN)	-	1.60	Tender documents ready. Financing being sought.
(6.2)	Modernization of Lighter Wharf, Phase 2-Paving & Service Part	4.60	3.50	1.10	1.10 (TAN)	-	3.50	Tender documents ready. Financing being sought.
(6.3)	Modernization of Lighter Wharf, Phase 2-Transit Shed Part	0.30	-	0.30	0.30 (TAN)	-	-	Financed by TRA in local currency.
(7)	Construction of Tug Berth, Port of Dar-es-Salaam	5.20	5.20	-	-	-	5.20	Financing being sought. Tender document ready.
(8.1A)	Purchase of Container Handling Equipment, Phase I, Port of Dar es Salaam	39.10	39.10	-	16.70 (DEN) 18.90 (FIN) 3.50 (AUS)	-	-	Equipment started to arrive in June'86. Commissioning of most of the equipment completed in January, 1989.
(8.1B)	Purchase of Container Handling Equipment, Phase II, Port of Dar es Salaam	17.00	17.00	-	-	-	17.00	Financing being sought.
(8.2)	Purchase of Copper Handling Equipment Port of Dar es Salaam	2.50	2.50	-	2.50 (SWE)	-	-	Equipment started to arrive in May.
(8.3)	Purchase of General Cargo Handling Equipment, Phase I, Port of Dar es Salaam	19.30	15.70	3.60	8.40 (ITA) 2.50 (UK) 0.90 (SWE) 1.30 (CAN) 2.60 (IDA/IBRD) 3.60 (TAN)	- -	- -	Tenders for Italian equipment evaluated. ODA financed equipment delivered in 1988. Swedish financed equipment delivered in 1987.
(8.3A)	Purchase of General Cargo Handling	5.00	5.00	-	5.00 (IDA/IBRD)	-	-	Specifications under preparation.

	Equipment, Phase II, Port of Dar es Salaam							
(8.38)	Purchase of Office Equipment, TRA Headquarters and Port of Dar es Salaam	1.20	1.20	-	1.20 (IDA/IBRD)	-	-	Tender documents under preparation.
(9)	Purchase of Floating Craft	17.50	17.50	-	-	-	17.50	Financing being sought.
(10)	Technical Assistance to TRA and Improvement of Bandari College	4.50	4.50	-	3.70 (NOR) 0.80 (IDA/IBRD)	-	-	Project started in October 1987. Completion date September 1991.
(11)	Rehabilitation of Berths 1-8	45.60	33.00	12.60	14.40 (SWE) 7.00 (NOR) 21.60 (TAN)	-	2.60 -	Work started in January 1988. Completion September 1991. Additional funding sought.
(12)	Study on New Oil Terminal	0.20	0.20	-	-	-	0.20	ADB has been approached for use of Danish Fund.
(13)	Study on Increasing Port Capacity for SADCC Transit Goods	-	-	-	-	-	-	Financing under Project 0.0.5. Consultant started in October 1988 and executed the 2nd Phase during October-December 1989.
(14)	Study on Container Handling in Tanzania & Neighbouring Countries, Dar-es-Salaam	0.50	0.50	-	0.50 (NOR)	-	-	Completed in 1987.
(15)	Improvement of Central Workshop, Port of Dar-es-Salaam	3.80	3.40	0.40	2.40 (IDA/IBRD) 0.20 (FIN) 0.40 (TAN)	-	0.80	Financing being sought for required modification to the structure Additional funding is being sought.
(16)	Port Development Study, Port of Dar es Salaam	1.20	1.00	0.20	1.00 (IDA/IBRD) 0.20 (TAN)	-	-	Terms of Reference under preparation, Consultant to be appointed in July, 1990.
(17)	Project Coordination Unit	3.80	3.80	-	1.10 (FIN) 0.40 (NET) 1.60 (SWE) 0.40 0.30 (TAN)	-	-	Work started in 1985 and the Unit is to be kept on site until end 1993.
(18)	Management Technical Assistance TRA Headquarters and Port of Dar es Salaam	29.60	27.50	2.10	14.60 (FIN) 8.40 (IDA/IBRD) 0.40 (NET) 3.70 (SWE) 0.40 (NOR) 2.10 (TAN)			Work started in 1986 and will be completed in 1993.
	Sub-total	863.50	771.90	91.60	559.30	43.70	260.50	

TABLE 2(G): LOBITO PORT TRANSPORT SYSTEM PROJECTS

0.1.1	Multimodal Projects in the 10-Year Plan for Lobito Port Transport System	(86.40)	(86.40)	-	(13.80)	(5.50)	(67.10)	Additional funding is being sought.

(G-CE-1)	Development of the Town of Lobito	13.50	13.50	-	-	-	13.50	Funding sought.
(G-CE-2)	Rehabilitation of Cement Factory	6.00	6.00	-	-	-	6.00	Funding sought.
(G-E-1)	Repair & Extension of Lumeum Hydroelectric Power Plant	42.00	42.00	-	10.80 (POR) 3.00 (FRG)	-	28.20	Funding sought.
(G-M-1)	Project Coordination Unit	5.00	5.00	-	-	2.00 (EEC)	3.00	Additional funding sought.
(G-M-2)	Support to Workers and Their Families	7.00	7.00	-	-	3.50 (POR)	3.50	Additional funding sought.
(G-M-3)	Housing for Technical Assistant Staff in Lobito and Huambo	9.40	9.40	-	-	-	9.40	Funding sought.
(G-M-4)	Rehabilitation of Hotel Terminus	3.50	3.50	-	-	-	3.50	Funding sought.
ROADS								
1.1.3	Roads & Road Transport Projects in the 10-Year Development Plan for Lobito Port Transport System	(24.40)	(24.40)	-	-	(0.40)	(24.00)	Additional funding sought.
(RD-CE-1)	Benguela-Lobito Road & Access Roads to the Port and Railway in Lobito	17.40	17.40	-	-	0.40 (POR)	17.00	Additional funding sought.
(RD-TR-1)	Reinforcement of the Capacity of the Road Transport Company	7.00	7.00	-	-	-	7.00	Funding sought.
1.9.1	Study on Angola-Zambia Road Link, ZAMBIA	0.20	0.20	-	0.20 (EEC)	-	-	Study adjourned.
RAILWAYS								
2.1.1	Benguela Railway Projects in the 10-Year Development Plan for Lobito Port Transport System	(346.20)	(346.20)	-	(2.50)	-	(343.70)	A technical coordination conference was held in January 1989. Funding sought.
(R-CE-1)	Track Repair and Upgrading	159.90	159.90	-	-	-	159.90	
(R-CE-2)	Establishment of Quarries	6.40	6.40	-	-	-	6.40	
(R-CE-3)	Sleeper Production Plants	3.00	3.00	-	-	-	3.00	
(R-CE-4)	Track Maintenance Equipment	16.00	16.00	-	-	-	16.00	
(R-CE-5)	Realignment Design Cubal to Huambo	0.60	0.60	-	-	-	0.60	
(R-CE-6)	Realignment Study Huambo to Luau	0.40	0.40	-	-	-	0.40	
(R-E-1)	Electric Supply & Distribution Systems for Lobito, Huambo and Luena	1.80	1.80	-	-	-	1.80	
(R-M-1)	Manpower Development Plan	1.50	1.50	-	-	-	1.50	
(R-M-2)	Upgrading & Extension of Computer Facilities	0.90	0.90	-	-	-	0.90	

(R-M-3)	Railway Training Assistance	15.00	15.00	-	-	-	15.00	
(R-M-4)	Technical Assistance for Operation of the Railway	12.50	12.50	-	-	-	12.50	
(R-M-5)	Improvement of Railway Hospitals	6.00	6.00	-	-	-	6.00	
(R-ME-1)	Rehabilitation & Acquisition of Locomotives	20.00	20.00	-	2.50	-	17.50	Ongoing.
(R-ME-2)	Rehabilitation & Acquisition of Rolling Stock	65.00	65.00	-	-	-	65.00	
(R-ME-3)	Completion of Diesel Workshop and Re-equipment of Wheel Shop at Huambo	7.00	7.00	-	-	-	7.00	
(R-ME-4)	Conversion of the Steam Depot at Luena to Diesel Maintenance Depot	1.00	1.00	-	-	-	1.00	
(R-ME-5)	Workshop Facilities at Lobito	0.60	0.60	-	-	-	0.60	
(R-ME-6)	Review & Acquisition of Spare Parts and Reorganisation of Main Stores	10.30	10.30	-	-	-	10.30	
(R-ME-7)	Rescue Equipment & Accident Prevention Programme	1.10	1.10	-	-	-	1.10	
(R-ME-8)	Installation of 21 Automatic Barriers	1.60	1.60	-	-	-	1.60	
(R-ME-9)	Study on Improvement of Specialist Workshops in Huambo	0.10	0.10	-	-	-	0.10	
(R-OP-1)	Motive Power, Rolling Stock & Operation Plan	0.40	0.40	-	-	-	0.40	
(R-ST-1)	Train Control System and Telecommunications	14.50	14.50	-	-	-	14.50	
(R-ST-2)	Telephone Exchanges CFB & Lobito Port	0.60	0.60	-	-	-	0.60	
3.1.1	Port & Water Transport Projects in the Ten Year Development Plan for the Lobito Port Transport System	(82.50)	(82.50)	-	-	(16.10) (EEC)	(66.40)	
(P-CE-1)	Inspection & Reinforcement of Quays, Port of Lobito	15.80	15.80	-	-	-	15.80	
(P-CE-2)	Grain Bulk Facilities Improvement, Lobito Port	1.00	1.00	-	-	-	1.00	
(P-CE-3)	New Coastal Terminal & Service Port Facilities, Lobito Port	6.50	6.50	-	-	4.50 (EEC)	2.00	
(P-CE-4)	Rehabilitation of Port Railways, Lobito Port	2.50	2.50	-	-	2.50 (EEC)	-	

(P-CE-5)	Study on Rehabilitation of Existing Ore Bulk Facilities, Lobito Port	0.50	0.50	-	-	0.50 (EEC)	-	
(P-CE-6)	New Multi-purpose Terminal (Study), Lobito Port	1.00	1.00	-	-	-	1.00	
(P-CE-7)	New Container Terminal, Lobito Port	1.00	1.00	-	-	-	1.00	
(P-CE-8)	Coastal Protection Works, Lobito Port	1.30	1.30	-	-	-	1.30	
(P-M-1)	Welfare & Office Facilities, Lobito Port	3.50	3.50	-	-	-	3.50	
(P-M-2)	Technical Assistance to the Port of Lobito	3.00	3.00	-	-	1.50 (EEC)	1.50	
(P-M-3)	Port School at Lobito, Angola	5.30	5.30	-	-	-	5.30	Funding being sought.
(P-ME-1)	Rehabilitation of Power & Lighting System, Lobito Port	2.50	2.50	-	-	-	2.50	Funding being sought.
(P-ME-2)	Purchase of General Port Equipment, Lobito Port	2.60	2.60	-	-	2.60 (EEC)	2.60	
(P-ME-3)	Port Maintenance Workshop & Store, Lobito Port	3.50	3.50	-	-	3.50 (EEC)	-	
(P-ME-4)	Mobile Cranes Rehabilitation & Scrapping Programme, Lobito Port	3.00	3.00	-	-	1.00 (EEC)	2.00	
(P-ME-5)	Floating Equipment, Lobito Port	5.00	5.00	-	-	-	5.00	
(P-ME-6)	Shipyard Rehabilitation, Lobito Port	15.00	15.00	-	-	-	15.00	
(P-MS-1)	Maritime Security Programme, Angola	1.50	1.50	-	-	-	1.50	
(P-S-1)	Improvement of the Capacity of the Coastal Shipping Company, Angola	8.00	8.00	-	-	-	8.00	
PORTS & WATER TRANSPORT								
3.1.2	Development of the Port of Luanda	(38.00)	(31.90)	(6.10)	(10.00) (ANG) (6.10) (ANG)	-	(21.90)	Additional funding being sought.
(1)	Container and Ro/Ro Terminal in the Port of Luanda	10.70	9.10	1.60	1.60 (ANG)	-	9.10	TOR of a study have been prepared.
(2)	Construction of a Grain Terminal & Silos Port of Luanda	12.70	10.80	1.90	1.90 (ANG) 3.70 (ANG)	-	7.10	Financing being sought for civil works.
(3)	Modernisation and Enlargement of Electrical Systems, Port of Luanda	5.50	5.50	-	3.00 (ANG)	-	2.50	Financing being sought for remainder.
(4)	Earth Works, Port of Luanda	5.50	3.30	2.20	3.30 (ANG) 2.20 (ANG)	-	-	About to be completed.

(5)	Construction of Canteen Facilities, Port of Luanda	3.60	3.20	0.40	0.40 (ANG)	-	3.20	Under review.
	Sub-total	577.70	571.60	6.10	32.60	22.00	523.10	

TABLE 2(N): INTRA-REGIONAL SURFACE TRANSPORT SYSTEM PROJECTS

ROADS

1.1.1	Study of the Road N'Zeto-Soyo. ANGOLA.	1.10	1.10	-	-	1.10 (ADB)	-	
1.1.2	Studies of Four Roads. ANGOLA	1.60	1.60	-	-	-	1.60	
1.2.1	Partial Reconstruction of Nata-Kazungula Road. BOTSWANA	8.90	7.10	1.80	3.30 (SWE) 1.80 (BOT)	-	3.80	In progress.
1.2.2	Construction of Lwaneng-Mamuno Road BOTSWANA	108.00	92.00	16.00	7.00 (SWE) 16.00 (BOT)	-	85.00	Additional funding being sought.
1.2.3	Improved Ferry Service at Kazungula, Botswana/Zambia	3.00	2.00	1.00	1.00 (BOT)		2.00	Agreement on operations signed between Botswana and Zambia. Facilities in Botswana side under contraction. Funding being sought.
1.2.4	Study on Maun-Ghanzi Road, BOTSWANA	0.80	0.80	-	-	-	0.80	Pre-appraisal carried out.
1.4.2	Study on the Upgrading of the Road Blantyre-Milanje-Mocuba, Malawi/ Mozambique	(0.30)	(0.30)	-	(0.20)	-	(0.10)	Additional funding being sought.
(1)	Study on the Upgrading of the Road Blantyre-Milange-Mocuba (Feasibility Study)	-	-	-	-	-	-	Feasibility study intended to be funded under Project 0.0.5.
(2)	Study on the Upgrading of the Road Blantyre-Milanje-Mocuba (Design)	0.30	0.30	-	0.20 (EEC)	-	0.10	Engineering design of part of Mozambique section completed.
1.5.2	Rehabilitation of the Zimbabwe-Tete-Malawi Road. MOZAMBIQUE.	18.60	12.60	6.00	12.60 (KUW) 6.00 (MOZ)	-	-	Work in progress.
1.5.5	Study on Unity Bridge and Access Roads. MOZAMBIQUE/TANZANIA.	0.90	0.90	-	-	-	0.90	TOR have been prepared. Funding being sought.
1.6.1	Construction of the Gobabis to Buitepos Roads, Namibia	14.10	14.10	-	-	-	14.10	Funding sought.
1.6.2	Improvement of route Rundu, Katima Mulilo and Ngoma, on border to Botswana, Namibia	57.00	51.20	5.80	5.80 (NAM)	-	51.20	Funding sought.
1.6.4	The Ovamboland Road Network Improvement Master Plan, Namibia	1.10	1.00	0.10	0.10 (NAM)	-	1.00	Funding sought.

1.6.5	Construction of a bitumen surfaced road between Goageb and Aus, Namibia	14.70	14.70	-	-	-	14.70	Funding sought.
1.6.6	Climbing/Passing Lanes on Road between Windhoek and Windhoek International Airport, Namibia	0.60	0.40	0.20	0.20 (NAM)	-	0.40	Funding sought.
1.8.1	Rehabilitation & Upgrading of the Mtwara-Songea-Moamba Bay Road. TANZANIA	80.00	54.00	26.00	26.00 (TAN) 8.00 (NET)	24.50 (EEC)	21.50	Works in progress on Masasi-Songea Section. Additional funding being sought.
1.9.3	Rehabilitation of the Lusaka-Kafue-Livingstone-Kazungula Road. ZAMBIA	189.00	189.00	-	49.00 (NOR)	-	140.00	Work completed on Livingstone-Zimba section, and started on Kafue-Monze section.
1.9.5	Rehabilitation of the Lusaka-Kapiri-Chingola-Zaire Border Road. ZAMBIA	144.00	144.00	-	-	144.00	-	Engineering study completed.
1.9.7	Improvement of the Road Lusaka-Mongu. ZAMBIA	63.30	63.30	-	-	-	63.30	Funding sought.
RAILWAYS								
2.2.7	Establishment of Dry Ports/IOD's in BOTSWANA.	5.00	4.50	0.50	0.50 (BOT) 0.50 (DEN)	4.00 (DEN)	-	Funding is being sought.
2.3.1	Establishment of Dry Port/IOD's in Lesotho	1.40	1.00	0.40	0.40 (LES)	-	1.00	Funding is being sought.
2.4.3	Establishment of Dry Ports/IOD's in MALAWI.	4.00	3.20	0.80	0.50 (DEN) 0.80 (MAL)	2.70 (DEN)	-	Study financed by Denmark.
2.4.4	Improvement of Communications Systems, Malawi Railways	0.80	0.80	-	-	-	0.80	Funding sought.
2.5.8	Rehabilitation & Maintenance of Wagons CFM, Mozambique	30.10	27.00	3.10	3.10 (MOZ) 2.80 (ITA) 1.00 (UK)	4.20 (ITA)	19.00	150 wagons rehabilitated, financed by Italy and Mozambique. Additional funding being sought.
2.5.11	Computerized Wagon Control System for CFM, MOZAMBIQUE	2.50	2.00	0.50	1.50 (KUW) 0.50 (MOZ)	-	0.50	
2.5.12	Rehabilitation and Acquisition of Locomotives for CFM, MOZAMBIQUE.	103.00	103.00	-	6.40 (USA) 7.10 (JAP)	12.40 (IBRD)	77.10	Feasibility study carried out by RITES. Additional funding sought.
2.7.2	Establishment of Dry Port/IOD, SWAZILAND	0.70	0.50	0.20	0.20 (SWA)	-	0.50	
2.9.1	Feasibility Study for New Rail Links Connecting Zambia with Malawi and Mozambique.	314.90	227.10	87.80	16.50 87.80 (ZAM)	-	210.60	Funding sought.
2.10.1	Repair Tracks and Wagon Maintenance Equipment, National Railways of Zimbabwe ZIMBABWE	1.10	0.60	0.50	0.60 (ZIM) 0.50 (ZIM)	-	-	

2.10.2	Equipment for Central Electrical Workshop, National Railways of Zimbabwe.	0.40	0.40	-	-	0.40 (AUS)	-	
2.10.4	Acquisition and Rehabilitation of Locomotives, National Railways of Zimbabwe	84.80	69.60	15.20	15.20 (ZIM)	40.00 (USA)	29.60	Additional funding sought.
2.10.5	Acquisition of Coaches for the National Railways of Zimbabwe	131.50	66.00	65.50	65.50 (ZIM)	-	66.00	Funding sought.
2.10.6	Procurement of Rail Trolleys for the National Railways of Zimbabwe	1.70	1.50	0.20	0.20 (ZIM)	-	1.50	Funding sought.
PORTS & WATER TRANSPORT								
3.5.4								
(1)	Navigational Aids, Mozambique	15.40	14.70	0.70	7.90 (SWE) 0.70 (MOZ)	-	6.80	Financing of first phase secured. Additional funding being sought.
(2)	Buoy Handling & Maintenance Vessel. MOZAMBIQUE	7.20	7.20	-	7.20 (DEN)	-	-	Agreement signed June 1987. Estimated time for delivery of vessel is February 1990.
3.8.3	Coastal Navigational Aids. TANZANIA	0.20	0.20	-	0.20 (NOR)	-	-	Feasibility study completed October 1989.
3.9.1	Study of the Navigation of the Zambezi and Shire Rivers	0.30	0.30	-	-	-	0.30	Funding sought.
	Sub-total	1412.00	1179.70	232.30	364.60	233.30	814.10	
TABLE 2(I): CIVIL AVIATION PROJECTS								
4.0.8(1)	Rehabilitation of Aeronautical Telecommunications in the Region	30.00	30.00	-	-	-	30.00	Funding sought.
4.1.1	Civil Aviation Projects in the 10-Year Development Plan for the Lobito Port Transport System	(12.10)	(12.10)	-	-	-	(12.10)	
(CA-CE-1)	Upgrading of Benguela Airport	12.00	12.00	-	-	-	12.00	Funding sought.
(CA-CE-2)	Study on New Airport between Lobito and Benguela	0.10	0.10	-	-	-	0.10	
4.2.1	Acquisition of New Aircraft for Air Botswana.	18.00	18.00	-	18.00	-	-	Project completed.
4.2.2	Improvement to Gaborone Airport	8.00	5.00	3.00	3.00 (BOT) 3.80	-	1.20	Additional funding sought.

4.2.3	Flight Information Region for Botswana	9.40	8.50	0.90	0.90 (BOT)	-	8.50	Funding sought.
4.3.3	Acquisition of New Aircraft for Air Lesotho	40.00	40.00	-	-	-	40.00	Funding sought.
4.3.4	Rehabilitation of Aeronautical Telecommunications, LESOTHO	0.30	0.30	-	-	-	0.30	Financing sought as part of contingency preparations.
4.3.5	Extension of Moshoeshoe I	34.00	34.00	-	-	-	34.00	Funding sought.
4.4.1	New Airport at Mzuzu, MALAWI	17.30	13.00	4.30	2.60 (FRA) 4.30 (MAL)	-	10.40	Financier for construction is being sought.
4.5.3	Civil Aviation Projects in Beira Port Transport System Development Plan	(22.50)	(21.30)	(1.20)	(1.20) (MOZ)	-	(21.30)	Funding sought.
C-CE:1	Development of Beira Airport Terminal	2.00	2.00	-	-	-	2.00	
C-CE:2	Strengthening of Runways in Beira and Tete.	4.50	3.60	0.90	0.90 (MOZ)	-	3.60	
C-CE:3	Airport Building, Chimoio	1.50	1.20	0.30	0.30 (MOZ)	-	1.20	
C-ME:2	Communication & Navigation at Beira, Chimoio and Tete	6.00	6.00	-	-	-	6.00	
C-ME:3	Fire Fighting Equipment (Beira, Chimoio & Tete)	2.50	2.50	-	-	-	2.50	
C-ME:4	Maintenance Equipment	0.50	0.50	-	-	-	0.50	
C-ME:5	Airport Lighting, Chimoio	0.50	0.50	-	-	-	0.50	
C-TA:1	Technical Assistance	5.00	5.00	-	-	-	5.00	
4.5.5	Development of Maputo Airport, MOZAMBIQUE	6.50	5.20	1.30	1.30 (MOZ)	-	5.20	The runway is now being re-surfaced. Additional funding sought.
4.5.6	Development of Inhambane Airport, MOZAMBIQUE	6.00	5.00	1.00	1.00 (MOZ)	-	5.00	
4.5.7	Development of Vilanculos Airport, MOZAMBIQUE	2.50	2.00	0.50	0.50 (MOZ)	-	2.00	Funding sought.
4.7.1	Development of Matsapa Airport, SWAZILAND	38.00	32.00	6.00	6.00 (SWA) 20.80	-	11.20	Control tower, training and telecoms are financed by EEC. France has agreed to finance Training, Technical Assistance, Navigation Aids & Landing Equipment. Runway financed by local
4.5.8	Improvement of ATC Equipment in Beira FIR, MOZAMBIQUE	8.00	8.00	-	-	-	8.00	
4.6.2	Installing of an Air Traffic Control Radar at Windhoek Airport, Namibia	7.00	7.00	-	-	-	7.00	
4.6.3	Installation of ILS at Windhoek	0.80	0.80	-	-	-	0.80	

	Airport, Namibia							
4.6.4	En-route Navigation Aids for Civil Aviation, Namibia	1.30	1.30	-	-	-	1.30	
4.6.5	Technical Assistance Civil Aviation Department, Namibia	2.50	2.50	-	-	-	2.50	
4.7.3	Development of Royal Swazi National Airways	45.00	45.00	-	-	-	45.00	Funding sought.
4.9.1	Study on Improvement Livingstone, Ndola & Southdown Airports, Zambia	0.70	0.70	-	-	-	0.70	TOR prepared. Financing for feasibility study being sought.
4.9.4	Study on New Hangar at Lusaka International Airport. ZAMBIA	0.10	0.10	-	-	-	0.10	Funding sought.
4.9.6	Lusaka International Airport Development, Zambia	44.10	44.10	-	-	-	44.10	Funding sought.
4.10.3	Modernization of AFIN - Message Switching Centre at Harare International Airport, ZIMBABWE	0.60	0.60	-	-	-	0.60	Implementation postponed.
4.10.4	Improvement and Expansion of Radar Coverage, Zimbabwe	8.00	8.00	-	-	8.00	-	Funding sought.
	Sub-total	362.70	344.50	18.20	63.60	8.00	291.30	

TABLE 2(J): TELECOMMUNICATIONS PROJECTS

5.1.1	Telecommunication Projects in the 10-Year Development Plan for Lobito Port Transport System	(35.10)	(35.10)	-	-	(2.10)	(33.00)	Funding sought.
(T-M-1)	Technical Assistance to ENATEL	2.50	2.50	-	-	-	2.50	
(T-MC-1)	Provision of HF Radio Maritime Communications to Lobito Harbour	0.80	0.80	-	-	0.80 (NOR)	-	
(T-MC-2)	Expansion of Maritime Communication Facilities	1.80	1.80	-	-	-	1.80	
(T-PT-1)	Microwave Link Benguela/Lobito-Luau	11.40	11.40	-	-	-	11.40	
(T-PT-2)	Spur Routes Along the Benguela/Lobito-Luau Corridor	5.90	5.90	-	-	-	5.90	
(T-PT-3)	Extension/Rehabilitation of Switching & Outside Plant Along the Corridor	9.10	9.10	-	-	-	9.10	
(T-PT-4)	Rehabilitation of Troposcatter Link Malange-Saurimo-Luena-Zambia	1.30	1.30	-	-	1.30 (NOR)	-	

(T-PT-5)	Microwave Link Luanda-Benguela/Lobito	2.30	2.30	-	-	-	2.30	
5.1.2	Expansion of International Telecommunication Services, ANGOLA	38.00	32.40	5.60	32.40 (ADB) 5.60 (ANG)	-	-	Ongoing project. Near completion.
5.1.3	Microwave Link Luanda-Cabinda, ANGOLA	5.10	4.10	1.00	1.00 (ANG)	-	4.10	Ongoing project. Near completion.
5.1.8	Provision and Expansion of National Telex Exchanges, ANGOLA	2.40	2.00	0.40	0.40 (ANG)	-	2.00	Funding sought.
5.1.9	Provision of Digital Exchanges for Angola Development Programme (1990 - 2000)	70.00	52.00	18.00	18.00 (ANG)	-	52.00	Funding sought.
5.1.10	Provision of Domestic Satellite Network ANGOSAT for Angola	70.00	65.00	5.00	5.00 (ANG)	37.00 (ADB)	28.00	Additional funding sought.
5.2.3	Expansion of the Microwave Trunk Network, BOTSWANA	30.50	28.00	2.50	2.50 (BOT) 13.00 (NOR)	-	15.00	Norway is financing Francistown-Kasane with extension from Nata-Maun. Financing is required for link to Namibia.
5.2.5	Rural Telecommunications Development Study for BOTSWANA	0.30	0.20	0.10	0.10 (BOT) 0.20 (ADB)	-	-	Completed.
5.3.2	Rural Communication System, LESOTHO	10.10	9.90	0.20	0.20 (LES)	-	9.90	CIDA has provided US$ 0.1 million for study under P. 0.0.5. Financing is required for project implementation.
5.3.3	Rural Automatic Telephone Exchanges, LESOTHO	3.00	2.50	0.50	0.50 (LES)	-	2.50	Funding sought.
5.3.4	Fundamental Master Plan and Planning Unit, LESOTHO	0.40	0.30	0.10	0.10 (LES)	-	0.30	Funding sought.
5.3.5	Provision of New ITSC and Digitalisation of National Exchanges, LESOTHO	7.10	6.60	0.50	0.50 (LES)	-	6.60	Funding sought.
5.4.3	Supply of Digital Equipment for the Expansion of Telephone Exchanges in Blantyre, Lilongwe and Zomba	20.60	19.40	1.20	1.20 (MAL)	-	19.40	Funding sought.
5.5.1	National/Regional Satellite Communication System, MOZAMBIQUE	20.60	20.10	0.50	13.20 (FRA) 4.30 (KUW) 1.60 (CAN) 0.50 (MOZ)	-	1.00	CIDA has provided funds for the Boane rehabilitation, upgrade & feasibility study for Lichinga & Pemba domestic satellites. Additional funding being sought.
5.5.3	National Telecommunications Development Project with Connections to Neighbouring Countries (Regional Part)	347.70	307.90	39.80	55.20 (ITA) 15.90 (ADB) 13.80 (SWE) 8.10 (BADEA) 6.00 (NOR) 39.80 (MOZ)	26.20 (FRG)	182.70	The parts of the project related to Beira Corridor are presented under P. 5.5.5. Financing of telex exchange in Beira sought. NORAD & Sweden finance microwave link Zimbabwe/Tete/Blantyre. Additional funding being sought.

5.5.5	Telecommunication Projects in Beira Port Transport System Development Plan	(20.10)	(18.10)	(2.00)	(0.70) (ITA) 2.00 (MOZ) 0.10 (POR)	-	(17.30)	Additional funding sought.
T-CE-1	Spur Routes Beira-Machipanda, Mozambique	3.70	3.30	0.40	0.40 (MOZ)	-	3.30	
T-CE-2	Crossborder Section of the Link Beira-Chimoio-Mutare, ZIMBABWE	0.80	0.70	0.10	0.70 (ITA) 0.10 (MOZ)	-	-	Financing is required urgently to complete the cross-border link Chimoio-Mutare.
T-CE-3	Digital Microwave Link Beira-Caia-Tete	8.70	7.80	0.90	0.90 (MOZ)	-	7.80	
T-CE-4	Spur Routes Along Beira-Vila Nova da Fronteira, Malawi Corridor	6.30	5.70	0.60	0.60 (MOZ)	-	5.70	
T-TA-1	Technical Assistance to TDM, Mozambique	0.60	0.60	-	0.10 (POR)	-	0.50	
5.5.6	Maritime Radio Communication Project, MOZAMBIQUE	2.50	2.30	0.20	0.20 (MOZ) 0.20 (NOR) 0.10 (ITA)	-	2.00	Existing equipment Survey completed by Norway. Financing is required for the complete study. Additional funding sought.
5.6.1	Extension of International Telecommunications Services, NAMIBIA	13.50	12.50	1.00	1.00 (NAM)	-	12.50	Funding sought.
5.6.2	Telecommunications Master Plan Study, NAMIBIA	1.80	1.70	0.10	0.10 (NAM)	-	1.70	Funding sought.
5.6.3	Extension of Backbore Trunk Network, NAMIBIA	19.50	17.50	2.00	2.00 (NAM)	-	17.50	Funding sought.
5.7.3	Expansion of the National Microwave Trunk Network, SWAZILAND	3.00	2.50	0.50	0.50 (SWA) 2.50 (ITA)	-	-	About to be completed.
5.7.4	Provision of Group and Channel Translating Equipment for 20 Super-groups at Ntondozi for the Combined National and International Switching Centre ITSC, SWAZILAND	1.40	1.30	0.10	0.10 (SWA) 1.30 (ITA)	-	-	About to be completed.
5.7.5	Extension of Nat. Switching Centre and Associated Network Digitalisation, SWAZILAND	12.00	10.00	2.00	2.00 (SWA)	-	10.00	Funding sought.
5.8.2	Extension of ITSC Capacity, Dar-es-Salaam, TANZANIA	4.70	4.50	0.20	0.20 (TAN)	-	4.50	Funding sought.
5.8.3	Standard A Earth Station Satellite Station at Da-es-Salaam, TANZANIA	12.00	11.50	0.50	11.50 (ITA) 0.50 (TAN)	-	-	
5.8.4	New Transit Digital Telephone Exchange for Dodoma, TANZANIA	3.10	2.40	0.70	0.70 (TAN)	-	2.40	Funding sought.
5.8.5	Digital Microwave Link Dar/Dodoma/ Zanzibar & Expansion of Multiplex Equip-	20.00	17.70	2.30	2.30 (TAN)	-	17.70	Funding sought.

	ment at Dodoma							
5.8.7	Provision of a Digital Microwave Link Dar-es-Salaam/Mtwara/Songea & Exchange at Songea	30.00	30.00	-	-	-	30.00	Funding sought.
5.8.8	Provision of Digital Exchanges, TANZANIA	44.10	40.50	3.60	3.60 (TAN)	-	40.50	Funding sought.
5.8.9	Rehabilitation of Trunk PEMAFTEL Links, TANZANIA	20.90	18.90	2.00	2.00 (TAN)	-	18.90	Funding sought.
5.9.1	Extension of the International Telephone Switching Centre (ITSC) in Lusaka, ZAMBIA	2.50	2.50	-	-	2.50 (SWE)	-	
5.9.2	Expansion of the Earth Station at Mwembeshi, ZAMBIA	25.00	23.00	2.00	7.10 (CAN) 2.00 (ZAM)	-	15.90	Canada has financed Phase I for Mwembeshi II. Financing required for Mwembeshi III.
5.9.3	Microwave Terminal at Chingola to complete the Link Zambia/Zaire, ZAMBIA	0.20	0.20	-	-	-	0.20	An interim 120 channel link is in operation. Funding sought.
5.9.4	Microwave Link Zambezi-Luene, ZAMBIA	4.00	3.80	0.20	0.20 (ZAM)	3.80 (NOR)	-	
5.9.6	Microwave Link Kariba (Zimbabwe)-Siavonga/Lusaka (Zambia), ZAMBIA	1.60	1.60	-	1.60 (ITA)	-	-	Italy is financing Zambian portion up to Siavonga.
5.9.7	Message Switching System in Lusaka, ZAMBIA	0.80	0.80	-	-	-	0.80	Funding sought.
5.9.9	Masterplan Study & Fundamental Planning Unit for ZAMBIA	0.40	0.40	-	-	-	0.40	Funding sought.
5.9.10	Upgrading Lusaka-Livingstone Microwave Trunk Network, Zambia	10.00	9.00	1.00	1.00 (ZAM)	-	9.00	Funding sought.
5.10.6	Provision of Packet Switching for Data Network in ZIMBABWE	3.60	3.20	0.40	0.40 (ZIM)	3.20 (BEL)	-	
5.10.7	Supply of Digital Telephone Exchanges in ZIMBABWE	68.00	62.90	5.10	47.50 (JAP) 5.10 (ZIM)	-	15.40	Additional funding sought.
5.10.8	Expansion of the Earth Station at Mazowe, ZIMBABWE	11.50	10.50	1.00	1.00 (ZIM)	-	10.50	Additional funding sought.
5.10.9	Provision of Telex Exchange and Network, ZIMBABWE	7.50	7.00	0.50	0.50 (ZIM)	-	7.00	Funding sought.
5.10.10	Extension of ITSC Gweru, ZIMBABWE	6.80	6.60	0.20	0.20 (ZIM)	-	6.60	Funding sought.
5.10.11	Digital Microwave Link Gweru (Zimbabwe) to Maputo, Mozambique	18.50	16.00	2.50	2.50 (MOZ)	-	16.00	Funding sought.
	Sub-total	1029.90	924.40	105.50	341.80	74.80	613.30	

TABLE 2(K): METEOROLOGY PROJECTS

6.0.2	Regional Drought Monitoring Centre, HARARE	1.20	1.10	0.10	0.60 (UK) 0.10 (ZIM)	-	0.50	1st Phase of the construction of the building space is completed. Expert services and fellowship components in Project 6.0.1. Additional funding being sought.
6.0.3	Regional Meteorological Telecommucation Hub and Data Exchange, Lusaka	1.60	1.30	0.30	0.30 (ZAM)	-	1.30	Funding sought.
6.0.4	Regional Maintenance Support of Meteorological Services	0.40	0.40	-	0.20 (FIN)	-	0.20	Additional funding sought.
6.0.5	Data Processing in Meteorological Services	1.40	1.40	-	0.50 (FIN)	-	0.90	Additional funding sought.
6.0.6	Meteorological Observing Networks	8.20	8.20	-	5.20 (FIN)	-	3.00	Additional funding sought.
6.0.7	Meteorological Telecommunications	4.40	4.40	-	1.90 (FIN)	-	2.50	Additional funding sought.
6.0.8	Data Rescue Project	0.50	0.50	-	0.50	-	-	
6.5.1	Meteorological Buoys for Mozambique	0.10	0.10	-	-	-	0.10	Funding sought.
6.5.2	Aeronautical Equipment for Airports in Mozambique	0.70	0.70	-	-	-	0.70	Funding sought.
6.8.1	Meteorological Buoys for Tanzania	0.40	0.40	-	-	-	0.40	Funding sought.
	Sub-total	18.90	18.50	0.40	9.30	0.00	9.60	

TABLE 2(L): POSTAL SERVICES PROJECTS

7.0.2	Feasibility Study on the Introduction of a Postal Giro System in the SADCC Countries	0.20	0.20	-	-	-	0.20	Funding sought.
7.0.3	Technical Assistance to Postal Services	1.40	1.00	0.40	0.40 (MOZ) 0.10 (SWE)	-	0.90	Additional funding sought.
7.0.4	Postal Terminals-Regional Programme for Improved & Secured Mail Handling at the Sorting Centre	27.70	16.30	11.40	0.60 (SWE) 2.60 (ANG) 0.80 (BOT) 2.00 (LES) 0.10 (MAL) 1.10 (MOZ) 0.40 (SWA) 2.00 (TAN) 2.40 (ZIM)	-	15.70	Additional funding sought.
7.5.1	Sorting Centre & Stamp Printing Facilities in Maputo, Mozambique	2.30	2.00	0.30	1.00 (MOZ) 0.20 (SWE)	-	1.10	In addition to the local cost US$0.7 million of the foreign component has been funded by Mozambique (acquisition of printing machinery).

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Sub-total	31.60	19.50	12.10	13.70	0.00	17.90
TOTAL	6481.20	5805.60	675.60	239.20	512.30	3576.90

ANNEX 3

SPECIAL ASSISTANCE PROGRAMME FOR ANGOLA

BACKGROUND AND OBJECTIVES

The SADCC Council of Ministers approved in 1988 at Arusha the preparation of a special Assistance Programme for Angola in the light of destabilisation caused by South Africa. The report is a background document for the co-operating partners of the SADCC, outside the regular SATCC project programme.

The Special Assistance Programme, as presented by the government of Angola, covers ports, railways, road infrastructure, road transport, civil aviation and telecommunications. The report prepared by SATCC-TU is in the form of a development plan and includes description of technical data and physical aspects, past and present operational performance, an economic review with tentative traffic forecasts, as well as detailed descriptions of the sub-projects as well as justification for the project, project components, estimated costs and implementation period.

IMPLEMENTATION COSTS

Indicative cost estimates for the Emergency and the Short-Term Phases are as follows:

IMPLEMENTATION COSTS FOR THE EMERGENCY AND SHORT-TERM PHASES (US$ MILLION)

Project Category	Emergency Phase	Short-Term Phase	Total
General Projects	2.00	3.00	5.00
Port Water Transport	11.30	2.40	13.70
Railways	57.90	59.50	117.40
of which CFM*	32.60	44.15	76.75
CFL*	23.05	15.35	38.40
Roads	27.25	113.50	141.00
Road Traffic	50.00	-	-
Civil Aviation	11.40	-	11.40
Telecommunications	1.40	-	1.40
Total	161.50	182.40	343.90

CFM - Caminho de Ferro de Mocamedes
CFL - Caminho de Ferro de Luanda

The Emergency Phase (1989-1990) aims at carrying out the most urgent rehabilitation work in order to allow for opening of closed parts of the railway links and to ensure that traffic continues without interruption due to lack of maintenance capacity.

The Short-Term Phase (1991-1993) includes the most essential rehabilitation work and replacement of equipment in order to obtain an operational capacity needed in order to serve the hinterland of Luanda and Namibe under normal conditions.

STATUS

The report was presented to the cooperating partners in conjunction with the Annual Consultative Conference held in Luanda 1989.

A Ten Year Development Plan for Lobito Port Transport System has been prepared and a Technical Coordination Conference held to mobilise funds, for the Lobito Transport System, separate from the Special Assistance Programme for Angola.

Terms of reference for a feasibility study into preparation of a Ten Year Development Plan for Namibe Port Transport System have been agreed by Angola and Namibia for inclusion on the regular SATCC project programme.

The Namibe Port Transport System Plan will partly replace the relevant projects in the Special Assistance Programme for Angola.

Other Angolan transport and communications projects are described in the document Special Assistance Programme for Angola. Additional copies of the Special Assistance Programme for Angola will be available from the Angolan Ministry of Transport and Communications and from the SATCC.