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Contents	Page
1. Introduction	3
2. Road Infrastructure	3
3. Road Traffic and Transport	3
3.1 General	3
3.2 Training Recommendations	4
3.3 Implementation Plan and Cost Estimate	5
4. Railways	6
4.1 Contents of Project	6
4.2 Organization of Implementation	7
4.3 Implementation Programmes	8
4.4 Status of Financing	12
5. Ports	13
6. Civil Aviation	13
7. Telecommunications	14
7.1 General Background	14
7.2 Training Projects in the SATCC Programme	14
8. Meteorology	16
9. Postal Services	17

1. Introduction

In principle all training activities in the SADCC Member States are coordinated by the Regional Training Council, Swaziland (RTC).

Considering the size of the training problems in transport and communications and the numerous disciplines and specialized needs involved, it has been agreed with RTC that for the time being SATCC will initiate such training and coordinate such activities. RTC is being consulted on these matters regularly.

On the above basis SATCC has initiated various training activities, partly included already in the SATCC programme of projects. A presentation of the SATCC training activities was given in conjunction with SADCC Annual Consultative Conference in Arusha in January, 1988. This paper is an updated version of that document.

2. Road Infrastructure

A review of existing training arrangements and needs in the member countries is being made, to form a basis for the establishment of a regional training programme.

This programme is to take into account specifically the needs for training support in the implementation of the results of the work undertaken by the Working Group on Road Infrastructure, such as introduction of pavement maintenance management systems etc.

The new project No. 1.0.3, Harmonized Road Maintenance Management System (RMMS), in SADCC countries, includes significant training components covering planning and management as well as condition assessment of road networks.

It is expected that the programme will be finalized in 1989. Needs for technical assistance might arise from that programme.

3. Road Traffic and Transport

3.1 General

A Study on Road Traffic and Transport Training, Project No. 0.0.3 (1) has been completed in principle. Some corrections will still have to be made before the Final Report can be approved.

The study covers three areas of training in the regional road transport sector. These include: (a) mechanical trades; (b) carrier operations and management personnel and (c) vehicle regulation personnel.

In very broad terms the Study estimated for each SATCC state the numbers of individuals presently engaged in these areas. The vehicle fleet to the year 2000 was then projected and, against norms established through the Study, the manpower requirements to the year 2000 were forecast.

The key indicators encompassing the entire region upon which the Study proposals are based are as follows:

Total vehicles in SATCC States (1987):	760,000
Percent Commercial:	35%
Estimated Manpower Engaged in Sector (1987):	
Mechanical Trades	410,000
Operation /Management	395,400
Regulation	630
Projected Vehicles in SATCC States (2000) :	1,420,000
Manpower Requirements in Sector (2000) :	
Mechanical Trades	794,000
Operations/Management	778,000
Regulation	1,200

3.2 Training Recommendations

Based upon the projected needs, ten types of programmes have been proposed. These are shown below together with the type of facility recommended for use:

Mechanical Trades	
- Vehicle Rebuild Programme	Local
- Trade Skill Upgrading Programme	Local
- Apprentice Development Programme	Local
Carrier Operations and Management	
- Senior Managers Training Programme	Sub-Regional
- Operations Managers Training Programme	Sub-Regional
- Maintenance Managers Training Programme	Sub-Regional
- Supervisors Training Programme	Sub-Regional
- Small Operatos Skills Upgrading Programme	Sub-Regional
- Drivers Training Programme	Local

3.3 Implementation Plan and Cost Estimate

Because of the limitations in scope of the original study it was understood that only broad indications were possible in terms of the numbers of trainees which would need to be accommodated. As a result of this a preliminary implementation plan lasting about three years was developed and divided into the following expenditure components:

- a. Establishment of a specialized Task Group which would be responsible for refining the projections and the detailed development of the training programmes, including the Pilot Phases. Duration: 9 months. Estimated Cost: USD 300,000.
- b. Establishment of a Training Plan Coordination Unit which would follow on from work of the Task Group and be responsible for implementing the Pilot Phases of the Training Programme. This would include following up of funding requests, detailed development of curricula, training standards and examination procedures, monitoring the effectiveness of the Pilot Phase and designing the programmes beyond the Pilot Phase. Duration 3 years. estimated Cost: USD 1,000,000.
- c. Implementation of two Mechanical Trades Pilot Programmes
 - Vehicle Rebuild Training Unit
One VRT Unit in each state for a period of two years at an estimated cost of USD 630,000.
 - Trade Skill Upgrading Package
Initial two year trade skill upgrading programme at an estimated cost of US\$630,000.
- d. Implementation of six Pilot/First Phase Programmes
 - Senior Manager Training Package
Two years at three sub-regional locations at an estimated cost of USD 670,000 per location.
 - Operations Manager Training Package
Similar time and cost to the Senior Manager Training Package.

- Maintenance Manager Training Package
Similar time and cost to the Senior Manager Training Package.
- Supervisory Training Package
Similar time and cost to the Senior Manager Training Package.
- Small Operators Training Package
Two years at three sub-regional locations at an estimated cost of USD 500,000 per location.
- Driver Training Package
Two years in each member state at an estimated cost of USD 100,000 per location.

e. Implementation of the first phase of a regional regulatory package lasting two years is estimated at USD 1,800,000.

The above is a preliminary plan. Once the Final Report of the consultants has been approved, project packages will be finalized and approaches made to the financiers.

4. Railways

4.1 Contents of the Project

A Study on Railway Training programmes, Project No. 2.0.2, carried out by DeConsult of Germany, financed by the Federal Republic of Germany, has been completed. The Final Report has been approved.

On that basis Project No. 2.0.6, Development of Railway Training, has been included in the in the SATCC programme of projects. It includes the following :

USD (Thousand)

(i)	Management Development Courses	2.988,8
(ii)	Instructors Training	830,1
(iii)	Language Training	500,0
(iv)	Specialist Courses for Managers	541,0
(v)	Technical Courses for Engineers	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)	SATCC Railway Training Expert (for 3 years)	261,0
	Total	8.599,3

In addition there is a separate project No. 2.5.13, Development of Railway Training for Portuguese speaking personnel, an ongoing project.

4.2 Organization of Implementation

The Federal Republic of Germany has pledged to finance the bulk of the 6-year programme. Utilising German funds with RTC a Pilot Phase of the programme is being initiated. Additional funds are expected to be included in the German budget for the rest of the programme.

GTZ, on behalf of the German Government has concluded an agreement with DeConsult of Germany, for the back-up services for the implementation of the project. In accordance with the approved plan of action DeConsult has engaged a Regional Railway Training Expert attached to the Technical Unit of SATCC.

Preparations for various courses, to be held at the existing railway training institutions in the region, will be carried out by the Railway Training Expert supported by DeConsult and the Technical Unit of SATCC.

Each course will be run by a Course Director acting with project Implementation Groups and reporting to the Meetings of Railway Administrations (Training Sub-group).

During the Pilot Phase two Management Courses and one Instructor Training Course will be conducted in 1989. These courses are scheduled to be held in Swaziland commencing in April-May, 1989.

4.3 Implementation Programmes

Preliminary plans for the implementation programmes are described below. Detailed plans are being prepared by the Railway expert assisted by DeConsult.

(i) Management Development Courses

The target groups for the Management Development Courses are presented in table 2.

Table 2

Target Groups for management training

	English speaking Target Workforce		Portuguese speaking Target Workforce	
Angola			100	8000
Botswana	10	1000		
Malawi	90	4000		
Mozambique			300	15000
Swaziland	30	1000		
Tanzania	100	7000		
Zambia	150	8000		
Zimbabwe	250	18000		
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	630	39000	400	23000

(ii) Instructors Training

The target group of those in need of pedagogical training are present instructors, those railwaymen either seeking a career as instructors and those willing to serve as instructors for a minimum of three years as part of their career progression.

Possible participants have been identified as follows:

Table 3

Target Groups for Instructor Training Courses

	English speaking	Portuguese speaking
Angola	-	15
Botswana	4	
Malawi	7	
Mozambique		15
Swaziland	4	
Tazara	10	
Zambia	15	
Zimbabwe	20	

Total	60	30

Each course is designed for 16 participants.

(iii) Language Training

To efficiently utilize the existing railway institutions and to provide bilingual personnel for international railway operations, it has become necessary to make special arrangements for language training for railway personnel.

The objectives of language courses are threefold, namely:

- (a) to teach Portuguese to English speaking instructors so that they are able to teach Portuguese speaking students in both English and Portuguese speaking countries at existing railway institutions;
- (b) to teach English to Portuguese speaking students, so that they can be taught at training institutions in English; and
- (c) to teach English or Portuguese, as the case may be, to personnel engaged in international railway operations.

To begin with a language course for 25 Portuguese speaking persons, selected staff, to learn English is included in the programme.

(iv) Specialist Courses for Managers

There is need for special courses for railway staff engaged in

specialist activities such as marketing, traffic costing electronic data processing, financial and personnel services, productivity and for the training of supervisors and junior managers.

Each course is planned for 3 weeks but this duration could be varied as necessary.

The objectives of the courses are:

- a) introduction of new skills and techniques which lead to greater efficiency in the specialist activity;
- b) refurbishment of the skill of existing practioners;
- c) restatement of the role of the specialist in the management team.

The initial target group consists of some 280 railway men.

(v) Technical Courses for Engineers

When new equipment or technology is introduced into a railway system there is usually an initial training given by the suppliers or the installers. This, however, is only training of the first operators and engineers. Replacement personnel do not have the benefit of such instruction.

In addition to this there is a shortfall in the understanding of new techniques now that electrical circuits are being replaced by electronics and solid state technology. Mechanical equipment is increasingly controlled by electronic controls and measures.

The objectives of the courses are to ensure

- a) familiarity of engineers and technicians with new equipment,
- b) up-dating of the technical knowledge of existing engineers and technicians,
- c) practical application of skills of qualified but unexperienced railway staff.

The target group for the course is 400 railway men.

(vi) Provision of Training Aids

Within the training institutions of the SATCC Railway Administrations there is uneven distribution of teaching aids, especially equipment such as that for video filming and

especially equipment such as that for video filming and recording, overhead projectors and facilities for producing transparencies, training models and so on.

Those students undertaking technical training should be equipped to practice their skills when again taking up their duties. At the end of suitable courses, those students who succeed should be provide with personal basic tool kits. The content should be based on the duties the students will take up but should include hand-tools gauges, measuring equipment, etc.

In addition, the workshops where the training courses are provided will need additional equipment for the student to use and learn with.

Further provisions are proposed for the improvement of buildings, classrooms and other training-related equipment.

A detailed plan is included in the Project Unit Definitions prepared by DeConsult in connection with the Study on Railway Training Programmes.

(vii) Production of Manuals and Handbooks

Manuals and handbooks are an important aid in training and their retention and use to be encouraged after training. For their use to be widespread among railway men they must be

- a) well produced of good quality card and paper;
- b) entirely relevant to the subject matter and region in which they are to be used; and
- c) the content and illustrations focused exactly on the target users.

For these reasons most manuals and handbooks need to be written and produced especially for the SATCC Railway Administrations.

Some manuals and handbooks already exist for the regional Railway Administrations but, with only a few exceptions, need to be updated and improved in quality of content and production.

The SATCC Railway Administrations together with the Consultants have identified the following areas of activity of being in need of new handbooks on most railways:

- a) permanent way maintenance,
- b) unloading/loading procedures,

d) accident prevention.

(viii) Support to Railway Training Subgroup

The combination of effort of the Railway Training Sub-Group and the Consultants has had a beneficial effect on the project progress and development. The inter-action of the two has generated a dynamism which neither perhaps could have achieved separately.

The objectives of the approved funding are to

- a) prevent the momentum gained in the development of a SATCC railway training manpower and development strategy being lost;
- b) assist the Training Sub-Group to act on behalf of the GMs of the Railway Administrations to direct the Course Directors, the Consultants and others working on the implementation of the project; and
- c) support the Sub-Group by providing for the
 - conduct of investigations,
 - preparation of reports and analyses, and
 - attendance at meetings.

4.4. Status of Financing

Switzerland has pledged to finance provision of training aids (USD 2.0 million). Canada, the Commonwealth Secretariat and the United Kingdom have expressed their willingness to finance the Language training (USD 0.5 million). Canada is considering also participation in the financing of Technical Courses for Engineers. The Federal Republic of Germany is expected to finance the rest of the programme.

Formal approaches have been made to Germany and Switzerland. It has been agreed that Germany will coordinate their programme with that of Switzerland.

Formal approaches to other financiers will be made once the details of the Technical Courses for Engineers and Language Training have been worked out.

5. Ports

The following port school projects are included in the SATCC programme:

- P.3.1.3, Port School, Lobito Angola; UNDP has been approached;
- P.3.5.5, Port Staff Training Institute, Mozambique; Agreement with NORAD has been signed, fully financed;
- P.3.7.2(10) Technical assistance to THA and Improvement of Bandari College; Financed by NORAD and Tanzania.

In addition several training programmes are included in various capital investment projects.

Training programmes have been carried out by UNDP/UNCTAD.

For the implementation of Project No. 3.1.3, Port School, Lobito, (USD 5.3 million), UNDP has been approached with a request that the project be included in the Fourth Cycle of their Regional Programme.

6. Civil Aviation

A Civil Aviation Manpower and Training Requirements Survey, Project No. 4.0.6, has been completed by ICAO.

A Training Task Group was established to find out to what extent manpower requirements could be taken care of in the SADCC region.

The Task Group concluded that the majority of courses needed by the Directors of Civil Aviation and National Airlines for their personnel are already available in the region, or could readily be made available by using visiting instructors.

The following training projects are included in the SATCC programme:

- P. 4.5.4, SADCC Boeing Flight Training Centre, Mozambique; EEC approached for funding;
- P. 4.8.5, Improvement of Zambia Air Services Training

Institute (ZASTI).

ZASTI has been reorganized, and reports now to the Ministry of Power, Transport and Communications. Activities to improve the programmes at ZASTI have started, partly financed by UNDP and EEC.

7. Telecommunications

7.1 General Background

Medium to advanced training still remains to be one of the basic needs lacking support for the successful and efficient operation and maintenance of the telecommunications facilities.

National level basic needs are available in the national training centres, except in Angola where training facilities have been disrupted and require rehabilitation and expansion to cater for and operate the telecommunications infrastructure.

SATCC Project 5.1.6, Extension of Telecommunications Training Centre, Angola, has been included in the SATCC programme in order to improve and update the basic to medium level training facilities in Angola. So far no funding has been identified for the implementation of this very important project.

Most Administrations in SADCC Countries with the exception of Botswana, Swaziland and Lesotho, provide comprehensive medium level training facilities. An Agreement has recently been signed between Malawi and the three countries (Botswana, Lesotho and Swaziland) for Malawi to expand her training facilities to accommodate the needs of the three SADCC member states.

The expansion in Malawi has attracted financing from EEC. Further financing is necessary to provide for teaching aids and Laboratory test equipment.

Advanced training facilities within SADCC are not fully adequate and need Co-operative effort and resources for training engineers and managers in order to improve the quality and institutional development of Administrations and the quality of telecommunications services offered to customers.

7.2 Training Projects in the SATCC Programme

SATCC has included the following projects in the current programme of activities in order to cater for the advanced

training needs of the region:

- (i) Project No. 0.0.3 (4), Training Course in National Telecommunications Network Planning.

The project is to provide short-term programme for about 30 engineers, managers and planners in order to satisfy the need for national network planners.

The objective of the course is to give understanding of the process of Fundamental Master Planning and be able to maintain, modify and develop such plans to meet the changing requirements.

Funding has been procured from SIDA to run two courses during the next two years.

- (ii) Project No. 0.0.3 (3), Satellite Communications Technology Course

The course is to provide competence in Satellite Communications technology including digital systems such as IDR and DCME technologies to operations, maintenance and planning staff.

The first course ran in 1987 funded by CIDA, a follow-up course will be organised for this year, 1989, with funding from CIDA.

- (iii) Project No. 0.0.3 (7), Workshop/Seminar on telephone Switching Signalling Systems in the Sub-region

The seminar is to promote the detailed comprehension of the signalling systems to telephone switching engineers. With the advent of digital switching equipment new signalling methods are being introduced in the inter-country links which will need harmonization for compatibility.

The first seminar is to be held this year, 1989, and will be funded by the I.T.U. Financing will be required for a follow-up workshop.

- (iv) Project No. 0.0.3 (8), Local Network (External Plant) Planning Course

The project is aimed at complete understanding of Local Network (External Plant) planning techniques, and improvement and enhancement of the capability to plan by technicians and engineers in the region.

Lack of detailed external plant planners and construction personnel is one of the major problems retarding the growth and extension of telephone and telex services.

The first course was funded by Italy in 1988. Due to manpower demand a follow-up course with financing from Italy is due this year, 1989.

- (v) Project No. 0.0.3 (10), Telecommunications Course in Traffic Tariffs and Accounting Procedures.

Most Administrations in the region are experiencing difficulties in qualitatively quantifying traffic and dimensioning their networks for interworking with national, regional and international relations. There also disparities regarding regional collection charges and accounting revenue division procedures.

Financing is required to run the course in the region and provision of computer facilities and development of the relevant software programmes.

- (vi) Project No. 0.0.3 (9), Telecommunications Training Needs Survey

Also included in the SATCC programme is Project No. 0.0.3 (9), Telecommunication Training Needs Survey, which aims to undertake a training needs survey to make recommendations for a co-ordinated programme of training and manpower requirements over the next 5 to 10 years.

Request for financing for the study Survey has been made and the final report is expected by the end of 1989. Financing will be required for the implementation of the recommendations emanating from the study.

8. Meteorology

The existing project in the SATCC programme Project No. 6.0.1, Meteorological Expert Services and Fellowships, is based on an evaluation of the requirements in the various national meteorological services made in connection with the preparatory mission for the FINNIDA/SATCC/WMO Meteorology Project, updated during the recent preparatory work for the second phase of that project. The Project No. 6.0.1, is partly financed under the first phase of the FINNIDA/SATCC/WMO Project and implementation has started. It is expected that the financing of the greater part of the remaining requirements in expert services and fellowships with be covered under the second phase of the FINNIDA/SATCC/WMO Project.

In accordance with a decision of the Directors of Meteorological Services of SADCC countries, a survey has been carried out on existing meteorological training facilities in the member countries, to facilitate effective use of regional facilities to meet regional requirements. The survey indicated that the existing facilities in the Region are more or less adequate to meet the training requirements for Class III and Class IV meteorologists. Training of most Class II and all of Class I meteorologists will, at present and in a foreseeable future have to be accomplished outside the Region.

9. Postal Services

Project No. 7.0.1, Postal Training Development Programmes, has been included in the SATCC programme for the promotion of postal training. It includes the following:

- (i) Management Courses;
- (ii) Refresher Course for Instructors;
- (iii) Formation of a Training Subgroup reporting to meetings of Directors of Postal Services
- (iv) Revision of regulation books and related matters combined with training;
- (v) Equipment, both hardware and software for postal training;
- (vi) Technical assistance and scholarships for training purposes;
- (vii) Development of management courses include special courses on postal systems, statistics, financial work, postage policy, marketing, philately, customs clearance etc.

Finland has financed several management courses (Study Cycles). A course for the Portuguese speaking Countries will be arranged in 1989.

A Refresher Course for Postal Instructors has been held financed by the Nordic Countries. Additional courses, also in Portuguese, are needed.

The Directors of Postal Services in SADCC Member States have concluded that technical assistance, and on the job training, are needed to provide a proper background for the development of postal services in the SADCC region. Programmes to that effect are being prepared.

In addition the following training projects are included in the programme to serve the basic training needs:

- P. 7.1.2, Development of Postal Training in Angola;
- P. 7.3.1, Postal Training School in Lesotho (equipment and transport facilities);
- P. 7.4.2, Upgrading of Postal Wing of the MTC in Blantyre, Malawi;
- P. 7.5.2, Development of Postal Training in Mozambique.

Preparations are being made to expand the existing Posts and Telecommunications Training Centre in Blantyre, Malawi, to be a regional institution for higher postal training. At present the Centre serves Malawi, Botswana, Lesotho and Swaziland only.