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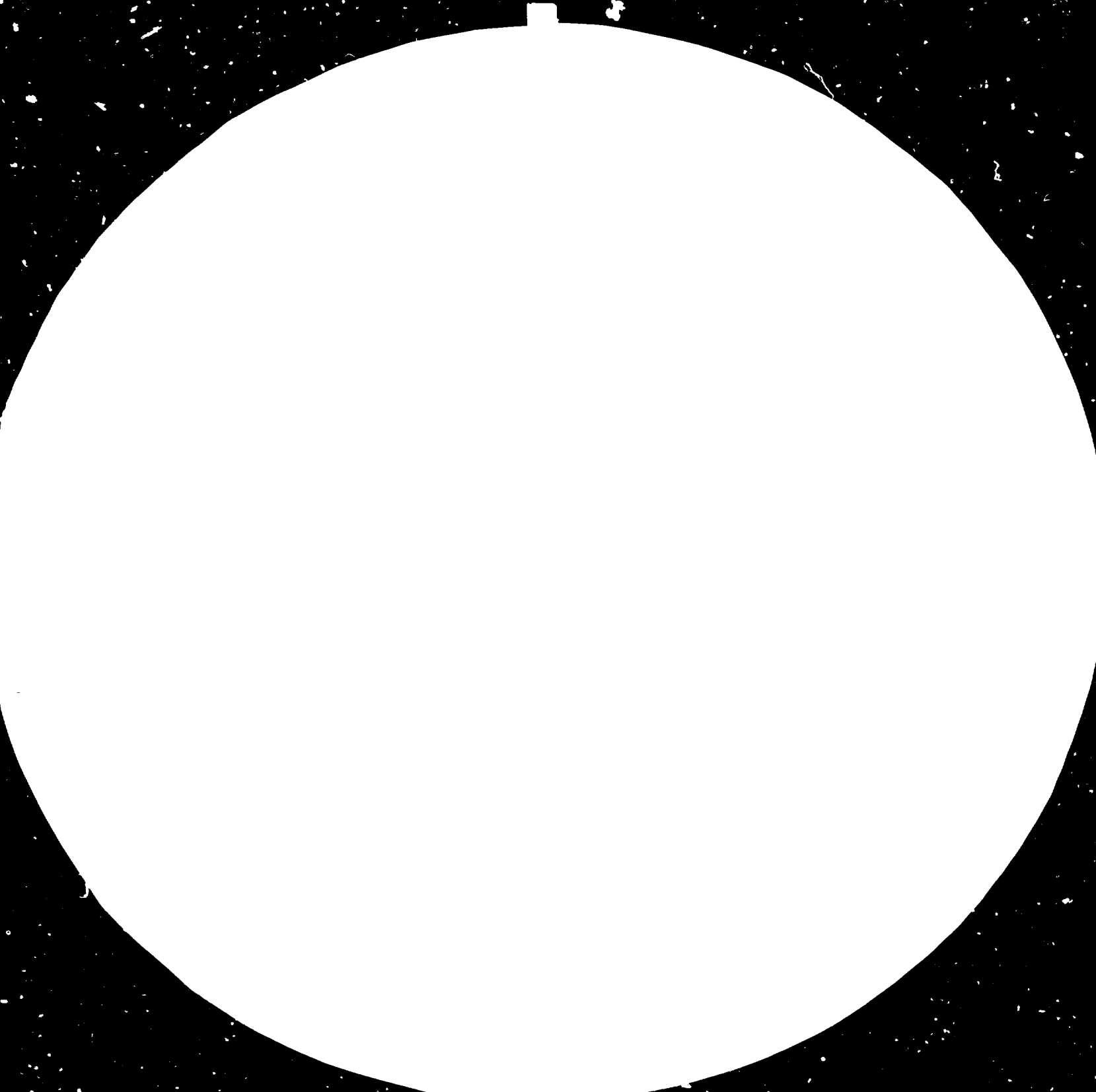
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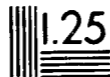
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Luanda, Angola, 19-24 October 1981  
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U.W. Lins

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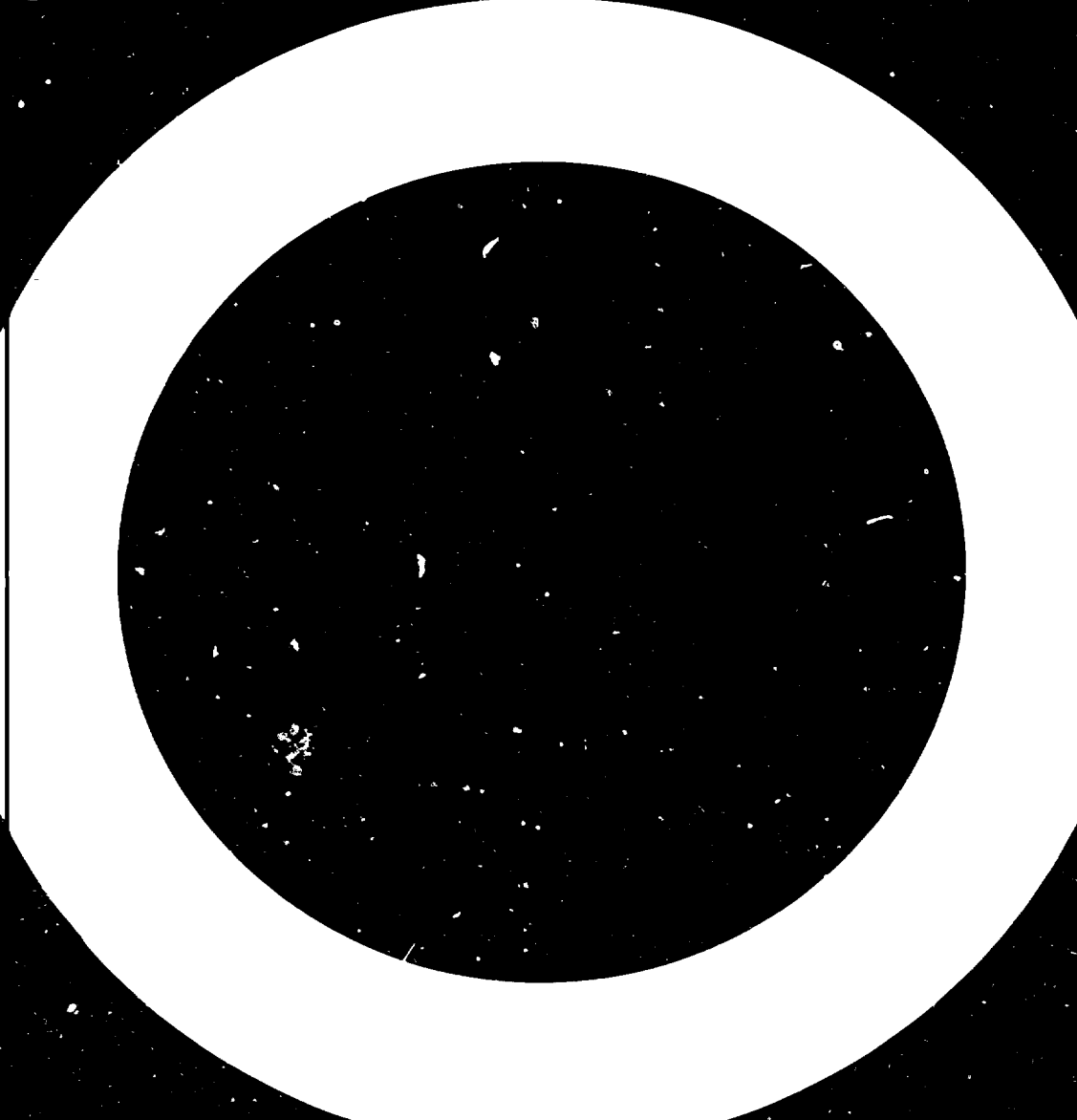
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I. BASIC BACKGROUND PAPER <sup>1/</sup>

A. INTRODUCTION

Following its recent independence in the 70s, after centuries of colonization and long periods of struggle, the industries of the five Portuguese speaking African countries have very low levels of production and productivity due to the dramatic lack of qualified personnel and intermediate and senior staff.

The training or improvement of industrial manpower is one of the national priorities and is designed to strengthen the industrial potential and to favour economic and social development.

The International Seminar on Industrial Training was organized by UNIDO with a view to permitting the representatives of the five countries responsible for the human resources development policy to exchange experiences and information, thus permitting the lack of qualified personnel in general, and highly qualified personnel and staff in particular, in the industrial sector to be overcome.

A great opportunity will be given to Cape Verde, Guinea-Bissau, Angola, Sao Tome-Principe and Mozambique representatives to find ways of creating mechanisms and facilities which will reinforce their efforts in the industrial training field.

The Seminar will have the following objectives in particular:

- a) To explore facilities permitting them to acquire means or establish policies in order to overcome the lack of qualified personnel.
- b) To stimulate the industrial potential and at the same time to reinforce the bases of the industrialization process by training and improving industrial personnel.
- c) To reinforce technical cooperation between developing countries on an inter-regional basis.

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<sup>1/</sup> Prepared by Ubirajara Wanderley Lins, UNIDO consultant.



Active methods will be used in the Seminar. The representatives of the five countries will participate in working groups and this will permit each country to draw its own conclusions and apply its solutions.

In order to organize and prepare the Seminar and Basic Document, UNIDO contracted a Consultant who visited the five countries concerned in advance and collected information and subsidies in situ. These will be presented further on.

#### B. REPUBLIC OF CAPE VERDE

From observations, it was found that the country's industrial structure is practically zero. Its share of the gross internal product is 10% and industrial employment involves approximately 3% of the economically active population. The general rate of illiteracy is approximately 50%, and the level of technical and professional training is very inadequate. However, there is a basis for extra-scholastic industrial training provided that the scholastic level of the population under 30 years old is high. Scholars represent 95% of the population between 7 and 14 years old.

The development strategy required for the next two decades to ensure national reconstruction is centred on three main objectives, the outstanding one being the creation of a large-scale qualified work force.

At the present time, Cape Verde has approximately 640 students overseas, of which 35% are intermediate and 65% are senior scholarships.

The extremely small number of intermediate and senior personnel constitutes a serious setback to the country's development. Personnel are frequently required to carry out diverse tasks.

An inventory taken in 1979 showed that Cape Verde had approximately 180 national technical personnel (and an identical number of foreigners), and half of them worked in the sanitary and educational sectors.

Senior personnel and engineers represented 4%, intermediate technical personnel only 3(?) and highly qualified personnel 6.3% of the total number of employees.

The 1980 census showed the following breakdown:

Resident population: 269,093 inhabitants  
Economically active population (15-64 years): 140,000  
Workforce: 90,000

The percentages permanently employed in the industrial sector are shown below:

Mining industries:	1.1%
Manufacturing industries:	5.5%
Civil engineering:	.9%(?)
Water and power production and distribution:	1.1%

Where senior personnel are concerned, the most serious immediate shortages in the industrial sector are in the mechanical engineering, electro-mechanical engineering, architectural and telecommunications engineering sectors.

The structure of overseas student exchanges for intermediate and senior levels shows significant distortions, and the coordinated implementation of a flexible system of extra-scholastic professional training is becoming essential.

It must be pointed out that approximately 60% of industrial investment will be concentrated on the São Vicente naval base in the next few years.

#### POTENTIAL AND FACTORS FOR INDUSTRIAL DEVELOPMENT

- Existence of usable resources for industrial purposes, i.e. marine resources and unconventional construction materials and energy
- Possibility of increasing market through regional cooperation and the installation of facilities designed for export, naval construction and repairs, processing of fish by-products, construction materials, mechanical engineering, printing plant, chemicals and paracheicals being the main examples.

The following projects are in the initial or decision-making stages:

Mining industry (1)  
Manufacturing industry (8)  
Power production and distribution (6)

By 1985, 27 new projects could well be started in manufacturing industry.

In view of the fact that the fishing industry is of considerable economic importance, it must be pointed out that the following initiatives will be taken in the industrial training field:

- Course on new owner-operator fishing techniques
- Overseas preparation of 15 fishermen for industrial fishing
- Training of refrigeration specialists for the existing large warehouse
- Overseas preparation of 8 economists and 4 industrial fishing technicians.

#### INTERNAL AND EXTERNAL MARKETS

Several production plants are in operation for the internal market, i.e.:

- Production of wheat flour
- Manufacture of trousers, shirts and military uniforms
- Production of tiles and bricks
- Production of fibreglass for domestic and civil engineering purposes
- Manufacture of shoes
- Treatment of milk
- Small vessel repair yard (up to 400dwt).

The Government is interested in installing a large vessel construction and repair yard with a view to meeting the requirements of the external market. For this project, 18 senior staff must be trained overseas, in addition to personnel to be trained on the project itself. The shirt and trouser factory is already exporting to Angola.

#### INDUSTRIAL TRAINING

Where industrial training is concerned, the Mindelo Technical School must be mentioned. Here, 200 students are trained per year. It is to be reorganized and may be used as an inter-regional centre of excellence.

In order to coordinate industrial training activities, the Cape Verde Government is counting on an ILO project designed to create an Institute for Professional Training. This Institute will be a flexible planning and coordinating organization for professional training which may develop along three main lines, i.e.:

- Accelerated training of adults and apprentices at multi-purpose centres (4 to 6 months)
- Professional training and improvement at specialized centres (6 to 12 months)
- Training and improvement in companies and company training centres.

Extra-scholastic highly qualified training will be effected by means of projects, and will be carried out overseas during the first stage of development.

The specific purposes of the Professional Training Institute are as follows:

- To programme, coordinate, support and give impetus to extra-scholastic professional training operations
- To promote, implement and complete operations which fill in gaps in the professional training field
- To keep the inventory updated and to control the use of systems, equipment and other means linked to professional training
- To create a team of instructors and to organize their operations
- To promote apprenticeships and the transfer to the so-called working life
- To administer, control and evaluate the use of exchanges for improving workers, instructors and intermediate level personnel.

Under the professional education programme, the introduction of a professional school at Praia is being investigated.

#### MEDIUM AND LONG-TERM EMPLOYMENT AND TRAINING

9900 new industrial employees must be trained in the 80s, and 2940 by 1985. It is estimated that industrial employment should cover 25,000 working posts by the end of the century, and 60% will be engaged in exports. In the long term, the mechanical, electrical and electro-mechanical engineering industries will represent the main training sector. The fishing industry and agricultural-food industries must generate 7500 working posts by the year 2000. The construction materials sector must also show a high level of development. In order to meet this demand, qualified manpower in the industrial sector and other sectors of the economy will require the following personnel to be trained in the next 20 years:

- 3100(?) senior personnel and engineers
- 6400 intermediate engineers
- 18,800 qualified and highly qualified workers
- 31,900 semi-skilled workers.

In order to meet this demand, flexible and intensive methods will be applied, i.e. by means of extra-scholastic training.

However, in order to achieve these objectives, international cooperation will be necessary in respect of the higher industrial training courses.

### C. REPUBLIC OF GUINEA-BISSAU

In particular, the Republic of Guinea-Bissau is non-industrialized. The basis of the economy is rural, and this occupies more than 90% of the economically active population.

Since agriculture is the basis and industry is the development driving force, certain priority areas were established:

- To ensure a regular income of foreign currency by developing the agricultural-cattle breeding industry for exportation, and the fishing and wood working industries.
- To develop the capital goods industry for agriculture
- To develop the popular consumer goods industry.

The following main industrial groups or sectors can be identified:

- Electro-mechanical engineering industry
- Agricultural industry for exportation and internal consumption
- Civil engineering industry
- Packing industry
- Fishing industry
- Wood working industry.

The first conclusion is the dramatic under-utilization of industrial plant installed. In general, this functions at less than 30% of its potential capacity. In addition, the industry is growing at a much faster rate than the national capacity for organization, administration and utilization, due to the lack of qualified personnel and manpower.

There are considerable difficulties in the maintenance, spares, transportation, marketing and company management sectors.

The Government is preoccupied because it cannot create highly sophisticated technological "islands", and this is completely out of context with the national reality.

#### POTENTIAL AND FACTORS FOR INDUSTRIAL DEVELOPMENT

In the so-called "modern" sector which comprises industrial companies, the main criterion is to ensure the recovery, consolidation and maintenance of existing equipment and the creation of an infrastructure of human resources capable of making this equipment productive. In fact, an attempt is being made to reduce the rate of expansion and to concentrate on programmes for the supply of spares, training qualified personnel and manpower, creating repair and maintenance systems and organizing control and accounting systems.

At the present time, Guinea-Bissau has 350 projects in progress.

The administration of this number of projects with a shortage of national personnel causes obvious problems insofar as integration at national level is concerned.

In order to reduce sectorial problems, the Government anticipates a programme of inter-sectorial assistance based on technical assistance in order to ensure industrial maintenance.

The following industrial sector projects may be mentioned:

- Development of electrical power, and organization of national water and electricity systems
- The development of technical and operational services for civil aviation.

All projects include various stages for preparing qualified manpower and for training intermediate and senior staff.

## EDUCATION AND INDUSTRIAL TRAINING

After independence, a reform of the educational system was based on the following basic principles:

- Education of adults
- Pre-scholastic levelling between personnel of various social-economic origins
- Professional training.

The educational system is based on three levels, i.e:

- Basic education (6 years)
- Secondary education, corresponding to general multi-purpose education (5 years)
- Intermediate polytechnic education.

The professional training inherited from the colonial era comprised a commercial and industrial college which gave way to the Technical Institute for Professional Training (ITFP). Using a set of 14 adjacent buildings in large grounds (previously a barracks), the ITFP can be considered as the only centre of excellence in the country and after the receipt of new equipment to the value of US \$1,300,000, it will be capable of meeting the national requirements and serving as an inter-regional centre.

The Institute functions as an autonomous technical organization and comes under the administration of the Ministry for National Education.

For expansion, the Institute depends on an ILO project, and at the present time more than 20 foreign assistants and 19 national instructors are included in its teaching-administrative personnel.

### Objectives of institute

In the long term, the ITFP must be an organization providing concepts, experiments and assistance for the national policy of technical and professional training.

The short-term objectives during the first stage up to 1985 are as follows:

- a) After training: to obtain pupils capable of continuing the operations of international personnel when the latter have departed.

- b) After educational training and technological improvement: the acquisition of instructors required to carry out training functions in the various sectors.
- c) To prepare personnel in the following sectors:
- general mechanical engineering
  - vehicle mechanics
  - electricity
  - civil engineering
  - welding
  - refrigeration
  - commercial and secretarial services
  - rural sector.

At the present time, 201 students are enrolled, 85 in general mechanical engineering and 116 in civil engineering.

The following training activities are being carried out by the ITFP:

- Apprenticeships for young people which will conclude the basic training and will last for 3 years
- Adult training courses
- Improvement courses for adult workers
- Educational training and technical improvement course for Institute instructors.

#### OVERSEAS TRAINING

The non-existence of senior courses at intermediate engineer level in the Republic of Guinea-Bissau obliges the Government to send a large number of scholars overseas. In 1980, 1180 trainees studied in 20 different countries. Of this total, 214 trainees were from the industrial sector, 149 being involved in senior courses, 75 in intermediate courses and 10 in quick professional training courses.



D. DEMOCRATIC REPUBLIC OF SAO TOME AND PRINCIPE

The Democratic Republic of Sao Tome e Principe is also an essentially agricultural country, its economy being based on the production of cacao, coffee and copra.

Due to a lack of statistical data, it is difficult to present more precise details regarding the employment situation. At a rough estimate, the active economic population is approximately 42,000 persons, the large majority (approximately 78%) working in the primary sector of the economy.

The industrial sector has developed very little. There are approximately 25 employers (production plants) distributed as follows:

Wood working industry, mechanical workshops, bakeries, refrigeration plants, plastic factories, alcohol plants and a brewery.

From data obtained (1979) these plants employ approximately 300 personnel, i.e. only 7% of the economically active population. The CETO brewery employs the largest number of personnel, i.e. 64 employees. Of this total, 4 are qualified. The rest will not receive any training prior to employment.

The only existing shipyard employes 13 persons, and the alcohol plant and plastic factory employ a total of 17 people. A fish salting and drying plant was not working due to lack of raw materials.

Like the other countries in the region, the lack of personnel and the inadequacy of administrative and production structures is the main reason for the hold-up in industrial development.

POTENTIAL AND FACTORS FOR INDUSTRIAL DEVELOPMENT

It can be estimated that industrial development will be based on three sectors:

- The repair and maintenance of existing equipment
- The mining industries
- The processing industry.

The repair and maintenance sector is the one which appears to offer the greatest possibilities for employment at the present time. This sector may be sub-divided into the following sub-sectors:

- 1) Refrigeration and air conditioning
- 2) Office machinery
- 3) Pipe erectors, welders, etc.

In order to overcome this problem, it is intended to create a National Repair Network, this project being considered of great importance for the sector. This network will include a central office at Sao Tome and four regional offices.

Where the mining sector is concerned, the mineral water, marine salt and civil engineering material sub-sectors must be mentioned.

One project in progress involves the installation of a pottery for the production of bricks, tiles and ceramic items for domestic use.

The processing industry is based on agricultural products, fishing and forestry.

The following small-scale industrial projects are under investigation:

- the modernization and development of salt production
  - expansion of an existing brewery
  - a mineral water plant
  - the expansion of a plastics factory
  - a butter and cacao powder factory
  - a fruit juice factory
  - an animal foodstuffs plant
  - a wood working plant
  - maritime fishing.
- In view of existing products (schools, industries, offices, etc.), the civil engineering industry is expected to construct 40,000m<sup>2</sup> within a maximum period of 5 years.

#### EDUCATION AND INDUSTRIAL TRAINING

Education in the Democratic Republic of Sao Tome and Principe has the following framework:

- primary education: 4 years
- preparatory cycle: 2 years
- secondary cycle: 5 years
- no higher education has been established.

18,000 pupils were enrolled for primary education per year and 3500 for the preparatory cycle according to 1979 figures. Secondary education is achieved at a single secondary school with approximately 2000 pupils per year.

For industrial training, two establishments are available, the Technical College and the Arts and Crafts College. Both are in a precarious state due to lack of equipment and specialized personnel. The Technical college buildings are very good and it provides the following courses:

- general mechanical engineering
- electricity
- commerce
- domestic training.

Approximately 300 pupils are enrolled and there are only four professional engineers, i.e. two nationals and two foreign assistants.

The Arts and Crafts School completes training in one year and a half, plus mechanical and electrical specialization, and approximately 40 pupils are enrolled.

In view of the difficulties involved in scholastic training, the preparation of personnel for the industrial sector is effected on a practical basis at the working site. In practice, in all existing production plants, apprentices are trained without the use of specialized methods, since the workers have no educational training and are of low professional level.

The European Development Fund is investigating a project for an industrial centre whose objective is to cover the existing and future requirements of maintenance and repair industries.

For this purpose, the centre will provide the following services:

- Repair and maintenance of mechanical and electrical equipment and systems
- The supply and storage of spare parts
- Technical assistance and consultancy
- Training of specialized personnel.

When in operation, this centre may serve as a regional centre for other countries, since the project also includes a boarding school. The training will be used to provide qualified operators, deputy foremen and intermediate personnel.

The requirement for qualified operators and intermediate personnel for the mechanical engineering sector is difficult to establish but it is estimated that the number to be trained to intermediate level is 35. Where the civil engineering industry is concerned, the same difficulties are involved and the requirement is estimated as 50.

Personnel training requirements have not been obtained for other sectors.

#### E. PEOPLE'S REPUBLIC OF ANGOLA

Angola is the African Portuguese-speaking country with the second highest population (approximately 10,000,000 inhabitants), and its economically active population represents 53% of the whole. Training of the working force in the industrial sector involves 16% of the national working force. This industrial working force contributes 21% to the gross internal product, while the manufacturing industry, with 231 production plants, only contributes 3%. The processing industry employs 39,400 people, i.e. 5.2% of the total number of intermediate and senior personnel. Another developed sector is the mining industry which employs 21,000 workers.

After independence in 1975, the industrial sector went through a severe crisis, a major consequence of the drain of intermediate and senior personnel. There was a drop in production and productivity and the work was disorganized. Difficulties in obtaining supplies of raw materials, accessories and equipment increased the problems.

In order to overcome existing difficulties and to support the policy of industrial development, the Ministry for Industry and Power created the National Department for the Training of Personnel (DNFQ) for the following purposes:

- To organize a system of industrial training, in collaboration with scholastic training
- To study and coordinate a system for monitoring for industrial personnel
- To stimulate industrial production, suggesting methods of organizing work and production techniques
- To prepare a programme for improving working conditions.

### POTENTIAL AND FACTORS FOR INDUSTRIAL DEVELOPMENT

The Angolan Government's priorities for industrial development are as follows:

- Heavy industry: the supply of capital goods, mainly for agriculture Basic chemical industry.

The following sub-sectors are outstanding: steel industry, civil engineering, naval repairs, light mechanical engineering, chemicals (cellulose, tyres and batteries), vehicle assembly and electrical and telephone cables.

Textiles, clothing, shoes and leather goods are priority light industrial sectors.

However, the petroleum industry constituted the main development factor in the country, since it has a considerable impact on other industrial sub-sectors. Efforts directed via UNIDO for cooperation in developing Angolan industry is based mainly on the following projects:

- An improvement in the efficiency of industrial firms
- The installation of a maintenance and repair centre
- A rehabilitation and expansion programme for the food industry
- Assistance with a paper and cellulose company
- The establishment of an industrial information service
- The development of the mechanical engineering industry.

The abovementioned projects include in their respective programmes the industrial training required for implementation.

### EDUCATION AND INDUSTRIAL TRAINING

The Angolan educational system caters for more than 1,200,000 young people. It is divided into three sub-systems, i.e:

- Basic education: 8 years
- Professional technical training: 4 years
- Higher education.

It is estimated that primary education involves approximately 25,000 teachers (1977 figure), of which only 7% have qualifications considered as minimum for the profession.

Of the total number of pupils covered by the educational system, approximately 120,000 are engaged in secondary education and 1200 in higher education.

There are also qualitative and quantitative deficiencies in secondary and higher education teachers.

The education policy is to create polytechnic institutes for intermediate level professional training.

Industrial training for sectorial development in Angola is the most outstanding of all the Portuguese speaking African countries. The Ministry for Industry created the National Department for Personnel Training (DNFQ) and was thus able to count on a host of educational experience and the installation of several professional training centres which are in normal operation. Many of these centres can be considered as centres of excellence, and as such may be integrated in the scheme for inter-regional cooperation.

Since the DNFQ was created, it has proceeded along three lines:

- Industrial training in companies
- Professional training in professional training centres
- Educational training in companies and overseas.

At the present time, various centres are in operation as follows:

1. Basic administration at Luanda
2. DIAMANG - linked to a diamond mining company
3. SOREFAME - linked to the Sorefame shipyard
4. TEXTIL - attached to a Luanda textile plant
5. PETROLIFERO - linked to the State petroleum company
6. TORNEIROS - linked to an industrial maintenance centre
7. COSTURA - of Luanda.

The graphic arts CFP and bakery are both in the final stages of installation and construction in Luanda.

Future projects for new professional training centres are as follows:

- Educational printing centre being constructed
- Provincial sugar school: being rebuilt
- Professional school for the card and paper industry
- FADÁRIO MUTEKA Centre - being rebuilt
- Electronics centre.

Educational training for centre instructors has been carried out in Angola or overseas and has involved international cooperation, mainly with Brazil and Italy.

In order to accelerate the training of technical, administrative and educational personnel, it is the DNFQ's intention to create a personnel development centre within a relatively short period. During the last three years, i.e. 1978, 79 and 80, the centres in operation provided 153 courses and enrolled a total of 2985 trainees in dozens of specialities in the industrial sector.

Training at a local working site is fairly advanced, thus showing the performance of the DNFQ. During the years 1978, 1979, and 1980, 116 courses were held in dozens of specialities and a total 1899 trainees were involved. This programme benefited 56 companies in the food sector, 37 in light industry and 75 in heavy industry, totalling 169 production plants. In order to support training operations in companies and professional training centres, the DNFQ provided training for instructors and teachers in the country and overseas in accordance with the following:

1979:	43 instructors
1980:	113 instructors
Total	156

#### EMPLOYMENT AND MEDIUM AND LONG-TERM TRAINING

In view of the complexity of Angolan industry, an estimate of manpower training requirements for future development projects is to be carried out by the Ministry for Industry.

#### F. PEOPLE'S REPUBLIC OF MOZAMBIQUE

With an estimated population of 12,000,000 inhabitants, of which 53% represent the economically active population, Mozambique has the most developed industry of the Portuguese-speaking African countries. The workforce in the industrial plants represents 18% of the total, and contributes 16% of the gross domestic product. Of this percentage, 9% is contributed by manufacturing industry.

thus showing the favourable relative position of Mozambiquan industry. With very diversified industries, the manufacturing sector employs approximately 600,000 personnel, of which (for national Government structural reasons), only a fifth is linked to the Ministry for Industry and Energy (129,000). The number of production plants in the sector is 681.

As for the other countries in the region, the main factor restricting industrial development is the lack of intermediate and senior personnel, caused by the vacuum after the country gained its independence (more than 300,000 personnel). The general framework of industrial manpower is as follows:

Illiterate:	24%
2nd to 8th year:	75.36%
Basic level (9th year):	0.5%
Intermediate level:	0.08%
Senior level:	0.06%

More than 20% of industrial activities are concentrated in the Maputo Province. The country's priorities are situated in the following sub-sectors:

1. Basic industry for production, i.e. iron, steel, aluminium and heavy mechanical engineering industries.
2. Energy, petroleum, mines and geology
3. Consumer goods industry for the population
4. Products intended for export
5. Other products.

However, where the operation of existing industrial plant is concerned, the greatest problems are the lack of spare parts, the non-existence of an effective equipment repair and maintenance programme, and difficulties in obtaining qualified manpower and personnel.

#### POTENTIAL AND FACTORS FOR INDUSTRIAL DEVELOPMENT

With the approval of the prospective plan for the 80's the Government of Mozambique intends to give substantial impetus to industrial development.

The main objectives of the 10-year plan are as follows:

- To improve the social-economic level of the people
- To create a heavy industry (i.e. iron, steel and aluminium)



- To increase mineral surveys and mining
- To stimulate the export industry, i.e. fishing, cashew, cement, coal and tantalite.
- To develop industry and population consumer items.

In view of the 30% increase in population during the decade, it is recommended that the industrial sector for consumer goods should increase at a slightly higher rate. For this purpose, the following multiplicative factors are necessary:

- shoe production: 4
- clothing production: 10
- textile production: 4
- oil and soap production: 4

The workforce must be multiplied by 1.9 in order to complete the development projects up to 1990 (more than 210,000 workers are included in the sector).

Considerable efforts will be required in training in order to achieve this aim, especially if account is taken of the preparation of intermediate and senior staff required.

The cooperation which UNIDO is giving the Mozambican Government already permits an analysis of the following sectors with a view to future projects:

- Metallurgy and steel making
- Textiles
- Clothing
- Salt
- Pulp and paper making
- Pharmaceutical products
- Woodworking industry
- Agricultural and food industries
- Construction materials
- Leather and shoes
- Chemicals and fertilizers
- Industrial training and education

Various projects have already been carried out, are being carried out or are being analysed.

Projects carried out

- Consultancy for textile and clothing industry
- Consultancy for the shoe industry
- Programme of industrial development for agriculture, wood and furniture, construction materials, coal and hydrocarbons.
- Technical assistance to the Industrial Foundry and Rolling Mill Company (CIFEL)

Projects being carried out

- Production of salt for rehydration
- Survey for construction materials
- Assistance in ceramic and lime production (small companies)
- Technical assistance in implementing an aluminium industry
- Technical missions for consultancy in the iron and steel sub-sector
- Continuation of assistance to CIFEL.

Proposed projects

- Establishment of pilot scheme for the production of pharmaceutical products
- Technical and economic survey for the metal product sector
- Development of agricultural industries
- Development of TEXLOM plant (TEXTILES)
- Development of Sabrina plant (clothing)
- Assistance to the salt industry
- Assistance to the paper industry
- Development of technological surveys in the metallurgical sub-sector
- Development and use of wood in civil engineering
- Industrialization of titanium iron ores
- The establishment of a pharmaceutical plant (HECOGENIN).

A large project must be mentioned which is due to begin in 1982. It involves the development of human resources for the industrial sector and is valued at US \$2,340,000.

This project will last three years and will have the following objectives:

- To assist and reinforce the national administration for human resources of the Ministry for Industry and Energy in establishing manpower requirements in accordance with the priority sub-sectors

- To formulate and organize implementation of an adequate scheme for personnel training
- To prepare and develop methods for training supervisors and instructors
- To formulate and develop specific training and educational programmes for the large number of illiterate workers.
- To assist the National Administration for Human Resources in integrating and coordinating activities involved in bilateral cooperation with international organizations, professional training agencies and other sources.

In addition to these specific projects, all other projects have professional training components whose value in some cases reaches 40% of the total value of the projects.

In view of the magnitude of the projects, it is impossible at this stage to quantify the medium and long-term requirements regarding personnel training and improvement.

#### EDUCATION AND INDUSTRIAL TRAINING

The Mozambican education system still maintains the structure inherited from the colonial era. The scholastic training is carried out as follows:

Primary education:	4 years
Secondary education:	5 years
Pre-university or intermediate instruction:	2 years
Higher education:	5 years

The educational system includes various professional technical colleges and intermediate institutes for the general electrical, chemical, cattle breeding and electronic areas, and courses last three years. For training qualified workers, there are arts and crafts schools designed for candidates with a fourth year primary education. The courses last two years.

The educational system includes 21,700 teachers.

In spite of the value of Mozambican industry, industrial training and education is still in the organizational stage. In addition to the preparation of industrial manpower by technical colleges and intermediate institutes, considerable emphasis is given to professional training centres linked to companies.

The following professional training centres are in operation:

Mozambique Electrical Supply Company  
Sogere-Drinks Administrative Centre  
Cattle Breeding Companies  
Mining industries  
Petroleum Company (refinery)  
Geological Company  
Naval repairs (city of Beira).

Future operation is anticipated in new centres in the following sub-sectors:

Textiles  
Furniture and wood  
Shipbuilding industry (city of Maputo)  
Cement  
Mechanical construction

The Electricity Centre of Mozambique should stand out as a centre of excellence. It is well organised, and when installed in a new building will certainly be the best option for inter-regional cooperation in the electrical sub-sector.

When the drinks administrative centre expansion project is completed, it will be considered as a centre of excellency for the region. It must be pointed out that the preparation of instructors, supervisors and others connected with industrial training is under investigation.

It is anticipated that the 1982 UNIDO project for the development of human resources will start with the preparation of instructors for large-scale industrial development.

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## II. COUNTRY PAPERS

### A. The industrial training process in the People's Republic of Angola

#### 1. Brief history of the industrial sector

When independence was achieved on 11 November 1975, the situation in the industrial sector of the People's Republic of Angola was as follows:

- A general breakdown in production, productivity and work organization
- A crisis of authority in companies and consequent lack of discipline
- The abandonment of many of these companies by the owners
- The wide-scale departure of qualified manpower from our country
- The majority of companies had a financial deficit and many were closed down.
- Difficulties in obtaining raw materials, accessories and equipment.

In view of this situation, many workers had to take over management and key technical positions without the necessary qualifications. However, the majority of factories were kept working.

Because a large part of the population in the country was illiterate and the technical level of the workers was low, a fight was started against ignorance and obscurantism.

For this reason, campaigns against illiteracy are emerging throughout the country, especially in companies, and the first campaign against illiteracy was solemnly launched by His Excellency President António Agostinho Neto on 22 September 1976 at the Textang Plant. Many workers learnt to read and write, then continued to further levels of cultural and professional training.

At this juncture, the situation required immediate decision making at Party level with a view to giving priority to training all workers as a means of raising their technical-cultural level and thus making them receptive to knowledge and the various achievements of humanity in the field of science, technology and culture.

## 2. Industrial manpower

The People's Republic of Angola has an estimated population of 8,000,000 inhabitants, of which approximately 53% are economically active.

The industrial sector has 16% of the workforce, i.e. approximately 21% of the gross internal product.

At company structure level, the number of qualified workers and intermediate management available was insufficient. The same applied to intermediate and senior staff.

It has been possible to train qualified workers by means of post-graduate courses with a view to complementing the experience of many years with theoretical knowledge.

Where intermediate management and intermediate and senior staff were concerned, it was obvious that a solution could only be obtained in the medium and long term.

The policy of sending students abroad was based in principle on satisfying the medium term requirements for intermediate and senior engineers throughout Angolan industry.

Along with the medium term training operations overseas, other short term training has been carried out in various countries with the immediate objective of safeguarding practical knowledge already acquired by industrial manpower.

In this respect, excellent efforts have already been made to improve and ensure training adapted to the technological reality of our industry.

## 3. Need for training industrial manpower

At a meeting held at the beginning of 1977 covering professional training, the following requirements were identified:

- The need to define methods to be used
- The need to define an educational programme
- The need to acquire adequate educational material and equipment.

Obviously, several other aspects were considered such as:

- The non-existence of staff to fill the positions created
- Disparities in the type of companies insofar as size and type of production are concerned.
- The non-existence of coordination at central level which often resulted in various companies providing the same course simultaneously, thus causing a wide dispersion of effort and consequent uneconomic use of human resources and dispersion of equipment.

In order to overcome these basic problems, efforts must be made to:

1. Select candidates for training by means of psycho-technical tests.
2. Provide educational training for advisors.
3. Include training periods in the working week, bearing in mind that wherever possible this must not affect production. If necessary, it is recommended that a shift be created for training purposes.
4. Make workers receptive to training and political follow-up.
5. Use aids in training and in the preparation of manuals and work sheets for each function.
6. Train women and young people within companies and production plants.
7. Provide professional training which must be included as a fundamental point in any technical assistance contract signed by MIND production sectors.
8. Provide professional technical training more suited to the requirements of the productive sector, and the Ministry of Education must make efforts in this respect.
9. Establish the following training schools within the Ministry for Industry:
  1. National School for Beer Production, located in the Province of Huambo
  2. National School for Bread Making, located in the Province of Luanda
  3. Provincial School for Sugar Production, located in the Province of Luanda
  4. Textile School located in the Province of Luanda
  5. National School for Graphic Arts, located in the Province of Luanda
  6. Professional School for the Pulp and Paper Industry, located at Alto-Catumbela in the Province of Benguela
  7. Professional Electronics School, located in the Province of Luanda



8. Centre for Professional Training in Geology and the Mining Industry located at Waku-Kungo in the Province of Luanza Sul
9. Diamang Centre for Professional Training located at Luxilo-Luxinene in the Province of Lunda-Norte
10. Lathe Operators' Centre located in the Province of Luanda
11. Fadario Muteka School located in the Province of Huambo.

4. Efforts involved in training industrial manpower

As a result of the problems noted at the 1977 meeting and specified in Section 3, operations were initiated in order to solve these problems.

A coordinating structure was created in 1978 to cover these activities. This was the National Department for Staff Training which began operations during that year. It began to show results in the year 1979 which was named by the Party as the "Staff Training Year" with a view to creating technical-material conditions for the future development of industrial training.

At the beginning of 1979, the Ministry held a "Council for Extended Control of Professional Training" in the town of Huambo which concluded with the following:

- The non-existence at national level of professional training schools, constituted one of the greatest difficulties in developing professional training during the year 1978.

It is thus recommended that:

- The National Department for Staff Training should coordinate training
- That documents should be prepared as quickly as possible to assist training, using international specialized organizations if necessary
- Every effort should be made to provide schools considered as priorities.

During 1980, a national meeting was held in the city of Luanda covering professional training for industry at which it was decided to create a Professional Training Technical Commission in companies, and plans of action were established for its implementation, constitution and functions.

Contacts with training organizations and personalities from various countries opened new horizons on the vitality of human resources.

The first concern was the training of DNFQ workers and other MIND supporting structures.

Thus, after the Council for Extended Control over the Training of Ministry Staff, the "Staff Training Year" 1979 saw the start of urgent training for instructors and teachers, and contacts were increased with specialist organizations and companies.

However, the implementation of professional training is going through various stages. The training of instructors at all levels is ever more urgent.

In spite of multiple difficulties, professional training has been carried out in various ways, but mainly as follows:

- professional training in companies
- professional training in centres

The professional training in companies mainly involves international cooperation and technical assistance and service contracts.

On the other hand, contacts have been initiated with organizations and companies specializing in professional training with a view to interchanging experiences in the field of professional training, thus extending our professional training process considerably.

Of these contacts, the following organizations and companies must be mentioned in particular:

- UNIDO
- SENAI (BRAZIL)
- SUEDEC (SWEDEN)
- COMERINT (ITALY)
- ANCIFAP (ITALY)
- NORMA (PORTUGAL)
- IMPED (ALGERIA)
- AFPA (FRANCE)
- ITF (NIGERIA)

During this period, various professional training pilot centres were started in order to meet problems in qualifying workers required in the various sectors.

By way of example, Diamang and Textil were created to meet qualified and specialized manpower requirements in the respective sectors.

The experience gained through our operations and contacts with other countries shows that we should not create centres without previously investigating their viability. In this context, before any centre is introduced, careful investigations must be carried out with respect to future operations.

Thus, various centres were designed to meet the requirements of the industrial sector, and many of these were investigated and are being introduced.

NAMES: (See Industrial Training Process in the People's Republic of Angola, pages 29 and 31, October 1981).

Again, overseas apprenticeships and well defined training operations are included in professional training operations covered by technical assistance and equipment purchasing agreements.

These operations have increased year by year and we consider that with the creation of adequate means in the country, and in the industrial sector in particular, overseas apprenticeships could be reduced, thus permitting a saving in foreign currency for the Popular Republic of Angola.

On the other hand, the young people sent to various countries with a view to attending intermediate and senior courses could gradually replace part of the foreign labour when they return and are integrated in the country's technological process. This occurred after independence when intermediate and senior engineers returned and were integrated in the Angolan production force.

Up to the present time, efforts made in industrial sector training may be considered as positive, although we are aware that there is a long road ahead.

(See the Professional Training Process, pages 12, 21 and 31 to 40).

It may also be stated that our operations in the training field will only be satisfactory when they can meet the requirements of the productive sector, reduce foreign manpower and ensure that each company reaches a level of efficiency which permits it to train its own workers without need to use other organizations.

##### 5. International technical co-operation

As specified previously, due to lack of tradition in the field of human resources and in professional training in particular, the Ministry for Industry has established exchanges with various similar international

organizations and companies with a view to developing a training system at Angolan industrial level. These investigations have permitted us to exchange experiences and this has caused us to reflect more seriously on professional training.

Thus, various investigatory visits were made to various countries with the purpose of investigating the collection of data and experiences on professional training systems in the industrial sector. These contacts permitted to check the significant development of professional training in the country's industry.

The following organizations and companies have contributed in particular to the development of the professional training system:

1. UNIDO (United Nations Industrial Development Organization)

In 1978, UNIDO Engineers investigated the training requirements and type of assistance required for developing training. This work resulted in the arrival of a Consultant, the preparation of a Technical Assistance Project at the basic Administrative Centre, the supply of audio-visual and other equipment, and the implementation of the Third Educational Methods course at Benguela in 1981.

In addition to this project, we participated in various courses organized by that organization.

2. BRAZIL - SENAI - Introduction of centres  
- Training of Instructors  
- Educational organizations  
- Educational equipment  
- Exchange of experiences

3. SWEDEN - SIDA: Financial contribution to activities in the professional training field.

Swedec: Exchange of experiences.

4. ITALY - COMERINT: Training of Instructors:  
- Physical restructuring of Centres  
- Exchange of experiences

5. PORTUGAL - NORMA: Seminars, improvement and information courses for the development of intermediate and senior management and personnel at basic level.

In addition to the abovementioned organizations, a considerable exchange of experiences has taken place with the People's Republic of Mozambique, the Democratic Republic of Germany, Algeria and other countries.

6. Financial contributions

The financial resources used to develop training and maintenance operations at our Centres come in large part from the General State Budget and are complemented by contributions from certain national companies and international financing.

Among these, the following are outstanding:

- The contribution of national companies to specific training
- The participation of other countries through bilateral agreements
- The collaboration of the P.R.A. Secretary of State for Cooperation in obtaining financing.

The immense training operations programmed by the Ministry for Industry have encountered certain financial difficulties and to a certain extent these govern their development.

Certain projects would be viable if available international financing were used.

Consequently, international organizations such as UNIDO, UNDP and ILO must in the next few years give greater attention to industrial projects which include a large percentage of professional training.

7. Recommendations and suggestions

Based on the experience acquired over the People's Republic of Angola's six years of existence, and taking into consideration the need to overcome certain gaps which govern to a certain extent the overall development of professional training, it is suggested that the following recommendations be considered during this Seminar:

- 1 - The preparation of common terminology in the industrial professional training field.
- 2 - The preparation of a basic job manual which takes account of the existing level of development in our countries.
- 3 - The creation of an African inter-regional organization whose objective is to create links of common interest in the industrial training field connected with the improvement of engineers involved in this activity and with the preparation of educational support material.
- 4 - The creation of an investment fund by the Portuguese speaking African countries for professional training in future inter-regional centres.
- 5 - A considerable increase in industrial training investments by the United Nations during the period 81-85.
- 6 - A greater volume of industrial investment linked to professional training.

B. The industrial training process in the Republic of Cape Verde

Introduction

The Republic of Cape Verde is an archipelago made up of 10 islands located in the Atlantic Ocean. The country became independent on 5 July 1975, and has a resident population of approximately 300,000 inhabitants.

The surface area of the islands is 4,033 km<sup>2</sup>, and the 200 mile territorial limit provides a fishing area of approximately 600,000 km<sup>2</sup>.

The archipelago forms part of the Sahara zone. The rainfall is mainly in August - September and is very irregular on and around the islands. This causes periods of dry weather which can extend for many years.

Approximately two thirds of the "active population" is engaged in agriculture, cattle breeding, and small-scale fishing, although these areas of activity do not contribute more than 20% to the gross fixed capital.

According to the most recent estimates, the gross domestic product per inhabitant would be approximately U.S.\$ 170, although the National output per inhabitant is considerably higher if funds sent by emigrants and international aid is added to the domestic product, since these items are of the order of magnitude of the gross domestic product.

In view of the great scarcity of natural resources, national reconstruction involves taking advantage of the strategic geographical location and is based on human resources.

Development expenditure increased considerably after independence, and the investment budget has progressively increased. Based on a value of 100 for 1977, the figures for 1978, 1979, and 1980 are 198, 284 and 375 respectively.

The national economy is controlled by means of a system of economic and social planning, and the development strategy defined for the next few decades must provide National Reconstruction based on three main objectives, i.e:

- i) The creation of a qualified work force
- ii) A strict and wide-scale policy of investment
- iii) The transformation of social structures evolving from colonialism.

#### The role of Industry and Industrial Labour

Since production efforts must be orientated towards a considerable increase in agricultural production, the natural conditions require other sectors to play an important part in the development process. In addition, industry must have the central function of ensuring the internal and external viability of the Cape Verdean economy.

The future objectives of the industrial policy (1st NDP, 1982-85) are as follows:

- i) To meet the basic requirements of the population in the agricultural - foodstuff, clothing and footwear sectors.
- ii) The creation of a basic national technology, and development of the mechanical engineering sector.
- iii) The utilization of natural resources in the construction material sector.
- iv) The expansion of exports and services, naval and associated industries, and services to shipping.

The main problem is the small number of qualified personnel and workers, and this must be given a high priority.

Where permanent employees are concerned, industry employes less than 7% of the total personnel against nearly 50% for agriculture, cattle breeding and small-scale fishing, 15% for administration and 10% for commerce, banking and insurance.

An investigation carried out in 1979 into urban employment at various levels of qualification showed that there were 4% of senior personnel and engineers,



3% of intermediate technical personnel and 6% of highly qualified personnel as against 13% of qualified personnel, 34% of "specialized" personnel and 40% of miscellaneous personnel.

At the present time, industrial manpower (including industrial fishing) includes approximately 2,200 workers, distributed as follows:

- agriculture - foodstuffs	...	1,100
- industrial fishing	...	(500)
- construction materials	...	100
- mechanical engineering	...	350
- textiles and leather	...	250
- wood	...	150
- miscellaneous, i.e salt mining	...	250
		<hr/>
		2,200

It is necessary to increase these numbers by figures obtained from an existing investigation covering owner-operators whose role must be integrated in the development process and who will have great potential as semi-industrial activities.

#### Achievements, Programmes and Projects

Among industrial workers, the agricultural and food industries predominate, these including activities linked to industrial fishing, the production of sugar cane by-products and seed processing. Employment in the mechanical engineering industry mainly involves the repair and maintenance of vehicles and a small naval shipyard. In addition, reference must be made to clothing and shoe factories (one of each).

Among projects under investigation, the outstanding items are a naval repair shipyard and a cement works. Work will begin on the former shortly.

Although the insular nature (which increases the cost of imported products and affects transport and export costs), the lack of water and high energy costs affect industrial development, the most relevant condition is the small number

of qualified personnel and workers. The more the initial qualification structure is distorted, the more serious this limitation becomes. It is almost like a vacuum at intermediate staff and highly qualified personnel levels and one of the criteria for industrial development in the Country should be the mechanical engineering industry where the average qualification is higher than in other sectors.

#### Need for Training

Since the lack of highly specialized workers is the most adverse factor for industrial development, it implies the following:

- 1) recruiting qualified foreign technicians and workers in order to guarantee plant operation during the first few years
- 2) local training
- 3) a programme for training qualified engineers and workers overseas.

Likewise, the establishment of a training system for employees in particular constitutes one of the priorities of the government of Cape Verde during the 1st NDP.

For industrial development during the 1st industrial plan, the estimated requirements are 50 senior personnel, 100 intermediate personnel, 450 highly qualified and qualified workers and 800 specialized workers, with 47 "industrial" scholarships overseas (31 for higher and 16 for intermediate training). It is relatively easy to estimate the deficiencies and respective training requirements, with particular emphasis on the training of intermediate personnel (more than 90) and highly qualified and qualified personnel (approximately 500). It can be said that the start of industrial development is governed by the ability to meet these requirements, and the implementation of projects is governed by the ability to complete them.

#### Professional training programmes and projects

Where Industrial Professional Training is concerned, the following may be considered as significant programmes or projects:

- The Mindelo Coastal Shipping School
- The restructuring of the Mindelo Technical, Commercial and Industrial School
- The training programme linked to the Cabnavé Naval Shipyard project.

The reorganization or re-establishment of the Coastal Shipping School must revert to the creation of a maritime instruction centre. To have an initial capacity of 100 students, the centre must provide the following qualification:

Courses in navigation, seamanship and machinery (merchant marine and fishing)

It may also implement short-duration courses, or repeat and improvement courses, for deck hands and engine room personnel. It will be a centre with a capacity and vocation for foreigners, and may thus follow the geographical-economic trend of the Country insofar as industrial professional training is concerned.

The Technical College is being restructured by means of multilateral cooperation. The project programmes are being materially and officially reformulated since training is inadequate to meet the requirements and the practical guidance is linked to the active duration of the courses. Programmes and equipment must be geared mainly to the acquisition of qualifications in order to carry out a profession. A "new school" will have an important role to play in the professional training system, and a "training centre" an even more important role.

The training programme linked to the Cabnavé project has a certain level of autonomy, but in view of the size of the project it will have an influence on the composition and level of qualification of the Country's industrial manpower since according to a survey estimate, 500 employees and qualified workers should be trained by 1984 with an estimated recruiting and training cost of a million dollars.

It must be pointed out that the Cape Verde Institute for Solidarity is starting Carpentry training programmes at its Sao Jorge de Serginho premises

and later on will provide training covering electrical installation and repairs. This start will be linked directly to the operations of the Professional Training Institute which is being created and which should be the coordinating and planning organization for extra-scholastic professional training linked to the planning of human resources.

#### Training in the country and overseas

Notwithstanding the priority established for local professional training, the industrial professional training of staff and highly qualified personnel has to be carried out overseas, at least during the initial stage.

The Cabnave training programme may contribute to a significant advance in local training, not only because it is to be implemented in the country, but because there is a possibility of a direct link with the Mindelo School or a capacity for training some instructors.

Under the professional training policy, priority must be given to the training instructors and ensuring that each worker trained overseas is (to a certain extent) at least a potential instructor.

Inter-regional technical cooperation may have great advantages where industrial professional training is concerned, since it avoids oversizing (and the corresponding uneconomic under-utilization) isolated or national initiatives, or even specialized national training centres.

There will be areas in which overseas training will have completely different and new perspectives if considered within the framework of any inter-regional cooperation.

#### Financial resources allocated to professional training

Having defined professional training as being included among the priorities in the Republic of Cape Verde, a significant part of the financial resources

channelled for multilateral cooperation has been allocated to professional training. Thus, it may be stated that projects such as the Mindelo School, Variante offices and Professional Training Institute are the results of multi-lateral cooperation orientated towards professional training. In other areas, various projects (including certain fishing schemes) include training programmes.

In the case of Cabnave, a special budget is allocated to recruiting and training. Since the project involves a technological transfer covered by a contract with an overseas company, the programme is included and can be quantified. A textile factory and shoe manufacturing plant are similar cases, having special links with overseas training companies and centres. However, the scale is considerably different, and it is not possible at the present time to identify and cost these as autonomous programmes.

An item covering financing for the Professional Training Institute (under construction) is included in the 1982 budget.

Estimates to be made in order to determine the financial resources which are allocated or which could be allocated to professional training would provide inaccurate results, given the volume of indirect, unallocated and unidentifiable sources which nevertheless have effective control or influence on professional training.

#### Recommendations and suggestions

Since the possibilities for inter-regional cooperation are extremely vast, and the language barrier has been overcome, the minimum suggestion which can be made is that this Seminar should be the beginning of a process of exchanging experiences. After this point of reference provided by the UNIDO Seminar (and the UNIDO initiative must be applauded and recognised), it would be very useful if an assurance were received that the countries concerned will at least exchange information in the field of professional training so that they can be aware of what is being done in this field in each country in order to

avoid duplication of efforts in this respect.

In addition to this mutual exchange of information, and again as a minimum suggestion and general consideration, national organizations responsible for coordinating professional training should make a list after this Seminar showing all educational facilities available with a view to exchanging this training material at the same time as they create or extend document centres in support of direct training operations coordinated at national level.

C. The industrial training process in the Republic of Guinea-Bissau

1. Introduction

The Republic of Guinea-Bissau is completely non-industrialized. The economy is based on agriculture which engages more than 90% of the active population.

Consequently, during this stage of the country's development, the key role of industry is to mobilize the main basis for development in the country, so that it becomes a modern wide-based drive mechanism.

This function is defined by the expression "Agriculture as the basis of development, and industry as the agriculture driving factor".

This is very essential so that the industrial sector does not become (as in many underdeveloped countries) a modern "cyst" which, because it is not soundly linked to the country's productive base, survives only with semi-finished products obtained from foreign raw materials, sub-assemblies, energy, spare parts and technical assistance, thus reinforcing the umbilical cord which links us to developed countries instead of promoting economic independence.

Industry has an important role to play in the economy. Industry must meet the vital requirements of the rural population in order to produce and market essential items which the peasants (because of the need to satisfy their primary requirements) will be encouraged to produce in greater quantity and higher quality with a view to selling the surplus and using the income from the sale to purchase the abovementioned articles.

In order to invigorate and increase agricultural productivity, industry must be dedicated to the manufacture of implements and fertilizers.

Although the agricultural-industrial link constitutes the basic condition for industrial development, it must also be emphasised that the industrialization

process depends vitally on external economies created by economic infrastructures. Thus, while in developed countries an emerging industry uses existing vehicles, roads and commercial, banking, insurance and distribution systems, in Guinea-Bissau, the installation of manufacturing plants is proceeding without external economies and each plant involves a series of problems which are normally external.

Thus, one process is both difficult and particularly vulnerable, since to construct a plant without external operations and systems to make its existence and operation possible and viable, is like creating plants which do not integrate in the country's economic fabric. And obviously, the considerable efforts expended in industrialization do not involve purchasing plants which these days are installed "key in hand" by foreign companies, but merely constitute the operational "infrastructures".

The question of technological options must be carefully related. In fact, in a country where administrative capacity and specialized personnel are particularly scarce since the large majority of the population has only a minimum knowledge of the use of modern technology, adequate technological selection and the establishment of a method for introducing it into the country represents a key problem.

In general, the companies are distributed as follows:

1 - MECHANICAL ENGINEERING

- . EGA
- . NAVAL SHIPYARDS

2 - CONSTRUCTION

- . CUP
- . SANDINO



- 3 - CONSTRUCTION AND FURNISHING MATERIALS
  - BANDIM CERAMICS
  - PLUBA CERAMICS
  - SOCOTRAM
  
- 4 - FOOD AND DRINK INDUSTRIES
  - CICER
  - REFRIGERATION PLANT
  - RAW MILK PLANT
  - TITINA SILA
  
- 5 - COMMERCE
  - GENERAL STORES
  - SOCOMIN
  
- 6 - FUEL DISTRIBUTION
  - DICOL
  - GUINE-GAS
  
- 7 - DISTRIBUTION OF PHARMACEUTICAL PRODUCTS
  - FARMEDI CENTRE
  
- 8 - FISHING
  - ESTRELA do MAR
  - GUIALP
  - SEMAPESCA
  
- 9 - PRINTING
  - NATIONAL PRESS
  
- 10 - HOTELS
  - HOTEL 24 de SEPTEMBRO
  - GRANDE HOTEL
  - SOLMAR GUIOTEL CAFE-BEER GARDEN
  - HOTEL PORTUGAL

11 - TRANSPORTATION

- . LIA
- . SILO DIATA
- . GUINE-MAR

12 - CHEMICAL INDUSTRIES

- . NA ISNA FOAM PLANT
- . OXY-ACETYLENE PLANT
- . PLASTICS PLANT

13 - TEXTILE INDUSTRY

- . COTTON SEED REMOVAL PLANT

14 - AGRICULTURE AND CATTLE BREEDING

- . SUINAVE

2. Requirement for training manpower, in particular staff and highly-qualified personnel

A company must provide its employees with professional training in order to develop and consolidate.

Nearly all companies have a lack of qualified manpower.

The greatest problem arises in the administrative area.

The majority of the administrators have no management training.

It is obvious that a company which does not have well organized accounting systems cannot have sound administration.

It is precisely in this domain that the majority of the companies have problems.

A large number of the companies have no organized accounting system.

Thus, it is necessary to list company training requirements and to organize courses in the country or overseas in conjunction with the Technical Institute for Professional Training.

In the country, there are no facilities for training senior and highly qualified personnel.

Thus, all of the young personnel are sent overseas (in friendly countries in order to receive training and qualifications).

In the training field, various measures were recommended to the Government although some of these were considered as short-term measures, i.e. the training of intermediate personnel in the country.

However, taking the company sector as a whole, it is necessary to relate the problem to the rate at which new plants are created.

It is obvious that the creation of new measures in certain sectors of the national economy may provide beneficial effects such as the creation of new working posts, the training of manpower, etc. It is also true that an excessive expansion may provide the reverse effect. This is true in particular in Guinea-Bissau which has obvious limits in respect of both personnel and foreign exchange.

It must be stated that the considerable efforts to nationalise require an organizational, planning and administrative capacity which companies in general do not possess.

Thus, in view of the abovementioned considerations, it is recommended that operations in this fundamental sector should be reorientated to the following:

- 1 - A reduction in the rate at which new undertakings are created.
- 2 - A concentration on operations designed to raise the existing level of productivity.

3. Existing training programmes

3.1 As specified above, the only existing training centre in Guinea-Bissau is the Technical Institute for Professional Training (ITFP).

In general, the ITFP programme provides:

- Apprenticeships for adolescents which terminate in the sixth year. The courses last 3 years and the pupils receive professional training and additional general training.
- Training courses for adults who have no previous training or who require conversion for another working post.
- Improvement courses for workers already employed who require to improve their knowledge.
- Educational training and technical improvement courses for Institute instructors.

3.2 Programmes already implemented

a) Personnel improvement (1980-81).

b) Instructor training:

- . An educational training course for instructors lasting 255 hours and including 10 participants.
- . A technical improvement course for instructors lasting 100 hours and including 10 participants.

3.3 Programmes to be implemented

a) Apprenticeships (1990-81)

SPECIALITY	NO. OF PARTICIPANTS	NO. OF HOURS
General Mechanical engineering	85	4,800
Civil Engineering	116	16,000
TOTAL	201	10,800

- b) In the improvement field, a secretarial improvement course lasting 500 hours and including 25 participants.

#### 3.4 Programmes for 1981-82

- Apprenticeships in electricity, vehicle mechanics and carpentry.
- Training courses for commercial and secretarial purposes
- Educational training and technical improvement courses for instructors
- Improvement courses in construction, general mechanical engineering, vehicle mechanics, electricity and commercial and secretarial subjects.

#### 3.5 Other Programmes

- Structuring of training system for agriculture, cattle breeding and forestry
- Training of intermediate personnel in the priority sectors, in accordance with the country's development requirements.

#### 4. Short, medium and long-term training projects

The short term objectives which the ITFP wishes to achieve during the first stage up to 1985 are as follows:

- After training: to obtain nationals capable of taking over operations carried out by foreign personnel after the latter have gone.
- After educational training and technical improvement: to obtain the training personnel required for training operations in the various fields.
- To set the structures in their correct places, thus permitting personnel to be improved in the following fields:
  - . General mechanical engineering
  - . Vehicle mechanics
  - . Electricity
  - . Construction

- . Carpentry
- . Commerce and secretarial services
- . Rural occupations (i.e. agriculture, cattle breeding and forestry).

5. Training personnel in the country and overseas

5.1 Technical institute for professional training (ITFP)

5.1.1 To provide urgent training for workers and technical personnel required to develop the country, a decision was made to create the ITFP. The Institute is located at Bra, 6km from Bissau, and has a number of buildings which permit it to carry out its activities.

It operates as an autonomous organization, but comes technically and administratively under the Ministry for National Education.

5.1.2 Existing situation of ITFP

The ITFP is made up of departments which are ready to operate in accordance with the way the Institute evolves.

The Technical and Administrative Departments are already in a reasonably operational state and able to cope with the training operations already in progress.

The operational Department will be responsible for future planning and control in the training centres and is in the final stages of construction.

The Planning Department will be responsible for investigating the country's requirement in human resources to permit training to be programmed, but is a little behind because it is waiting for the arrival of a ILO expert in human resources.

The people responsible for these departments and the Institute Director form the Institute administrative counsel.

### 5.1.3 Problems

The evolution of ITFP work involves certain factors which prevent faster development. The main factors are as follows:

- Difficulties in encountering national personnel who can carry out the functions of foreign personnel at management level.
- Difficulties in recruiting national technical personnel at instructor level.
- Difficulties in obtaining raw materials for training on the internal market.
- The lack of certain equipment.
- The problem of transport for pupils and personnel

### 6. International co-operation

The ITFP receives technical assistance from the ILO within the framework of an agreement signed between our Government and that organization.

It also receives assistance by way of technical aid and material from the German Democratic Republic.

Within a framework of bilateral cooperation, the ITFP also receives Cuban and Portuguese teachers.

### 7. Financial resources for industrial training

The ITFP is financed to the value of approximately 7 million PG from a Ministry for National Education budget and other external financing sources.

- UNDP financing to a value of US \$ 600,000 (1976-81) for technical assistance and equipment purchases.
- Financing of approximately US \$ 2,200,000 obtained by the Government from the African Development Bank ( ADE) in respect of technical assistance and equipment purchases for training in general mechanical engineering, vehicle mechanics and electricity.

- INTER PARES financing (Canadian Government Organization) for an accountant improvement course.

The ITFP also receives financing from the Dutch Government for a metalworkers improvement course.

8. Recommendations and suggestions

1 - To prepare conditions for installing an electrical generator and other machinery specified. It is requested that the necessary information be requested and steps taken to ensure that preliminary work is carried out.

2 - To ensure a supply of water to the Institute, establish the ownership of the existing water pump and repair it.

At the same time, it is necessary to plan and install distribution systems.

3 - To investigate a salary level which guarantees that existing personnel continue their employment and which permits the engagement of professionals and engineers required for the operations concerned.

Some 7 vacant positions are required.

4 - To recruit new instructors for the following:

- An extension of activities
- Scholarships
- Access to higher positions
- Operations, in particular the contracting of commercial and secretarial personnel.

For the period 1982-86, it will be necessary to contract new instructors for the following:



- General Mechanical Engineering
- Vehicle mechanics
- Electricity
- Civil Engineering
- "Feio" Engineering
- Pipework
- Carpentry

D. The industrial training process in the People's Republic of Mozambique

1. Introduction

The Delegation of the People's Republic of Mozambique at this International Seminar greets all present and considers the meeting important since it again permits an analysis of the problems of training industrial manpower in the countries represented.

We salute the efforts made by UNIDO to support this meeting.

The People's Republic of Mozambique considers the training of manpower a priority task to ensure economic independence, particularly during the existing phase in which the Frelimo Party and State Administration have defined the 80-90 decade as the Decade of Victory against underdevelopment.

The country suffered all the consequences of the capitalist colonialist system which obviously caused the non-existence of qualified manpower required to develop the economy of a country which has been independent since 25 June 1975.

If this factor is linked to the urgent need to implement new projects, the situation is represented in an even more striking manner.

The deliberate Colonial action of ensuring that specialized labour was basically of overseas origin and the mass exodus of this manpower immediately after independence left the country with no compensation for filling this vacuum.

Thus, even with the existing capacity, there are difficulties in achieving profitable production in various economic sectors due to inadequacies in training.

General guidelines and certain operations based on this scenario already permit us to visualize short, medium and long-term solutions.

In view of the feasibility of the project proposed by UNIDO, initiatives at the various levels in the field of industrial manpower training, within the framework of cooperation between the African countries represented here, may be considerably improved by the common use of investments and facilities for training at the various levels, in particular in areas and specializations which may be common.

## 2. Details of existing industrial manpower in the country

The last population census of the People's Republic of Mozambique shows that it has 12,000,000 inhabitants.

The manpower existing in the various branches of industry is estimated at approximately 600,000 workers, of which 123,000 are in the industrial mining and processing sectors (i.e. energy, mines, chemicals, foodstuffs, mechanical engineering, metallurgy and light engineering).

The number of workers in these sectors represents 0.93% of the population.

With the projected industrial development, the anticipated increase in manpower will be approximately 13% and 87% above the existing level in 1985 and 1990 respectively.

The existing industrial manpower structure is as follows:

24%: illiterate

75%: schooling between the second and eighth year

The remainder: intermediate or higher training.

## 3. Need for training manpower

In order to meet the requirement for training manpower, the country has a national education system involving the following programme:

- Primary education: 4 years
- Secondary education: 5 years
- Pre-university training (Intermediate Institute): 2 years
- Higher education: 5 years.

At the primary and secondary levels in particular, the national education system aims at basic training from which it is possible to carry out specialized training.

On the other hand, some large development projects in the country include the training of specialized manpower to be used on these projects.

Depending on the circumstances and levels involved, the training may be carried out in this country or overseas.

In view of the existing industrial manpower structure, it is necessary to overcome illiteracy, educate adults, provide scholarships and raise the basic level, qualification and specialization of the worker using any methods which permit this objective to be achieved. It must be remembered that the training referred to must run parallel with new technologies introduced in the country as a result of industrial development and implementation of certain large industrial projects.

#### 4. Existing training programmes

All existing operations and programmes are based on the principle of courses in the country with a view to training existing workers in handling and operating existing and future production equipment. On the other hand, all training operations overseas are based on the creation of specialized manpower which may contribute actively in increasing the training capability of the country.

The importance which Mozambique attributes to training leads to the development of operations at specific centres or in the production sectors themselves.

#### 5. Short, medium and long-term training projects

The short, medium and long-term training projects country are based in essence on the following three criteria:

- Industry supporting the country's social and cooperative structure
- Heavy industry
- Machine construction industry.

Thus, training priorities must be based on development along these lines.

In order to realize this objective, it is anticipated that in the short and medium term, development operations must aim to intensify the creation of training centres in the country and the training of specialized labour overseas with a view to providing a powerful multiplying effect. This will ensure that in future, training will be carried out mainly within the country.

To train industrial manpower, Mozambique is counting at the present time on the following training centres which are being installed, organized and established:

- Training Centre for Electrical Power
- Training Centre for the Sugar Industry
- Training Centre for the Mining Industry
- Training Centre for Geology
- Training Centre for the Drinks Sector
- Training Centre for Petroleum By-Product Refining Areas
- Training Centre for Naval Repairs.

In the majority of cases, these Centres have a shortage of Advisers to guarantee an adequate quality of training and a scarcity of equipment to permit correct functioning.

It is considered that the Training Centre for Electrical Power (new extension project) and the Training Centre for the Drinks Sector could be included in the cooperation between our countries.

In the context of professional training development, the establishment of training centres is a priority in the following areas in the near and immediate future:

- Mechanical Construction
- Cement
- Textiles
- Wooden Furniture
- Refrigeration and Air Conditioning Industry
- Naval Repair Industry
- Salt mining and processing.

#### 6. Financial resources for industrial training

One of the great difficulties in implementing training projects in the country is the limited financial resources at the disposal.

It is the authors' conviction that investments for an area such as training should be provided mainly by international institutions created for this purpose.

The continuing lack of support from international organizations in implementing an urgent policy in the field of manpower training is causing the country to spend large sums at this time in contracting foreign engineers and specialists.

The training provided by international organizations is not compatible with the main problems involved in the development because it completely ignores the realities involved and provides short-term courses for highly specialized personnel and a limited number of workers. The problem is to train the greatest possible number of workers at intermediate and basic level using courses of reasonable duration in order to guarantee adequate training and overcome the inadequate preparation of the workers.

#### 7. Recommendations and suggestions

In the opinion of the authors, there is an adequate basis and sufficient reasons for including the question of training within the framework of co-operation between the countries represented here.

It is believed that the training deficiencies which are being experienced in Mozambique are also being experienced by other countries participating at this Seminar. Thus, in this common fight against underdevelopment, the professional training schemes should be properly co-ordinated.

E. The industrial training process in the Democratic Republic of Sao Tome and Principe

The industrialization of so-called underdeveloped countries is undoubtedly the main theme and purpose of their development processes in that it is a means of emerging from poverty, misery, famine, malnutrition and disease and improving the quality of life of the population.

In addition, it is a more realistic way of reducing the existing gap between the industrialized countries and underdeveloped countries and irradiating the dependence, inequalities and injustices of some compared with the others.

Although this is an irrefutable reality, it must be seen in the correct proportion and examined with due care to ensure that we do not make grave errors. We are all aware of the hazards of imitative industrialization, a highly negative process of development which some underdeveloped countries initiated in the 50's. Since these countries considered industrialization synonymous with development, they introduced a rate of industrial growth similar to that in the industrialized countries. They constructed factories producing products of the same type and based on the same technology as those countries, to the detriment of the small industrial owner operator and the rural sector.

By indulging in imitative industrialization, developing countries frequently neglected the real social cost of industrialization in the industrialized countries, and for the large majority of the population, social justice and improvements in the conditions or quality of life of the population were far from achieved. In these countries, other economic and social objectives such as the creation of jobs to meet the increase in population and the elimination of poverty were not achieved because even though there was a high rate of industrial growth, incomes were unevenly distributed and this was obviously caused by the structure and the way it evolved while transforming an agricultural and rural economy where wealth and output are relatively well distributed into an industrial and urban economy where inequality is more marked.

Thus, in those countries one can see beyond the low income levels to other indices of poverty such as lack of proteins and calories, high infantile mortality, illiteracy and unemployment which finally causes a rural exodus and concentration in urban zones where the population does not immediately have housing, facilities or even regular compensating and socially productive employment.

We are now aware of this error. We are concerned in escaping from underdevelopment. We are starting technological development along two main lines in which two main problems are involved:

- The importation, adaptation, improvement or development of technology
- The improvement of local technologies and planning of technological levels and human resources.

The second point immediately introduces the problem of industrial manpower and personnel training.

In the Democratic Republic of Sao Tome and Principe, this problem is acute. The country is essentially agricultural and traditionally dedicated to one-crop farming of primary products destined exclusively for exportation and is dependent on imports, either essential products (i.e. foodstuffs, clothing, hygiene and housing) or consumer goods and equipment.

The Vanguard party, the M.L.S.T.P. has defined three main objectives for medium-term development, i.e.:

- Self-sufficiency in some primary foodstuffs.
- Primary processing of export products
- The eradication of illiteracy and an increase in the technological level.

The main basic preoccupation of the Vanguard party, the M.L.S.P.P., and the Government has been to find a way to achieve the aspirations of the people for liberty and economic independence. Thus, enormous efforts have been made with a view to transforming an essentially agricultural economy, living on a single crop (i.e. the cacao plant) into a balanced and self-sufficient economy in which the industrial sector truly assumes its intended role as a driving force. The state of industry inherited from the colonial era is distressing.



Small owner-operator companies continue, but productivity is fairly low due to difficulties in obtaining adequate spares and maintenance equipment.

There are small industrial wood working yards, a small naval shipyard, a brewery, a plastics factory, an alcohol plant, a clothing factory, bakeries, and little more.

Conscious of this situation, the competent authorities decided that the country must be subject to medium term development orientated to the local utilization and processing of agricultural raw materials with a view to producing foodstuffs and gradually replacing certain imported products.

Implementation of this policy is difficult due to the small size of the country, the small market and lack of manpower. There is thus a constant need for regional cooperation in order to ensure economic viability of projects being implemented.

Enormous efforts have been made to obtain this cooperation, but not always with great success.

In addition to a ceramic factory which is in an advanced state of construction there are projects for constructing cacao processing plants, breweries, factories for cooking oils, brandy and school furniture, a pottery and wheat mill.

Increased fishing is relatively important to the industrial development of the country.

During the initial stage, priority will be given to supplying the population. In the future, fish will be exported if conditions permit.

The existing manpower corresponds to the level of industrialization obtaining in the country.

The majority of the industries are in the owner-operator stage and existing manpower is neither quantitatively or qualitatively significant. As an example, there are approximately 2,302 workers in the state sector and 957 in the private sector. A large proportion of this manpower is illiterate, thus preventing faster industrial development. There are qualified workers, but they represent a ridiculously small number. Therefore, in order to progress industrially, it is necessary to speed up the training of the industrial manpower.

Conscious of this situation, the Vanguard party, the M.L.S.T.P., decided to eradicate illiteracy in the country, beginning with the productive sector. At the present time the first cycle of the great campaign against illiteracy is being organized. It is the first step in training the manpower.

Staff training is also programmed at elementary, intermediate and senior level. But due to the conditions obtaining in the country, intermediate and senior personnel can only be trained overseas, and numerous agreements have been made with fellow and friendly countries.

A large number of employees at all levels in the fishing industry are being trained overseas.

