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INDUSTRIAL MISSION TO THE SOUTHERN SUDAN*.

SI/SUD/77/802.

THE DEMOCRATIC REPUBLIC OF THE SUDAN.

Terminal report .

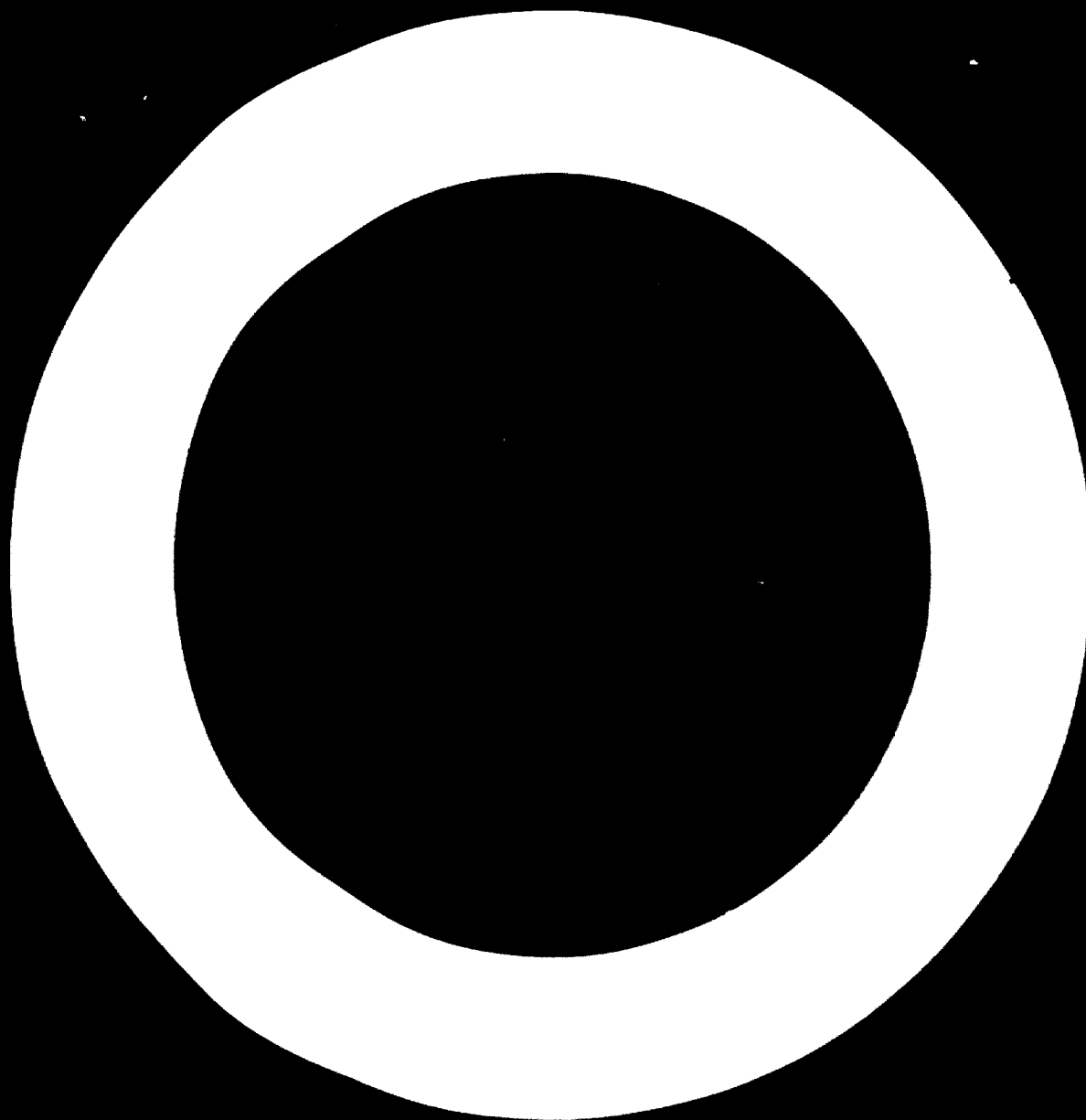
Prepared for the Government of the Democratic Republic of the Sudan
by the United Nations Industrial Development Organization,
executing agency for the United Nations Development Programme

Based on the work of an Industrial Survey Mission consisting
of Stanislaw R. Gajowski, industrial planner and team leader,
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United Nations Industrial Development Organization
Vienna

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ABSTRACT

The survey carried out under project SI/SUD/77/802, "Industrial Mission to the Southern Sudan" over a period of 3½ months covered existing industrial projects under Central and Regional Government Ministries or parastatal bodies in addition to those under implementation, in the pipeline or the private sector.

Common constraints, in descending order of significance to the industry and its potential development, are:

- obsolete and broken down machinery and equipment which, under present circumstances, have little chance of replacement or repair, respectively,
- maintenance and repair workshops lack ^{of} spare parts, testing equipment, functional basic machinery and tools and properly trained skilled labour and managerial staff resulting in 50-75% of vehicles being off the road as well as poor and unreliable river and railway transport services,
- technical and managerial know-how in the various sectors of industry and ancillary systems,
- under-staffed Government agencies with regard to technical and administrative as well as supporting personnel,
- inadequate coordination and exchange of information and pertinent data among Government agencies and public bodies especially where matters of common interest are concerned resulting in loss of time, bottlenecks etc.
- very poor telecommunication services within the Region especially under present circumstances of unreliable transport systems.

Most of the existing industrial projects plus some under implementation have not been preceded by any feasibility studies, a fact which is partly responsible for some of the existing problems or those that may arise.

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Due to the many constraints, described earlier, and which are not likely to be alleviated in the very near future, emphasis has been placed on the implementation of small scale units with respect to recommended new industrial projects utilizing mobile or stationary units, as the case may be. Such units are characterized by being labour-intensive with low capital investment and more suitable for cooperatives or the private sector. Assistance will be needed from both the Industrial Bank and the Cooperative Bank.

When capital and foreign financial components become available, first priority should be given to medium-scale industries by the Regional Government until major constraints are relieved. Under present conditions of heavy dependency on Central Government contributions for the Development Budget, large scale development projects would be risky with unreliable resources, as well as an unnecessary financial burden.

The establishment of an Industrial Development/Consulting Centre should be considered as first priority. Among its functions would be: collection of statistical and economic data about existing industrial projects and those already under implementation; evaluation of feasibility studies of proposed projects as well as conducting own studies and coordination among existing projects specially those with common or integrated interests; assisting the Regional Government in the planning of future projects as well as provide advice to private and cooperative sectors (both technical and economical); organize seminars and training programmes for the technical and managerial/administrative staff for upgrading their skills and provide upto date information in their fields of expertise; participate in the preparation of foreign technical assistance programmes from international agencies or from bilateral agreements as well as call on the assistance of experts serving in the country in the various fields of expertise wherever needed by establishing closer contacts with UNDP and the specialized agencies.

Up-grading of skilled labour in industry and maintenance workshops as well as retraining of technical, managerial and administrative staff should receive Government attention. Continuous change of the managerial staff does not lead to the stability of any enterprise.

Vocational and technical training should be expanded and strengthened, and programmes should be organized to meet the actual needs of industry, both existing and under implementation. This would require proper equipping of such institutions with upto-date tools and machinery commensurate with the actual needs of industry.

Higher education should also be directed toward Regional needs. At present there is critical shortage among engineers in the various engineering disciplines which will become more obvious when the large scale projects under implementation are ready for operation. Efforts should be directed towards establishing an engineering faculty in Juba University (medium to long range plan), meanwhile utilizing fellowships from friendly nations for the training of engineers in the disciplines according to priority needs.

Several potential short-, medium-, and long-term viable projects have been identified and proposed for feasibility studies.

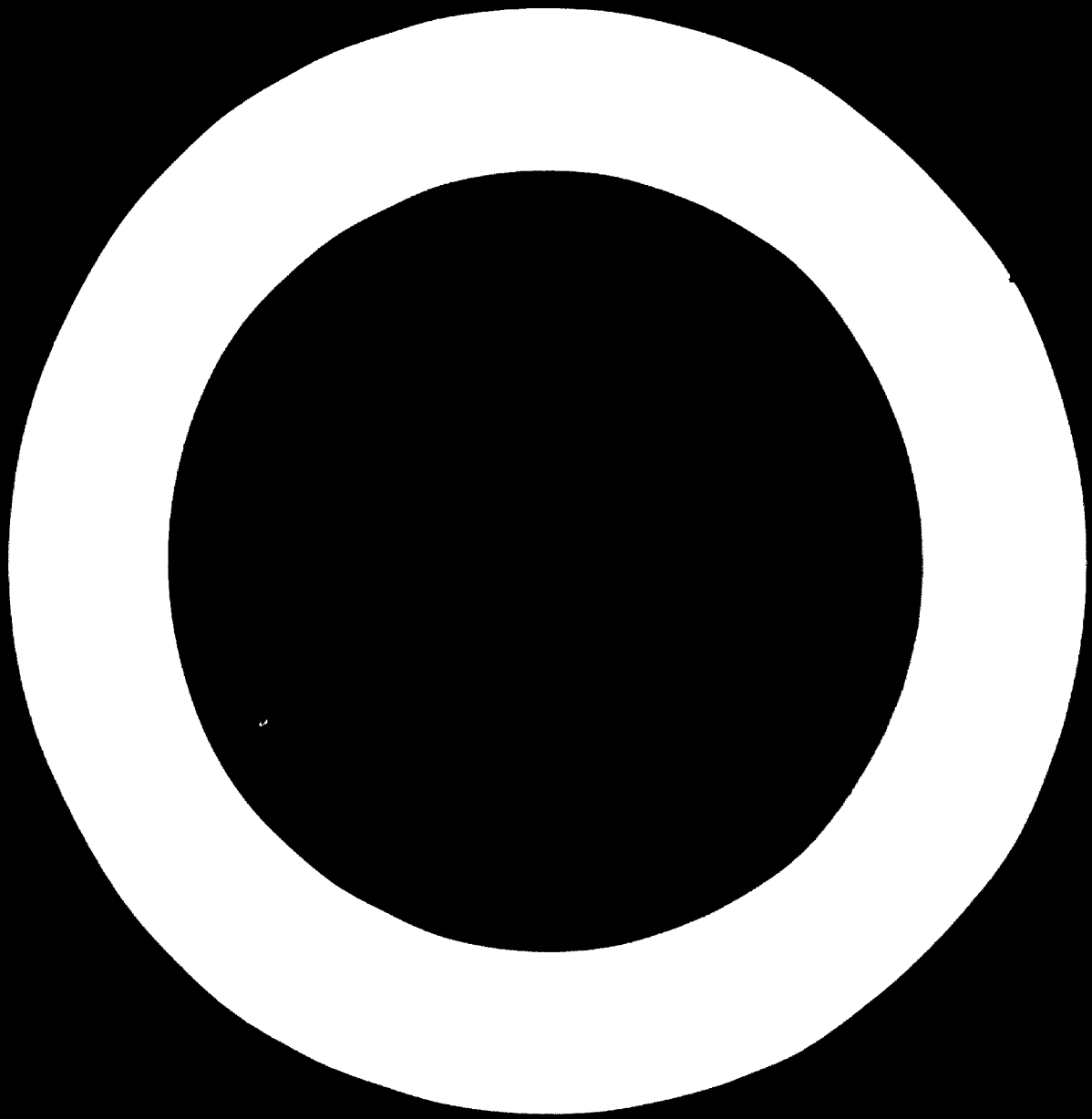


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1. Project Background

- 1.1 The Regional Government of the Southern Sudan through the Central Government of the Democratic Republic of the Sudan requested, in 1977, the United Nations Development Programme (UNDP) and the United Nations Industrial Development Organisation (UNIDO) to provide under the Special Industrial Service (SIS) an Industrial Survey Mission in order to review the present economic situation, available resources and various development schemes in the Southern Region of the Sudan.
- 1.2 UNDP and UNIDO accepted this request in 1977 under the project number SI/SUD/77/802. In March 1978 the Regional Government cancelled the request. However, in June 1978, the request was renewed and this has resulted in the present project. Duration of the project was originally planned for three months. The Regional Government of the Southern Sudan designated the Regional Ministry of Commerce, Industry and Supply as a counterpart agency.
- 1.3 The nomination of three members of the Industrial Survey Mission: S.R. Gajowski, Industrial Planner, Team Leader; A.A. Rasheed, Agro-Industry Specialist; and D.N. Saraf, Small Scale Industry Specialist was finally approved by the Regional Government and UNIDO in June 1978. The Mission arrived on 15 August to Juba.
- The Team was briefed at UNIDO, Vienna during the period 3 - 11 August 1978. The extended briefing at UNIDO was necessitated by the lack of flight connection to Juba via Khartoum. This period was utilized for discussions with the substantive sections of UNIDO on all basic aspects of the survey and for studying bibliographical sources related to the project.
- 1.4 During the briefing at UNIDO, Vienna it was mentioned that the duration of the assignment could be extended, if necessary, due to unforeseen travel delays and scope of the survey. The extension of the assignment of two members of the Mission, S.R. Gajowski and A.A. Rasheed was approved through 30 November 1978. The extension was necessary to complete the field studies. The third member of the Team, D.N. Saraf terminated his assignment on 24 October 1978 (the date of debriefing).

2 Purpose of the Project and Terms of Reference

2.1 Purpose of the Project: To review the present economic situation, available resources and various development schemes in the Southern Region of the Sudan and to provide the Regional Government with :

- (a) A realistic assessment of the problems and prospects of industrial development in the Region; and
- (b) Recommendations on :
 - (i) a short-term industrial development programme; and
 - (ii) a long-term industrial development strategy within the over-all framework of the country's Six Year Development Plan (1977/78 - 1982/83).

2.2 Terms of Reference: The Team, assigned to the Regional Government, would undertake the following tasks in close consultations and collaboration with the Regional Ministries concerned, particularly the Ministry of Finance and Economic Planning, Ministry of Agriculture, Animal Production, Forestry and Irrigation, and Ministry of Commerce, Industry and Supply:

- review the present economic structure, trends, available resources and problems and prospects of industrial development in the Region;
- analyse existing data, studies and reports on the industrial sector as well as the industrial development schemes that exist in the Region;
- assist in drawing up a short-term industrial development programme, identifying viable projects, particularly in the small-scale and the agro-based industrial sectors, and advise on their preparation and implementation;
- advise on formulation of long-term industrial development strategy for the Region within the framework of the country's Six Year Plan;
- examine existing institutions, procedures, trained manpower and other capabilities and services for

undertaking industrial development tasks and recommend measures for their development and improvement;

- consider the need for technical assistance for the industrial sector in the Region.

3. Work Programme

The work programme of the Mission rendered during the period of assignment from 3 August 1978 through 30 November 1978 is presented as Annex I attached to this report.

4. Methods and Procedures

- 4.1 During the extended briefing at UNIDO, Vienna the Team reviewed pertinent bibliographical materials and consulted with many experts and UNIDO staff on various aspects and scope of the survey.
- 4.2 The reviewing of the present economic situation, available resources and prospects for industrial development was based on studies of the Six-Year Development Plan of the Southern Region (1977/78 - 1982/83), financial budget (1978/79) of the Southern Region as well as other bibliographical sources available to the Mission.
- 4.3 In order to get an overall picture of the economic situation, available resources and prospects for industrial development the Team consulted with many knowledgeable Government officials during numerous meetings and visits to the appropriate agencies. During these meetings general and specific problems related to industrial policies and strategy were discussed in detail as well as constraints for industrial development. The Team presented observations made during the field studies and submitted suggestions regarding short-term and long-term industrial development programmes.
- 4.4 The study of the existing industries in the Southern Region and potential for development of new industries was carried out through field trips to various areas of the Region covering the six Provinces. The programme of field trips was outlined

by the Ministry of Commerce, Industry and Supply and was fulfilled completely. Additional visits were also made by the Team, wherever necessary, to obtain a more complete picture of the present state of industry, its constraints and problems in both public and private sectors.

During the field trips visits were made to all identified industrial establishments in the areas as well as some typical traditional handicraft units. Data and information collected from these visits included: scope of production, numbers of employees, technical problems and constraints for proper and economical operation of the units and possibilities for their development. Observations during these visits were discussed with the managerial staff of the plants and representatives of local authorities. General observations from each field trip were discussed, at regular intervals, with the Director of Industry, Ministry of Commerce, Industry and Supply and other attending substantive Ministry officers. Apart from Juba town and surrounding areas, the field trips made by car and charter plane covered 19 urban and rural areas throughout the six Provinces. In the Juba urban area practically all industrial establishments employing more than ten workers were visited.

- 4.5 The Team also visited during the field trips some agricultural schemes which were expected to create opportunities for the development of agro-industries as well as other non-industrial projects which contribute to industrial development as infra-structural facilities. All large scale projects under construction in the Region were included in the programme of visits and studies.
- 4.6 Since no statistical data regarding industrial activities were available, information and figures collected during the Team's visits to industrial establishments were the only sources for evaluation of the existing industrial potential and identification of prospects for their development. The collected data were reviewed and compared with figures included in some reports and studies whenever available for specific establishments. For various reasons including the relatively short period of field

studies covering the entire Southern Region and short period of the Mission's assignment as well as absence of standardized records in all visited establishments, data collected are not fully comparable, definitive and complete.

- 4.7 The study of the infra-structure facilities which are essential for industrial development was carried out on the basis of available reports and bibliographical sources and through observations made during the field tours. Some information and data regarding the plans for the improvement of infra-structure facilities were obtained from appropriate Government agencies in Juba and in Khartoum.

5. Findings (Results and Conclusions)

5.1 Cooperation with the Regional Government

Considerable assistance was provided by the Regional Government of the Southern Sudan to the Mission. Road transport facilities were made available for field tours to some Provincial areas and at destinations reached by charter plane. When some difficulties arose in provision of road transport facilities for the scheduled trips due to shortage of fuel or breakdown of cars, all efforts were made by the concerned Ministry to provide alternative means of transport as soon as it was possible.

The frequent meetings with the Director of Industry and staff of the Ministry of Commerce, Industry and Supply, Directors and responsible officers of other Ministries and various Government agencies and Corporations gave the Team many opportunities to discuss various aspects of the Mission assignments and to present suggestions on specific matters after the identification of the problems. The Mission also had the opportunity to discuss and consult with Central Government agencies and Corporations matters related to projects in the Southern Region which are under the auspices of the Central Government organisations.

5.2 Counterparts

Two counterparts were assigned to the Mission: Mr. Jacob A. Apoch Inspector, Ministry of Commerce, Industry and Supply and Mr. Taban

Nani, Technological Manager, Mongalla Agro-Industries Complex, Regional Ministry of Agriculture. Both counterparts accompanied the Team on all field trips to the Provincial areas and in Juba area, made all necessary arrangements including transportation and accommodation facilities, contacts with responsible authorities as well as private companies. They attended all meetings with the Team and participated in all discussions with Government officials and with Company executives, both in the public and private sectors. They provided the Team with all available reports and data related to the industrial survey and they became acquainted with the methods and procedures of the survey carried out by the Mission.

5.3 Relationship with other UN Projects

During the field trips in the Southern Region, studies in Juba and visit to Khartoum the Team had the opportunity to meet with projects managers and UN experts associated with the following projects which are directly or indirectly related to the present Industrial Survey:

- Land Development Project (Awail), SUD/73/001
- Institute for Agricultural Technicians (Yambio), SUD/72/035
- Multi-Service Training Centre (Juba), SUD/74/022 and SUD/76/014
- Strengthening of Cooperative Department (Juba), SUD/74/037 and SUD/77/010.
- Regional Dairy and Poultry Project, MAFAO, (Bolinyan), SUD/76/004
- Strengthening the Organisation for Economic Policy Making and Planning in the Southern Region, SUD/78/012
- Financial Accountancy Training Project, (Juba) SUD/78/06
- Strengthening of Administration and Financial Management at Provincial and Local levels (Juba) SUD/78/011
- Cooperative Education and Training SUD/74/027 (Cooperative Banking)
- Regional Fisheries Training Centre (Malakal), TF/SUD/19/258

- Educational Planning Adviser (Juba), SUD/73/026

In Khartoum, the Team met with most IERD group of the Planning Assistance and Training Project (SUD/17/002), Ministry of National Planning and UNIDO expert for project SI/SUD/77/803, Assistance to the Leather Industry Sector. The Team had also a very constructive and informative meeting with the project manager (SUD/73/041), Improvement of the Efficiency of the Public Sector Industries. During the meetings with all above-mentioned project personnel problems related to present and potential industrial development in the Southern Region were discussed in detail with valuable exchange of views.

The names of persons contacted are listed in Annex II.

5.4 Financial Aspects of the Project

In the original project budget the sum \$1,500 was allocated for duty travel. Due to transport difficulties, interruptions of scheduled air flights, weather conditions and inaccessibility of certain areas proposed by the Government for field studies, the Team requested additional funds in the amount of \$4,100 to accomplish all field trips within the period specified. The request was approved by UNDP/UNIDO which allowed the completion of the field studies. However, due to the untimely closure of Juba airport, the termination of the assignment of one member of the Team and difficulties in chartering of a plane for completion of field studies it was deemed necessary to extend the assignment, for the two remaining members of the Team, for an additional one month period. Approval of UNDP/UNIDO for the extension necessitated the review of the project budget while it allowed the Team added time to complete the assignment according to the terms of reference.

6. Policies and Other Courses of Action for Industrial Development

The purpose of this chapter is to review Regional resources as well as financial and other institutions and to propose comprehensive industrial policy measures and other courses of

action needed for successful implementation of the industrial development programme in the Region within the framework of the Regional Six Year Development Plan (1977/78 - 1982/83).

6.1 Utilization of Human Resources

The rapid growth of the population in the Southern Region and, in particular, in main urban centres, as a result of natural growth of population and immigration from the rural areas creates the need for provision of new jobs. According to the census of 1973, the percentage of unemployed adult population (persons over 15 years of age) amounted to 17% among males and 2% among females, of the economically active population. About 132,000 adults were unemployed and looking for work.

Preliminary urban studies carried out in 1976, showed that in the main provincial towns the percentage of unemployed and not economically active of the total population over 15 years of age was as follows:

	<u>Unemployed</u>	<u>Not Economically Active</u>
Juba	3.6%	46.8%
Wru	7.1%	44.0%
Rumbok	8.6%	48.2%
Yambic	8.5%	50.0%

Therefore, in the policy and strategy of industrialization, as the first principle, it is necessary to seek all opportunities to create new jobs for unskilled and semi-skilled people. This can be directed by:

- promotion of industries using unskilled and semi-skilled labour both in the public and private sectors with the extension of in-plant training,
- dispersal of industry and its location in provincial areas of the Region,
- implementation of labour-intensive technology in the now established units if it is justified from the economic point of view and technological requirements,
- development of small-scale and medium scale industries and promotion of handicrafts and traditional industries

by all means available.

In the ~~strategy~~ of industrial development, as outlined in the Regional Six Year Development Plan the Government is cognisant of the fact that implementation of policies for providing new jobs will require the training of people at all levels in the various industrial skills. The workers will need trained supervisors and managerial staff. Therefore, the training of cadres becomes the second important principle of industrial policies.

6-2 Technical and Managerial Training

In any industrial establishment both management and labour should be properly trained for the efficient functioning of the enterprise. This can be accomplished by a proper in-plant training and vocational training as well as training in technical schools. The Government has taken major steps to extend technical and vocational training programmes by establishment of several training centres and development of technical education in main provincial towns, with the cooperation and assistance of various inter-national agencies.

However, it is felt that the programme of training should be geared to present and future needs of existing industrial establishments and those proposed for implementation. This applies to the type of training and number of trainees as well as the provision of modern and suitable training equipment. Therefore, closer cooperation between training institutions and industrial planning agencies as well as established industries is essential. In other words, technical and vocational training centres should cater to the actual needs of industry.

Along with the training of skilled labour, there should be a corresponding training programme for the managerial and supervisory staff. Continuous upgrading of skilled labour and improvement of managerial practice should be a standing policy of the Regional Government training programme.

6.3 Financial Policies

The approved Regional budget for fiscal year 1977/78 amounted to LSd34,828,540 out of which:

- Regional revenues amounted to LSd14,028,540
- Central Government contribution amounted to LSd20,800,000

The collection of Regional revenues (Tax and non-Tax) was, up to May 1978, only LSd6,193,861 (44.0%) out of the above-mentioned amount.

Development Budget

Financial allocations in the Regional Six Year Development Plan (1977/78 - 1982/83), have been approved for all sectors of the economy at LSd231,310,000. For the first financial year of the Plan (1977/78) the sum of LSd22,707,463 in local currency and LSd19,782,557 in foreign currency were allocated. For the financial year, 1978/79, a revised development budget of LSd22,500,000 was approved instead of the sum of LSd39,451,904 in the original allocations for the Regional Development Plan.

In the Regional Six Year Development Plan it was presumed that out of LSd39.5 million allocated, the Central Government subvention would amount to LSd20.0 million along with the sum of LSd3,811,904 to be received as special contribution for specific projects. In the revised proposal the budgetary resources from the Central Government would amount to LSd20 million and the amount of LSd3.5 million as a surplus from the Regional Government. According to the information obtained from the Ministry of Finance and Economic Planning the development budget for the financial year 1978/79 will be reduced to about LSd15 million. Up to November 1978 slightly over L3 one million has been received. Under the circumstances, where there is substantial dependency on external resources for development programmes, it is felt that Regional Government industrial policy should be directed towards :

- giving priority in funding to existing viable projects

- giving priority for funding of new projects to small -, and medium-scale industrial projects especially those with firm foreign financial assistance,
- careful evaluation of large-scale projects, even those of significant importance to the economy but which could become a financial burden when undependable financial resources may result in delay of implementation thus leading to unnecessary increase in capital investment and in interest on loans.

Special attention should be given to facilitate industrial development plans by encouraging entrepreneurs in the private sector to utilize their financial resources for the establishment of small-scale and medium-scale industrial enterprises. This can be achieved through appropriate channels for mobilizing capital outside the industrial sector to use it for industrial development (example, from trade). For this reason there is a need also to provide for the private sector an appropriate set of financial facilities. It requires also to provide adequate capital in the form of risk capital, long-term and medium-term loans, technical assistance as well as efficient administrative assistance with regard to licensing, provision of land for industrial establishments etc.

The establishment of a branch of the Industrial Bank in Juba to facilitate industrial development in the private sector should be treated as an integral part of the Regional industrial policy.

6.4 Industrial Administrative Machinery

The industrial sector in the Southern Region is either public or private with no industrial units organized as cooperatives. The major part of industries is in the Public sector mostly in the form of medium and large scale units. Industrial establishments in this sector are either under the supervision of the Central Government Corporations or under various Regional Ministries as well as the Regional Development Corporation (RDC) .

The private sector operates small scale

(traditional or semi-mechanised) units such as bakeries, grinding mills, clothing factories. The only medium-scale, mechanised establishments are the Tobacco Processing and Cigarettes factory (Juba) and the Modern Furniture Workshop (Wau).

The Regional Ministry of Agriculture, Animal Production, Forestry and Irrigation operates the largest number of industrial establishments in the public sector with the greatest potential. These include all existing sawmills, some with carpentry workshops and a large-scale Industrial Complex in Naara. In addition, the Ministry has under implementation an Agro-Industry Complex in Mongalla. Meanwhile, the RDC operates several small-units such as traditional brick kilns, an oil mill while several other, small-, or medium-scale projects are in the pipeline. The Ministry of Commerce, Industry and Supply has in the pipeline several industrial projects such as cement factory, foundry and mechanical workshop, agricultural implements manufacturing plant, plastic and steel pipes factory, and bicycle assembly factory. For some of these projects feasibility studies have already been prepared or are being carried out. The Ministry of Communications, Transport and Roads operates most of the workshops for maintenance and repair of vehicles although some such units are also operated by other ministries and agencies.

Central Government corporations operate one existing large-scale establishment (Fruit Canning Factory in Wau) as well as three other large scale industrial projects (Tonj Kanaf, White Nile Brewery in Wau and Molut Sugar factory) under implementation. A fourth industrial establishment, Mongalla Weaving Mill is almost ready for operation.

The licensing for private establishments is the responsibility of the Ministry of Commerce, Industry and Supply.

Handicrafts are not organised and do not require licences for their operation.

Under the present administrative dispersal of industrial activities and new industrial projects among the various

Government agencies the following suggestions are presented:

- Close technical and economic cooperation between ministries and Government agencies is essential for coordination of activities and industrial development planning. Such coordination should be carried out on a continuous basis so that all participants would be upto-date on all activities. This type of cooperation is specifically needed in the field of supply of raw material, utilization of by-products, provision of maintenance and repair work services, manufacturing of spare parts, technical training of workers and utilisation of ancillary facilities such as power stations, water supply, etc.
- All necessary and pertinent information leading to the techno-economic cooperation between industries supervised by the various ministries should be channelled through the coordination body - Ministry of Finance and Economic Planning. For this reason it is suggested to establish in this Ministry a special coordination department for industrial establishments and new industrial projects.
- For all practical reasons the Regional Government should negotiate with the Central Government to take charge of existing and future industrial projects established in the Southern Region and which are under the supervision of the Central Government. Such a move would help to coordinate such projects with local infra-structure facilities and other existing Regional projects in the area.

6.5

Industrial Planning and Statistics

In the Six Year Development Plan and Annual Development Plans industrial planning appears primarily as financial allocations. It is felt that among the main reasons why industrial planning is not carried out in the terms of other technical and economic factors such as planned production, raw material demand,

labour time and machinery utilization, supply of raw material is lack of accurate and up-to-date statistics on the activities of industrial establishments and well prepared feasibility studies for new projects. For this reason the establishment of a system for gathering techno-economic statistical data on a regular basis is essential for economic analysis of industrial activities and industrial development planning.

Taking into account present transport and communication difficulties, collection of statistical data from the existing establishments and projects under implementation should be started with simplified statistical forms which could provide only essential data to begin with: quantity of production, added value of production, revenue, cost of production, number of employees, number of working days during certain periods, utilization of machinery, production constraints. This data should be collected every six months from all industrial establishments through their respective ministries and with the assistance of provincial commissioner's offices. Financial processing and tabulation of this data should be carried out by the Statistics Office of the Ministry of Finance and Economic Planning and analysed by respective substantive departments. This data should be used as a basis for future realistic industrial planning including industrial rehabilitation.

6.6 Optimal Size of Industrial Projects

In the development planning and projection of new industrial projects special attention should be given to the choice of ^{type and} the size of industrial projects. Under the present infra-structural conditions especially in the field of transportation, fuel supply, dispersal of labour resources, training capabilities, availability of financial resources, more attention should be given to small and medium scale projects which appear more viable than large scale projects.

7 Recommendations

Following the study and review of both Regional and National

Six Year Development Plan (1977/78 - 1982/83), Terms findings from field studies throughout the Southern Region, consultations with Government officials, Corporation representatives, entrepreneurs, UN experts and others from bilateral agreements involved in industrial and industry-related projects recommendations are presented, herewith, by the Mission in order:

- to relieve constraints affecting operational activities and economics of the existing industries;
- to put into effect principles propounded as strategy for industrial development;
- to implement, successfully, short-term and long-term development industrial programmes;
- to integrate certain industrial projects together and/or, along with other sectors of the Regional and country economy wherever applicable.

7.1 Institutional

7.1.1 An Industrial Development and Consulting Centre:

Consideration should be given by the Regional Government to establish, in the Southern Region, an Industrial Development and Consulting Centre with the following objectives and terms of reference:

- assist the Regional Government in the preparation and evaluation of industrial development plans;
- undertake industrial surveys for industries based on local natural resources as well as industries to substitute imports of products which could be manufactured locally on an economic scale of production;
- identify new industrial projects for implementation by either public or private sectors or jointly by both sectors; prepare project proposals; assist in the preparation of pre-feasibility and feasibility studies;

- provide technical, managerial and economic consulting services to the staff of the existing establishments and newly implemented projects both in the public and private sectors;
- provide technical assistance for industrial cooperatives to be set up by the responsible Regional Government agency;
- conduct short-term courses and seminars for technical and managerial staff of industrial establishments in the public, cooperative and private sectors, on a regular basis, in order to bring to their attention the latest technical and organizational development information and to upgrade their skills.
- when the Centre is engaged in conducting industrial studies for specific projects it should keep in view other ancillary, non-industrial, projects without which the original project under consideration could not function successfully (housing, public services, trade centres, transport, etc.)

In this respect, the Regional Government may request the UNDP to provide four experts (total of 144 man/month) to be augmented by short-term consultants and fellowships to support and assist the Centre in its early stages of activities.

7.1.2 Documentation and Statistical Centre

Because of difficulties encountered in obtaining accurate statistical data and pertinent information regarding specific and general subjects related to the economy of the Region as well as implemented projects and development prospects it is suggested that consideration be given by the Regional Government for establishing a centre for documentation, information and statistics. This Centre should, preferably, be an independent body responsible to, and supervised by the Council of Ministers of the Higher Executive Council or associated with the Regional Ministry of Finance and Economic Planning. The scope of activities of this Centre should include:

- to collect all reports, studies and documents for specific projects and development of the Region;
- subscribe to specific publications of particular significance to the development of the Region;
- preparation of appropriate statistical data forms for the collection of basic statistical material from all sectors of the economy through the respective ministries and Government agencies;
- tabulation of collected data, analysis of statistical information and preparation of yearly statistical reports in the first phase. In the second phase of Centre development quarterly reports could be prepared and made available for distribution;
- participate in various censuses in cooperation with the Central Statistics Department in Khartoum;
- initiate specific surveys and studies required for particular development projects;
- circulate to all Government agencies regular monthly reports containing pertinent information with necessary statistical data from up-to-date documentation;

The Centre should be aware of all past and present development projects implemented, in the Region, by UN Agencies or through bilateral agreements including assistance by voluntary organizations. The Centre should participate in the preparation of the country programme for technical assistance.

The Regional Government may request the United Nations Development Programme to provide two experts (24 man/month), one documentation expert and one in statistical data processing to assist in the organization of the Centre and conducting its activities during the initial stage.

7.1.3 A Branch of the Industrial Bank of Sudan in Juba

In order to promote the development of small-scale and medium-scale industries it is suggested to establish, in Juba, a branch of the Industrial Bank of Sudan. This would facilitate and

speed-up action taken by the bank for provision of financial support through loans for potential entrepreneurs. The bank also would provide technical assistance in the field of preparation of feasibility studies for new projects in the private sector. According to information provided by the Deputy Director of the Industrial Bank of Sudan, in Khartoum, a branch could be established upon request of the Regional Government.

7.1.4 Regional Cooperative Bank

Regarding the establishment of a Regional Cooperative Bank in Juba with which an UN Expert (Cooperative Banking Consultant, SUD/74/027) is assisting the Regional Government, the Mission strongly supports such a project and suggests the establishment of another two provincial branches of this bank in Wau and Malakal. Attention should be given in the project sheet to the activities of this bank in the field of financial support and promotion of Industrial Cooperatives in the Southern Region. At present, no industrial cooperatives exist in the Region.

7.2 Licensing Procedure and Implementation

The Development and Encouragement of Industrial Investment Act, 1974 and other following regulations create suitable opportunities for industrial development in the private sector, cooperatives and joint public/private investments. During the period 1969-1978, 37 licences were issued by the respective Government agency for the establishment of various industrial enterprises in the major towns of the Southern Region. Another 16 applications are pending approval. However, only 10 units out of the 37 were still operating in 1977/78. Even among those 10 functioning units a few have slowed down production because of continuous shortage of raw materials, interruption of power supply and shortage of fuel. Some entrepreneurs informed the Team during interviews that they seriously consider going out of business, due to the above-mentioned reasons.

Serious consideration should be given by the Ministry of Commerce, Industry and Supply to the reasons for the failure of some private

projects as well as to factors leading to the unsuccessful implementation of projects for which licences had been issued. Every effort should be made by the Ministry to overcome constraints and to keep active projects viable especially when they are essential for the industrial development of the Region and contribute to the provision of products which, otherwise, would be imported. This situation calls for change in the licence-issuing policy and creation of better conditions and positive atmosphere to encourage development of small scale industry in the Region.

7.3 Investment Procedures

Some projects visited by the Mission whether established prior to the drawing of the Six Year Development Plan, or those to be implemented during the Plan period were, apparently, not preceded by any pre-feasibility or feasibility studies. It is felt that some of their present unsuccessful operation may be partly due to this fact. Therefore, it is recommended that no industrial projects, in particular, large-scale ones, financed partly from foreign loans should be implemented without properly conducted feasibility studies, which should be a standing rule for all investment procedures. Failure to adhere to such procedure may result in tying up capital which could be used more efficiently in other projects which would show an immediate return.

7.4 Coordination of Large-scale Industrial Projects with Non-Industrial Ones

During the intensive field studies the Mission came across several situations where it was felt that some form of coordination between activities of certain projects could be co-beneficial. Some wasted by-products (ex. broken rice and rice bran in Awail; cottonseed cake in Nsara) could be utilised in other non-industrial, agricultural projects (Poultry and Dairy cattle projects) suffering at times from shortage of food. It is, therefore, suggested to conduct a brief survey to identify possibilities of utilization of such by-products wherever needed.

7.5 Urban Development Plans for Specific Industrial Projects

Three large-scale industrial projects, at present under implementation, were visited by the Mission: Molut Sugar Project; Tonj Kanaf Project;

and Wood Working Factory, Agro-Industry Complex, Ginnery and Weaving Mill at Mongalla. All these projects involve large numbers of employees (factory workers and/or farm labour), which will create new communities requiring all essential and basic amenities such as housing, schools, dispensaries, public services and utilities, markets and trade centres among other things. Rough estimates of the size of these communities range between 5000 and 20,000 persons including family members. It is, therefore, recommended to carry out, urgently, urban studies and to prepare urban master plans for each community in order to forestall haphazard settlements and create suitable conditions for the recruitment of staff and labour which would reflect in the efficient operation of the project. In this respect the Regional Government may request United Nations Development Programme to provide technical assistance in the field of town and country planning to cooperate with, and coordinate the activities of the respective ministries. This can be accomplished by provision of an expert in town planning to survey these projects and make recommendations on the scope of additional technical assistance required.

7.6 Technical/Managerial Personnel and Skilled Labour

The Mission realized that most Government departments, corporations and industrial establishments are either understaffed or lack properly trained managerial, technical and skilled labour. This creates situations where the technical staff is sometimes overloaded with administrative responsibilities which leaves little time for technical activities. In many Government agencies and industrial establishments there are many vacant posts which need to be filled by well trained technical and managerial personnel. According to the report by Mills (1977), percentage of vacant posts that require filling amounts to 20 to 50%.

The same applies to the shortage of skilled labour in the various establishments.

The Regional Government is carrying out an ambitious programme for the training of skilled labour at various levels with the assistance of UN Agencies and other voluntary and bilateral organisations (M.S.T.C., Mau May Vocational Training Centre, Malakal Agriculture

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Machinery Training Centre, and In-plant Vocational Training) as well as other Government technical schools. The Regional Government also sends trainees for technical training in the Northern Region. In addition, funds through SIDA-Funds-in-Trust programme provides for fellowship training in various disciplines. However, based on observations from the Mission's field studies, it is felt that the immediate demand for trained personnel in all categories is more than the present capacities of the training centres. With no accurate data and information about the exact needs for skilled labour and technical personnel and sources of their supply, a comprehensive survey should be considered of primary importance. The assistance of UNDP/ILO expert, Mr. L.R. Mills (at present with Juba University) and Mr. K.C. Cheryan for advice in this matter could be called upon.

Therefore, it is recommended to make all efforts to:

- increase the number of Engineering College's graduates by recruiting more students for studies at higher technical colleges and universities in Khartoum wherever fellowships can be obtained;
- establish an engineering faculty at Juba University as a long-term project with requested assistance from ESC, USAID, UNESCO and any other willing organizations;
- place more emphasis on up-grading engineering and technical skills of college and technical school graduates through in-plant training making use of in-the-field international experts serving in the Region.
- intensify the programme of training at the technical schools with special reference to operation of modern machine tools and equipment similar to those to be installed in the industrial projects under implementation. The provision of such equipment for training could be requested from voluntary agencies and through aid programmes.
- provide incentives for skilled labour and technical staff to remain with the organisations where they are employed so that production is not interrupted by constant change among staff.

The Regional Government may request assistance of UNDP/ILO/UNIDO to upgrade and expand present technical training institutions and

provision of suitable training equipment.

7.7 Inventory of Natural Resources

7.7.1 Mineral Deposits

Some preliminary surveys on mineral deposits have been carried out in the Southern Region and the presence of some valuable minerals has been reported. In order to evaluate their economic value intensification of geological surveys is needed. The main constraints on progress in this field are: limited budget, inadequate staff and present capabilities of the Geological Department of the Ministry of Commerce, Industry and Supply to carry out studies on a wider scale.

The Regional Government may request assistance from United Nations Resources and Transport Division, New York through UNDP to provide technical assistance for strengthening the Regional Geological Dept., and for advice on planning of strategy and priorities according to available facilities and those which could be provided by external assistance. As immediate recommendation it is suggested to identify resources of building materials deposits in areas other than Kapocta (lime) and Luli (clay), for development of building materials industry which is in urgent need for all construction projects which are delayed because of shortage of imported cement.

7.7.2 Forestry Resources and Afforestation Programmes

As has been shown in the addendum to this report (4.4.1 and 4.4.3), much already is being done in inventory of forest resources (Bantong Central Mountain area and Yoi area), however it is mostly confined to some areas of Eastern Equatoria Province. All efforts should be made by the Regional Government to intensify forest inventory in other forest areas and to extend afforestation activities.

It is suggested to establish fire wood plantations near urban centres in order to protect existing forest resources from excessive exploitation and to provide in a controlled way fire wood for households and traditional industries.

The Regional Government may request technical assistance from United Nations Specialised Agencies and from other countries through bilateral agreements to determine existing wood resources, outline

plans for long-term afforestation programmes in all areas, assess the future demand for hard and soft wood needed for construction, railway and wood processing industries.

7.7.3 Fisheries Resources

The strategy of the Regional Government is to increase fish supply to improve nutrition. Several projects are at present directed towards this aim. Several reports have indicated the rich potential of fish resources in the Southern Region with conflicting data regarding annual catches. Since the Regional Government plans to increase the annual catch progressively by 2500 tons the following suggestions are presented :

- collection of accurate data through out the year regarding fish landing, fish species, quantities processed, marketing outlets, etc. This can be carried out on provincial basis by fisheries officers, graduates of the Malakal Fisheries Training Institute. The Fisheries Department in cooperation with the Agricultural Statistics Office should prepare simple statistical forms for tabulation of data collected by fisheries officers. Such data should be forwarded to the Ministry at regular intervals for analysis and evaluation of information collected.
- until accurate data concerning fish landings are made available, plans for progressive increase in fish catches should be approached with caution depending on accurate market surveys for fresh fish consumption and fish processing facilities. Production exceeding actual demand for fresh fish or that for processing would result in the wasteful spoilage of an extremely perishable product.

7.8 Energy:

At present there are only two main sources of energy utilized. in the Southern Region: imported oil products and wood as fire wood and charcoal. No other sources of energy are used on a large scale apart from water energy which powers the Kateri sawmill. Constant shortages of oil supply to the Southern Region mainly due to transport difficulties and limited foreign currency reserves

seriously affect the Region's economy. Many of the visited factories had not been operating for long periods. Public services and transport operations are often interrupted. Fire wood is used mostly in households, in certain traditional industries (bakeries, brick kilns) and in a few cases for operating locomobile steam engines.

Discovery of oil resources in Bontiu, Upper Nile Province, which could relieve the energy crisis in the Southern Region should be treated as a long term prospect for energy supply.

As short-term and medium-term strategies to alleviate difficulties arising from oil supply shortages the following suggestions for consideration are presented :

- establishment of an oil-supply coordination office in Port Sudan to organise regular delivery and shipment of fuel oil to the Southern Region with the following supporting facilities:
 - (a) construction of oil storage dumps in strategic locations along the river route to Juba,
 - (b) establishment of a Regional Oil Tanker fleet, specifically for the transport of oil from the North on a regular schedule. For the present, ferrocement boats, which require approximately 3 months to build, can be specially designed and constructed for that purpose;
- accurate statistics regarding actual consumption and demand for fuel oil needed for the operation of machinery and equipment both in public and private sectors throughout the entire Region should be collected regularly. This can be accomplished through the Commissioner's offices and District offices. In addition, fuel requirements for the now, large scale projects under implementation should be included in the above survey. Such information are essential for establishing fuel requirements and distribution policies.

With regard to fire wood utilisation, a programme for the establishment of fire wood plantations should be implemented nearby urban centres in order to reduce uneconomical exploitation of good quality wood

which can be used for industrial processing.

Utilisation of other sources of energy such as bio-gas, wind and water power, even on a small scale, should be considered wherever applicable. The Regional Government may request United Nations Specialized Agencies (through UNDP) to conduct feasibility studies in this field.

7.9 Transport

Present transport conditions and future development plans have been described in detail in the addendum (Infra-structure: 3.2). Recommendations regarding specific aspects of transport will be presented herewith:

7.9.1 River Transport

The river transport should be considered, for a long time to come, as the main transport means between the Southern Region and the North, specially for bulky freight. A comprehensive programme for development of river transport is prepared by the Central Government, River Transport Corporation and by the Regional Government. It is described in Annex I (Chapter 3.2.2).

As short-term and medium-term suggestions to the development programme of river transport, the following proposals are made in order to relieve the present constraints affecting the Regional economy, in particular with regard to supply of some basic commodities (food, fuel and raw material):

- 1- consideration should be given to the establishment of a Regional river fleet for transport of strategic commodities utilising the present boat-building facilities at the Ferro-cement Boat Yard in Juba. This yard builds, at present 45' ferro-cement boats and is capable of building 70' long ferro-cement or steel boats.
- 2- improvement of port facilities in the Southern Region including storage, handling and maintenance are needed so that present shortages of fuel and raw material for the large scale projects, already under implementation, and for the existing industrial establishment could be overcome.

7.9.2 Air Transport

Improvement of road, rail and river transport facilities are usually medium to long-term projects. For this reason, consideration should be given to the increase of air cargo capacity of the present air service fleet for non-bulky, valuable goods. As an alternative, Sudanair may consider the need of converting one Fokker 27 into a cargo plane even on temporary basis.

7.10 Industrial Sectors

7.10.1 Food Processing

7.10.1.1 Fruit and Vegetable Canning

a) Regarding Mau Fruit Canning Factory, a rehabilitation programme for this factory should be considered, based on a comprehensive feasibility study to be carried out with the assistance of Food Research Centre, Agriculture Research Corporation and Industrial Research and Consulting Corporation and UN experts requested for this project. In carrying out such a study it should be kept in mind ^{that reviewing} all reports and studies made previously for this factory.

In addition the following points should be considered:

- 1) Establishment of a farm, suitably located, for the production of all necessary raw materials to keep the factory supplied for continuous operation. In addition, efforts should be made to contract for raw materials with local farmers utilizing various incentives.
- 2) The assistance of the PDU sub-centre in Mau as well as of UNDP/FAO experts on project SUD/77/017 (Soil & Crop Investigation Project - Bahir el Ghazal) could be called upon to assist in their areas of expertise.
- 3) ~~Restoration~~ **Restoration** of the machinery and equipment in the factory or their replacement if spare parts cannot be manufactured in the country or made available from abroad. Mechanical expertise in this field is needed.
- 4) Training of the managerial and technical staff and reorganisation of the factory according to the suggestions made by the manager of project No. SUD/74/041 ((Public Sector Corporations).

- b) Regarding the project proposal for the establishment of a new fruit processing plant in Western Equatoria Province, for which a feasibility study of the factory, preferably a small- or medium-scale unit, to be commensurate with the actual availability of the products to be canned and existing infra-structure conditions in the selected location.

7.10.1.2 Mlibo Oil Industry

- a) After careful review of the ODM report (1978), regarding the rehabilitation of the oil mill as part of a rehabilitation programme for the entire Complex, the Mission supports the ODM proposal. It is felt that rehabilitation of the oil mill can only be accomplished as an integral part of the entire Complex. Since the rehabilitation programme for the Nzara Industrial Complex by ODM is almost assured, according to information provided by Government Authorities, it is suggested that UNDP review MAO project No. TCI/3/S UD/03/T (Assistance to the Nzara Industrial Complex in Oil Seed Processing.).
- b) Recommendations regarding the Yirol Oil Mill based on the Team's visit to this factory during November 1978 comprise two aspects:
- 1- A feasibility study for the rehabilitation of this mill, or its relocation, is being carried out by the Engineering and Transport International Co.Ltd., Khartoum for the regional Government. Relocation of the oil mill would take place only in the event that raw material supply is proved inadequate for the economical operation of the mill. The Mission supports the carrying out of a feasibility study regarding this mill.
 - 2- Based on information provided by the managerial staff of the Mill the Team recommends that the responsible authority should investigate the possibility of successful operation of the Mill if some repairs of the equipment can be carried out locally and operational funds for supply of raw material are made available. According to the above source, lack of operational funds is the primary constraint and that the raw material is available.

- a) As a long term project, the establishment of an oil mill in Mongalla, associated with the existing ginnery, should be seriously considered. This is due to high cost of cottonseed transport to Nzara as well as transport difficulties (trucks and fuel).
- d) Consideration may be given to the introduction of small scale oil mills in areas of oil seed production but in modest quantities to serve rural and small urban centres which lack oil mills and suffer from edible oil shortages.

7.10.1.3 Meat and Dairy Products Industry

The Team supports the Regional Government's request to carry out a comprehensive feasibility study for the Agro-Industry Complex at Mongalla by a Dutch Consulting Company. It is recommended that special emphasis be given in this study to a realistic assessment of the proposed beef cattle and poultry projects in relation with the projected capacity of the slaughterhouse. All efforts should be made to complete this feasibility study as early as possible and make use of equipment which was delivered to the original site of construction in 1976.

7.10.1.4 Fishery Industry

- a) With regard to fish processing under present conditions in the Southern Region, where there is a lack of accurate data about fish species suitable for processing and seasonal or yearly catch, it is recommended to concentrate on the improvement of salting and sun-drying of fish along with the development of new markets for this product.
- b) Regarding the Agro-Complex in Mongalla it is recommended to implement the proposed Ice Making Plant for fish chilling and to consider this plant as of essential priority. It is also necessary to establish proper marketing outlets, (retail shops fitted with freezing and cold storage facilities), before considering the processing of fish by freezing as planned for the Agro-Complex at Mongalla.

- c) It is recommended to extend the activities of the Lalakal Regional Training Centre to Juba area with its boat-building, fish net making, fish processing and organization of fisheries cooperatives activities.

7.10.1.5 Cereal Processing and Bakeries

- a) It is recommended to establish small scale grain mills in various areas of the Southern Region to serve rural and semi-urban communities. Such units would be more viable under the present conditions when the production of various grains is mostly on subsistence level, except Rank area where agriculture is mechanized and grain production is carried out on a commercial basis. Medium-scale units are feasible only in the main urban centres and should be considered along with proper storage facilities (silos). It is also recommended to unify type of machinery and equipment used throughout the Region to facilitate repair and spare parts supply.

It is recommended to establish, in the Southern Region, a wheat milling industry starting with Juba along with the Silos Project negotiated with a French Company. Wheat is easier to handle than flour and the by-products from wheat milling can be utilized along with other by-products (cottonseed cake) for the proposed poultry, dairy and cattle projects. The establishment of wheat milling industry in the Region will overcome the present inefficient operation of most bakeries resulting from delays of wheat flour deliveries mainly due to transport difficulties.

- b) Serious consideration should be given to the development of bakery industry in the Southern Region in order to improve the supply and quality of bread which is the basic foodstuff in the urban areas. It is recommended to consider the introduction of standard model bakeries of different sizes and type of fuel used in order to assist potential investors in selecting the appropriate and most economical units according to local conditions.

It should also be kept in mind new potential demand for bread in the main towns of the Region and centres where large scale projects are under implementation where new communities will be established.

7.10.1.6 Alcoholic and Non-alcoholic Beverages

- a) It is recommended that all efforts should be made to complete, and get into operation, the White Nile Brewery at Khartoum, where a large sum has been invested. The speedy completion of the brewery will reduce large annual losses being incurred since 1976 (in stored malt, depreciation of capital investments, interest, etc.). Consideration should be given to the utilisation of stored malt as cattle feed rather than its complete loss as unfit for beer manufacture.
- b) Since no soft-drink beverages are produced on an industrial scale in the Region, the Government should encourage entrepreneurs who have applied for licences to establish small scale units by all possible means. However, establishment of such industries should be supervised from the hygienic point of view.

7.10.1.7 Coffee, Tea and Tobacco Processing

- a) Since there appears to be good potential for coffee and tea growing in the Southern Region it is suggested to encourage local processing of both products through suitable promotional policies and incentives in the cooperative and private sectors.
- b) There exists in the Southern Region suitable conditions for expansion of tobacco growing and its processing. The tobacco industry has good prospects for its development and may contribute substantially to the country and regional economy and reduce foreign currency expenditure for imported manufactured tobacco products.

It is recommended to help alleviate the present constraints which affect the production and full utilization of the

existing capacity of Haggat Tobacco and Cigarette Factory in Juba.

As a long-term recommendation, consideration should be given to the development of this industry in the Southern Region to cover, partly, the country's demand for tobacco products and for export of these products outside the country.

7.10.1.8 Sugar Industry

As mentioned under point 7.5 of this chapter, serious consideration should be given to the establishment of all infra-structure facilities at the Melut Sugar project to guarantee the success of this large-scale project and full utilization of its projected capacity.

7.10.2 Textile and Clothing Industries

7.10.2.1 Textile Industry

- a) After reviewing the rehabilitation project submitted by ODM (1978) for the Equatoria Province Agricultural Production Corporation (EPAPC) the Mission fully supports the rehabilitation programme of the spinning and weaving mills at the Naara Industrial Complex which is closely integrated with the reactivation of the cotton-growing programme as part of the EPAPC agricultural development. This comprehensive and integrated plan may assure the success of the first and only Agro-Industrial Complex in the Southern Region which proved to be successful when first established in 1950's.
- b) Regarding the Mongalla Weaving Mill, and according to the Team's knowledge, no feasibility study has been carried out for this project. The factory is almost completed and should start its operation very soon. The plan is to provide this mill with cotton yarn from Hag Abdallah spinning ^{mill,} when completed, over a distance of about 1700 kms (by rail and river). All efforts should be made by the Central and Regional Governments to supply the mill regularly with raw materials (yarn and starch) and fuel to utilize fully the installed capacity of the mill by organization of transport and provision of

adequate storage facilities.

As long term recommendation, it is suggested to carry out a feasibility study for the incorporation of a spinning mill in Mongalla as an integral part of the existing ginnery and the newly built weaving mill. The establishment of such an integrated complex may be an inducement for expansion of cotton-growing in the Eastern Equatoria Province and may assure the economy of cloth production in the Region. This may require the rehabilitation of the existing ginnery and its storage capabilities.

- e) Irrespective of the above-mentioned proposal, the existing Mongalla ginnery needs immediate attention to meet the on-coming season by relieving present constraints: civil repair work in the engine room and provision of trucks to vacate stored seeds and bales of lint some of which had been stored since last year.

7.10.2.2 Non-Cotton Fibers Industry

The ~~Tang~~ Kaaf Project, which is under implementation, will introduce this industry to the Southern Region. All efforts should be made by the Central and Regional Governments to complete this project by alleviating all constraints resulting in unnecessary delays for project completion. The problems are described in the addendum, chapter 4.2.2.1. Consideration should also be given to the provision of all necessary infra-structure facilities needed for the efficient operation of the factory and the plantation. It is also suggested to carry out a feasibility study for the utilization of kaaf by-products (cortex) for chipboard manufacturing.

7.10.2.3 Clothing Industry

Clothing manufacturing is one industry which should have good prospects for development in the Southern Region due to low capital investment requirements and being labour intensive. However, out of the four existing factories in Juba, two are only operating intermittently and appear ready to close down due

to many constraints, mainly in the area of raw material transport and irregular power supply.

It is suggested to investigate the present constraints which threaten the closure of the remaining operating factories and to help in the rehabilitation of all units. It is also suggested to organize and promote clothing cooperatives (as small-scale and handicraft units) in provincial towns of the Region to meet local demand for clothing and to reduce their import.

7.10.3 Leather Industry

- a) As a short-term recommendation it is suggested to organize a cooperative among the leather-tanning trainees from the ITC project in Juba (number S UD/74/022). The assistance of UNDP/ILO expert project number (SUD/77/010) and (SUD/74/037), may be called upon to prepare a feasibility study for such cooperatives and to assist in initial stages of its organization.
- b) As a long-term recommendation, it is suggested to carry out a feasibility study for the establishment of a medium-size tannery in Mongalla following the establishment of the slaughterhouse (Agro-Industry Complex) from which about 6000 hides and 3000 skins will be available at the initial stage of production where semi-mechanized tanning should be adequate. The assistance of UNDP/UNIDO experts on the proposed Central/^{Leather Project} could be called upon for the preparation of the necessary feasibility study.

Further expansion of such a tannery accompanied by full mechanization of the technological processes can become feasible when the slaughterhouse operates at its full installed capacity (60,000 heads of cattle annually), the supply of hides and skins from rural areas becomes well organized and tannery operators gain experience in industrial tanning technology.

7.10.4 Wood Processing Industry

There is good potential for development of wood processing industry in the Southern Region on the basis of existing forest resources.

- a) Based on FAO Report, 1973 (R. DP/LUD/76/020), it is recommended to carry out studies to outline demand for timber over a long period of time for all sectors of the economy; wood processing industry, construction industry, railway, etc., and to determine the most economical use of wood and its processing.
- b) The existing sawmill industry should be carefully evaluated in all aspects namely; utilization of their existing capacities, marketing of timber, transport conditions and fuel supply, technical state of equipment and the need for their refurbishment, availability of spare parts and the possibility of their manufacturing including reconditioning of band and circular saws, coordination of the operational activities of sawmills and their integration with woodwork workshops. Organization and management aspects should be also included and coordinated through a central body.

To meet the projected demand for sawn wood implementation of mobile sawmills, proposed in the above-mentioned FAO Report, is strongly supported.

- c) The first priority in the development programme of wood processing industry should be given to the full utilization of the installed capacities in the existing furniture and carpentry factories and the rehabilitation of those that need it in addition to organizational improvement.
- d) It is suggested to include in the feasibility study, to be carried out for the Agro-Industry Complex at Mongalla, the wood workshop which is under construction and is expected to be completed in 1979. This study should include, in particular, the following aspects: sources of regular timber supply for its installed capacity ($20 \text{ m}^3/\text{day}$ over a period of 270-290 working days/year), economical use of timber; coordination of the production programme with those to be carried out in the existing furniture factory in Juba, to complement, rather than to compete, with each other; marketing of products and technical cooperation between all factories in Juba area.

- e) Regarding the Romanian offer for the establishment of a wood working complex in Juba, a pre-feasibility study should be carried out in order to determine the kind of products to be manufactured in this complex, taking into account the existing furniture factories in Juba and the wood workshop in Mongalla as well as the existing sawmilling potential in the region. Special attention should be given to the manufacturing of various types of boards and veneer which could substitute timber and are needed for the furniture industry in Juba area. Specific suggestions regarding the woodwork complex in Juba are made in the addendum, chapter 4.4.3.2.
- f) Suitable promotional policies should be implemented for the development of small-scale carpentry units in various areas of the region to cover local demand and to avoid uneconomical transport over long distances.

7.10.5 Chemical Industries

- a) Plastic Products: A project for manufacturing of plastic pipes and steel pipes has been included in the Regional Six Year Development Plan. A feasibility study for this project is being carried out by Engineering and Transport International Company Ltd, Khartoum. Since the study is not finalized and no conclusions were reached no specific recommendations can be presented. However, it is felt that plastic pipes for construction and industrial use are needed in the Region and can replace to some extent imported steel pipes. If such a project proves to be economical and feasible for implementation in the region it is recommended to start with a medium-scale unit.

The establishment of a small-, or medium-scale plant for the manufacture of plastic household items should be considered in the Southern Region. A feasibility study for this project should be carried out taking into consideration such products as containers, various household products such as plates, cups, etc.

- b) Insecticide Products : Manufacturing of insecticides for household and agricultural purposes, based on dilution of ready-made concentrates should be considered as essential in the Southern Region. This type of production requires low capital investment, can be carried out in small-scale units and can meet the increasing demand for insecticides for agricultural and animal schemes as well as for households. Diluted insecticides for households should be less expensive than imported insect sprays.

The manufacture of diluted insecticides should be integrated with the manufacture of spray equipment for field use and simple spray-guns for households. It is suggested to carry out a feasibility study for establishing of small-scale units in main towns of the Region.

7.10.6 Building Materials Industry

This industry is the least developed in the Southern Region. The short-ago of building materials in the Region is one of the main constraints for development of the construction industry. Locally made bricks in traditional units are of low quality while stones are used mostly mainly for low bearing construction. All large-, and medium-scale construction projects are mainly based on imported steel bars, corrugated steel or aluminium sheets for walling and roofing and concrete. The following recommendations are presented to the development programme of building materials industry:

- a) First priority should be given to the establishment, in Juba area, of an industrial, medium-scale ceramic products manufacturing unit utilizing more advanced technology than intermediate technology. Such advanced technology can only be implemented for the production of good quality ceramic materials needed for the construction of industrial buildings, roads, bridges, drainage pipes, flooring tiles, etc. The lowest economical capacity of such units is at about 7-10 million brick equivalent. A feasibility study for this kind

of factory has been prepared by a foreign company and submitted to the Regional Government. However, such a factory was recommended as a second phase preceded by a unit utilizing intermediate technology. The Mission supports the implementation of this project starting with phase 2. In case this project cannot be implemented because of financial constraints, it is recommended to establish, as an alternative, a medium-scale unit utilizing intermediate technology on the same proposed site where good quality clay exists. In this case, the services of experts from Intermediate Technology Development Group can be called upon for assistance in the implementation of the project. One such expert is already attached to the Gamba Brick and Tile Factory near Juba. In addition, development of small-scale brickmaking units using traditional kilns should be promoted in various provincial areas of the Region to cover local demand for bricks.

- b) The establishment of small-, and medium-scale units for manufacturing of mosaic tiles is also recommended. Introduction of these products should reduce excessive use of cement for flooring in all types of buildings and is preferable for implementation in the Southern Region from the hygienic point of view and especially since stones for crushing are available.
- c) Implementation of the lime production project which is included in the Regional Six Year Development Plan is supported as first priority investment. Development of lime production can alleviate construction constraints due to the cement shortages. A feasibility study for the establishment of 2-3 medium-sized units in Kapoeta, Miria and Idnyr should be carried out immediately to set up this urgently needed industry.
- d) The proposed project for the cement factory to be established in Kapoeta is supported in principle. However, the feasibility study submitted to the Regional Government should be carefully

evaluated especially from the standpoint of the estimated demand for cement in the Region and the economic size of the factory. This project should also be evaluated in the context with the entire development programme of building materials industry in the Southern Region.

Technical assistance may be requested by the Regional Government from UN Specialized Agencies for the development of building materials industry in the Southern Region.

7.10.7 Maintenance and Repair Work Industry

There is a great need for the rehabilitation and development of maintenance and repair work shops in the Region.

- a) Regarding the existing mechanical workshops which are associated with industrial establishments (Loka mechanical workshop, Wau Fruit Canning Factory mechanical department, mechanical workshop at Wau Sawmill, etc.), it is suggested to utilize fully their installed machinery and equipment by serving repair work for other industrial units and public utilities, looking in such workshops while urgently needing assistance. This suggestion applies to new industrial projects with well equipped mechanical work departments. Coordination of such activities should be carried out by the Ministry of Commerce, Industry and Supply in cooperation with other ministries concerned.
- b) Under the circumstances, the Mission strongly supports the establishment of a foundry and general maintenance in Juba for which a feasibility study has already been prepared by the Engineering and Transport International Company Ltd of Khartoum (1978). This project should be treated as first priority investment. The Government may request UNDP/UNIDO to evaluate this study as well as subsequent assistance if proved feasible. Meanwhile the Government may consider submitting a request to UNDP/UNIDO for provision of two mobile workshops which would be suitable for emergency repair.

e) A serious and critical situation exists in almost all existing vehicle maintenance and repair workshops in the public sector: 9 in Juba and 7 in provincial towns. The major constraints are:

- lack of spare parts for over 30 makes of vehicles from heavy trucks to small passenger cars.
- lack of modern testing equipment and tools
- lack of basic machine tools in most workshops
- shortage of trained mechanics and electricians
- lack of managerial and administrative coordination between the maintenance workshops and their respective ministries.

This situation resulted in about 50% of vehicles being off the road, some for extended periods of time. The one exception is the vehicle maintenance workshop which specializes in the repair of STEYER vehicles, however, shortage of spare parts is also a major constraint.

As a first step to alleviate this critical situation, it is recommended to carry out a comprehensive inventory of stock supplies in all existing workshops and to categorize all immediate needs for spare parts for the various makes of vehicles. On the basis of this inventory, it would be possible to determine which spare parts could be manufactured locally in the reasonably equipped machine workshops as well as in the workshops in the Northern Region, or those to be imported.

The Government may request UN Specialized Agency for technical assistance in the preparation of a rehabilitation programme for the maintenance and repair workshops in the Region. Special attention should be given to the reduction of the number of car makes to facilitate maintenance and repair.

7.10.3 Other Industries

7.10.8.1 Ferro-Cement Boat Building

The existing boat yard in Juba for the construction of ferro-cement boats is a viable project and with the experience gained there are good prospects for development of this industry in the Southern Region. It is suggested to evaluate this project along with the proposal submitted by the project manager for expansion of the boat building yard and the introduction of new models of ferro-cement boats as well as the construction of steel boats for commercial transport of bulky commodities. Extension of boat building in the Southern Region should help overcome some of the constraints which affect river transport in the Region.

7.10.8.2 Traditional Industries/Handicrafts

Traditional industries are relatively well developed in all provinces of the Southern Region and play a significant role in the Regional economy. They employ more than 20,000 persons (MEFIT, 1978) and produce various kinds of goods commonly used in rural areas and to some extent in urban areas, such as: spears, pipes, wooden products, leather products, musical instruments, garments, etc. Most of these activities can be classified as substantive and are carried out intermittently. There are no organized marketing outlets for traditional products which have an artistic or semi-artistic value and can be sold as souvenirs to tourists.

Apart from tailoring in towns which use non-electrical sewing machines (mostly obsolete), no other modern specialized activities were identified by the Team during the field trips.

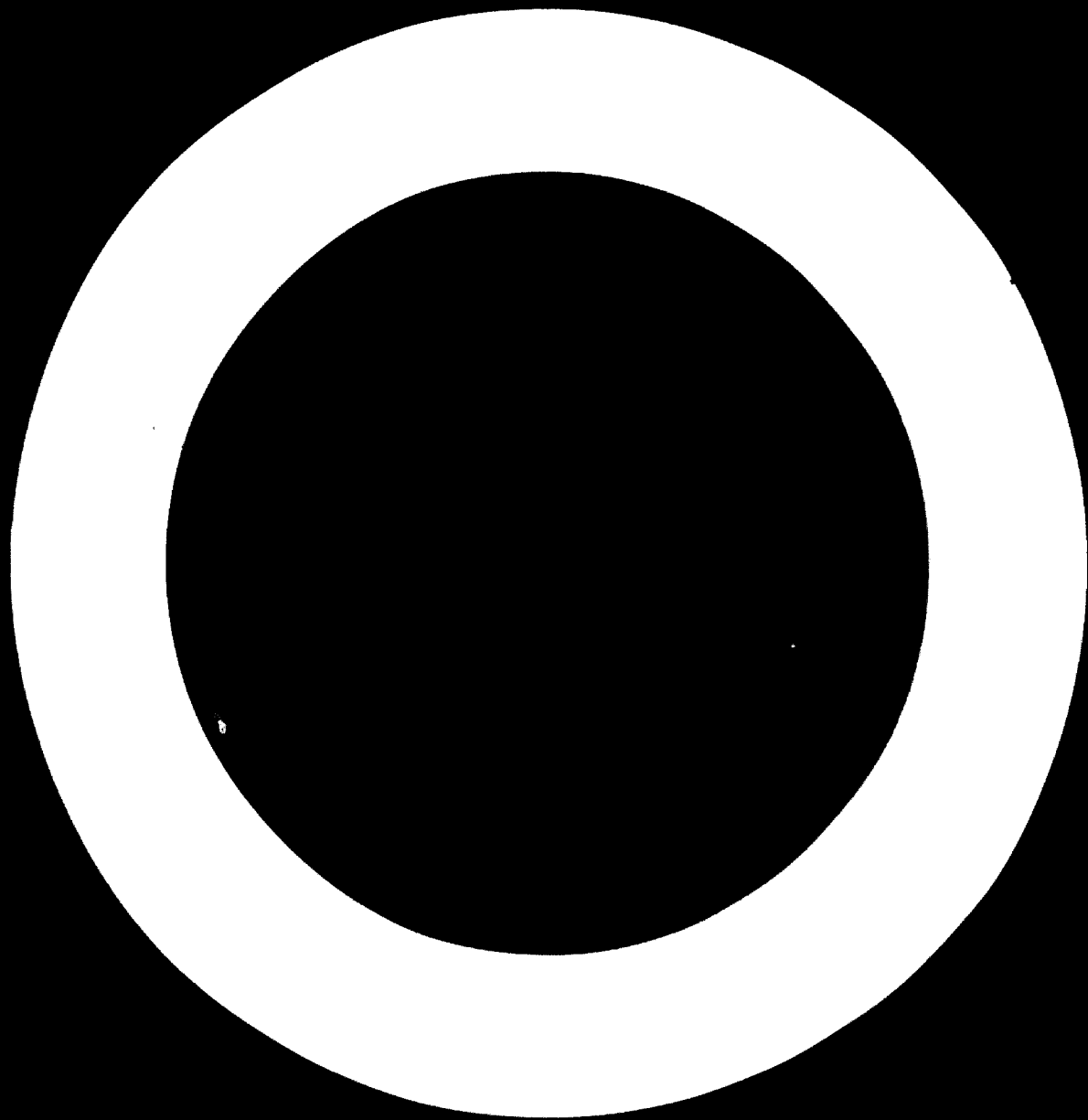
The survey carried out by MEFIT did not indicate such modern handicraft activities as repair of electrical household utensils, radio and T.V. repair, etc.

To create better opportunities for traditional industries and handicraft development as well as introduction of modern

techniques the following recommendations are made:

- Setting up of a rural industries demonstration centre in Juba to demonstrate various techniques as developed elsewhere and which could be suitably adopted in the Southern Region, the equipment being such as can be made locally. This centre would train trainers-demonstrators for further dissemination of knowledge found useful and practical.
- Organisation of marketing outlets for artistic and semi-artistic traditional industries products to be sold to tourists in Juba and in Khartoum. It is proposed to include in the scope of activities of the Equatoria Trading Corporation, Juba, the organisation of these marketing outlets.
- Provision of handicraft instructors to train prisoners, as some prisoners represent good source of skilled workmanship. Training needs to be diversified and intensified in these institutions.
- Assignment in the Ministry of Commerce, Industry and Supply of a handicraft development officer who would be responsible for promotion of traditional industries and handicrafts.

The Regional Government may request UNDP/UNIDO/ILO to provide technical assistance: two experts are proposed for a period of 12 months each to advise on development and promotion of traditional industries and establishment of modern handicrafts workshops in Juba and provincial capitals.



Annex I

WORK PROGRAMME OF THE MISSION

No	Activity	Period
1	Briefing and studying background material at the UNIDO Headquarters, Vienna	3 August 1978 11 August
2	Field studies in Juba area and some provincial areas. Preparation of the preliminary report.	15 August 31 August
3	Field studies in Juba and some provincial areas. Preparation of a progress report.	2 September 20 September
4	Visit to UNDP in Khartoum, briefing with the Resident Representative, discussions with the relevant ministries and corporations on basic aspects of industrial development in the Southern Region, collecting data on specific large-scale projects to be implemented in the Southern Region	22 September 6 October
5	Field studies in Juba, discussions with respective Regional ministries, RDC and project representatives on results of visits in Khartoum regarding Central Government projects in the Southern Region. Evaluation of material from field studies and discussions on some basic conclusions of the survey with the counterpart ministry.	7 October
	During the same period, the Small-Scale Industry Specialist prepared his report on findings regarding small-scale industries and handicrafts for submission before departure on 18 October	17 October.

No	Activity	Period
6	Continuation of field studies in Juba and visits to respective ministries and Government agencies and UN experts in the field for further discussions on newly identified viable projects.	13 October
	Filed studies in the Upper Nile Province	2 November
7	Preparation of the final report and recommendations, discussions on results and conclusions from findings, advising on short-term and long-term development programmes and on specific industrial projects which require urgent coordination. Final briefing with H.E. the Minister of Commerce, Industry and Supply accompanied by the Directors and technical staff of the Ministry. Also, final briefing with the Director of Agriculture and his technical staff.	3 November
	Debriefing with the Deputy Resident Representative UNDP, Juba	18 November
8	Departure to Khartoum and preparation for the typing of the terminal report and its reproduction.	20 November
	Debriefing with the Resident Representative of UNDP	27 November
9	Departure to Vienna for debriefing at UNIDO Headquarters	28 November

Annex II

PERSONS CONTACTED

SOUTHERN REGION

JUBA

REGIONAL MINISTRY OF COMMERCE, INDUSTRY AND SUPPLY

H.E. Mr. Ezekiel K. Kodi	Ministor
Mr. David Wal	Director
Mr. Oliver Aligo	Head, Department of Commerce
Mr. Peter Ayuuk	Senior Inspector, Department of Supply
Mr. Lucr Deng Mareng	Head, Industry Department
Messrs Colombo, Nyobe Aricole and Tako	Geological Department
Mr. Lazarus Paul	Head, Department of Supply

REGIONAL MINISTRY OF FINANCE AND ECONOMIC PLANNING

H.E. Dr. Lawrence Wol Wol	Minister and Member of the Executive office, SSU
Mr. Stanislaus Asad	Assistant Director, Planning Department
Mr. Sopann Jambo	Director of Finance
Mr. K. C. Cheriyan	Planning Adviser (UNOTC)
Mr. S.P.S. Sodhi	Financial Adviser (UNOTC)

REGIONAL MINISTRY OF AGRICULTURE, ANIMAL PRODUCTION,
FORESTRY AND IRRIGATION

Dr. David Bassiound	Director
Mr. Natale Wanji	Planning Section
Mr. Amin Gala	Acting Director
Dr. Monoch Pabok Muorwel	Director of Animal Production
Mr. Bona Bak	Fisheries Department
Mr. Sakaria Deng Manger	Mongalla Agro-Industry Complex
Mr. Justin L. Lado	Assistant Director, Forestry Department

Mr. M. A. Barrett

Livestock Development Officer
MAFAO Dairy and Poultry Farm

REGIONAL MINISTRY OF WILDLIFE CONSERVATION AND TOURISM

Mr. Ibrahim D. Odeh

Assistant Director of Tourism

Mr. Henry C. Minga

Acting Director, Wildlife Conservation

REGIONAL MINISTRY OF INFORMATION AND CULTURE

Mr. Saverino M. Matti

Director for Culture

REGIONAL MINISTRY OF PUBLIC SERVICE AND ADMINISTRATIVE
REPORT

Mr. Yithaya Gordon Ayom

Assistant Director of Labour

REGIONAL MINISTRY OF COOPERATIVE AND RURAL DEVELOPMENT

H.E. Mr. Joseph Oduin

Minister

Mr. Joseph Ringlang

Acting Deputy Director

Mr. Casser Z. Moga

Director

Mr. Hans Schulz

Cooperative Banking Consultant (ILO)

REGIONAL MINISTRY OF EDUCATION

Mr. Yithak Wel Lund

Director

Mr. Leok ~~Sek~~ Ajak

Assistant Director

Mr. Joshua Dei Wal

Director of Planning

Mr. F. H. Carvey-Millians

Educational Planning Advisor (UNESCO)

**REGIONAL MINISTRY OF REGIONAL ADMINISTRATION,
POLICE AND PRISONS**

Mr. Jenocio Dahia Ondruman	Regional Commissioner of Prisons
Mr. J.R. Malik	Advisor in Public and Financial Administration (UNOTC)

REGIONAL MINISTRY OF HOUSING AND PUBLIC UTILITIES

H.E. Mr. Barucha Duro Wani	Minister
Sayed/Mathew Othow Dong	Director
Dr. Benodotto Nyikalio Akaro	Deputy Director HQ
Sayed/ Daniel Dhanho Yowing	Deputy Director, Building and Works
Sayed/ Kornelio Ota	Town Planner
Mr. Daniel Wani Lako	Office Manager, Minister's office
Mr. Tom Carter	Land and Town Planning Department

UNITY BANK

Mr. Ali Hama Fahal Manager

BANK OF SUDAN

Mr. Babiker Ismael Manager

REGIONAL DEVELOPMENT CORPORATION (RDC)

Mr. Arthur Alaudon Chol Chairman
Mr. Paul M. Lyon Director, Department of Commerce
Mr. E. Bol Kuanyin Project Director
Mr. George A. Kwana Secretary to the Board of Directors
Mr. Jacob Yoseph Acting Director, Development Division

RDC PROJECTS

Rotun Dairy Farm
Mr. H.N. Hwale Manager
Mr. Joseph Nyokabi Co-Manager

Brick and Tile Factory
at Ouba
Mr. Robin Baker Adviser

ITDG/IDD: Intermediate Technology Development Group

Ferro-Conent Boat Building
Project
Mr. Robert Diaz

HEAVY SERVICE TRAINING CENTER (HSTC)

Mr. R. R. Barclay

PROJECT DEVELOPMENT UNIT (PDU/Ministry of Agriculture)

Mr. F.H. Boss Project Manager, Crop Development
Project (Yei)

Mr. Alex Duncan
Mr. W. Mogga

SUDAN COUNCIL OF CHURCHES

Mr. Mark Johnson

HILL TOURISM CORPORATION

Mr. George H. Louero

Managing Director

EMATORIA TRADING CORPORATION

PRIVATE ENTERPRISES

EXCELLENCE

(a) Bashir Taha Humeiri

Owner

(b) El Fattah-Elia

GENERAL MILLS

(a) Bashir Taha Humeiri

Owner

(b) Tom Mohamed Ahmed

Owner

NAGAR CIGARETTE & TOBACCO FACTORY LTD

Mr. Vigilio Mero

Manager

EL TAYEB READY MADE CLOTHES FACTORY

Mr. Taher Ahmed El Hassan

Owner

FIELD TRIPS

WESTERN EQUATORIA PROVINCE

Yambio

Mr. Philip Paul	Commissioner
Mr. Zakaria Atsini	Executive Director
Mr. Amos Akol Tom	Acting Commandant of Prisons
Mr. T.M.S. Ouiliffe	Project Manager, Institute for Agriculture Technicians

Musasa

Mr. James Makim Gallo	Manager, Musasa Industrial Complex
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EASTERN EQUATORIA PROVINCE

Kapoeta

Mr. Bakumba Alexis Mbali Yanga	Assistant Commissioner
Mr. Ruami Talros	owner of lime kiln
Mr. Allan Kerse	Manager, Sheep Improvement Ranch

Torit

Mr. Helge Haugen	Acting Director, Norwegian Church Relief (NCR)
------------------	---------------------------------------------------

Katire

Mr. Stewart H. Togo	Co-project Manager, Intony Forestry Project
Mr. John Lister	ODM Civil Engineer, Gilo/Katire Road Improvement.

Yei

Mr. T.H. Bonso	Project Manager, Crop Development Project (PDU)
Mr. Nathaniel Henry Jada	Assistant Commissioner

Koror/Loka

Mr. Conn

Project Manager, German Afforestation
project

Mr. Michel Mastro

Foruman, Lake West Sawmills

Nonkalla

Mr. Heins

Soberi Construction Co. Represent-
ative, Nonkalla Hoisting Mill

Mr. Caspado Mori Tourbo

Manager, Cotton Ginnery

Mr. Karanga Abelol Sagi

Foruman, Cotton Ginnery

WEST BECHUANA PROVINCE

Bea

Mr. Genser Arkungelo

Executive Director, Bech. Province

Mr. Isaac Mor Duk

Asst. Conservator of Forest

Mr. James Ajith

Manager, Fruit Canning Factory

Mr. Hassan Mohamed Hurrem

Owner, Modern Carpentry Workshop

Mr. Anthony Chak Akoi

Brewery Engineer, The White Nile
Brewery

Mr. Mohamed Abulillah,

Owner, Ice Making Plant (under
construction)

Amal

Mr. Antonio Mulder

Project Manager, FLO/UNEP Land
Development Project

Mr. Tahir Mohamed

Blacksmith

BECHUANA PROVINCE

Mr. Tito Tupo Aibe

Executive Director

Tunz

Mr. Roberto Sigali

Overseas Technical Inspector for
Adriano Carlella, S.p.A.

Tunz Kona Project

Rumbek

Mr. Dhol Acuil Aleu
Mr. Sedit Ndoromo
Mr. Jacob T. Lupoi

Commissioner of Province
Agricultural Extension Officer
Principal Rumbek Agricultural
Training Centre

JONGLEI PROVINCE

Boz

Mr. Chan^o Ngu Awow

Executive Officer, J. Province.

UPPER MILE PROVINCE

Malakal

Mr. G.A. Rawson
Mr. R.R. McConnell
Mr. J.F. Ryan-Shaw
Mr. Coaser Arkangelo

Project Manager, Regional Fisheries
Training Centre
Master Fisherman " " " "
Boat Building Expert " " "
Executive Director, UP Province

Rank

Mr. Ekriano Ahyo Assai

Acting Assistant Commissioner, U.M.
Province

Melut

Mr. Edwards

UGLIS, Melut Sugar Factory

KHARTOUM

UNEP

Mr. Charles H. La Muriere

Resident Representative, Khartoum

Mr. G.H. Antippos

Deputy Resident Representative, Juba

Mr. P. Quonnell

Assistant Resident Representative,

Khartoum

Mr. S.A. Ursino

ALBU Project Coordinator, Juba

ZAO

Mr. Al-Saghaier

PAO Representative, Khartoum

USAID

Dr. Gordon Pierson

USAID Representative

Mr. Jim Holtzman

Programme Officer

UN/WHO

Mr. Watterson

UNEP

Mr. S. Patel

Leather Industry Adviser

Mr. A.A. Higgins

Project Manager, Improvement of the
Efficiency of the Public Sector
Industries

NATIONAL MINISTRIES

- a) **Ministry of Industry & Mining**
Mr. Mohamed Ali Hano, Executive Director, Minister's Office
Mr. Ahmed El Dawi, Director, Industrial Planning
Mr. M. Tharfeek, Cost Accounting (UNIDO)
- b) **Ministry of Agriculture, Food and Natural Resources**
Mr. Gasfar El Hassan, First Under Secretary
Mr. Tawfik Hashim Ahmed, Director General, Planning Administration
Mr. Gasmallah El Khidr, Chief Statistician
- c) **Ministry of National Planning**
Dr. El Fatih Eltigani, Director, Agricultural Sector
Mr. Yassin Al Rahman, Industrial Sector
Mr. D.S. Pearson, Team Leader/Senior Development Planning Adviser (IERD)
Mr. J. Prasek, Industrial Adviser (IERD)
Mr. A. Sattar, Agriculture Adviser (IERD)
Mr. B.A. Ashar, Fiscal Adviser (IERD)
Dr. M.A. El Shimawy, Manpower Adviser (IERD)
Mr. H. Ahmed, Transport Adviser (IERD)
Mr. Hassan Abdel Salam, Suliman Assistant Director General, Dept. Statistics
- d) **Ministry of Cooperatives**
Mr. Moh. Abdulla Gamar El Anbia, Acting Under Secretary
- e) **Ministry of Defence/Civil Aviation**
Mr. El Sir Hassan Bashir, Director

CORPORATIONS

- a) **Industrial Production Corporation**
Mr. Kamel Ahmed El Rahim

- b) Textile and Weaving Corporation
Mr. Mohamed Sayed Ali, Director
Mr. Shaker Basta Shaker, Executive Director, Production
Bureau Tonj Kenaf Project
Mr. Babiker Mohamed Ahmed Rahma, Manager, Planning & Follow-
up Dept.
- c) c) River Transport Corporation
Mr. Mohamed Osman, Planning
- d) Sugar and Distillery Corporation
Mr. Ahmed Gasm El Sayed
Mr. Babiker Ageeb El Sheikh, Project Manager, White Nile
Brewery (Wau)
- e) Food Industries Corporation
Mr. Khidr Osman Beshir, Manager

OTHER ORGANIZATION

- a) The Industrial Bank of Sudan
Mr. Tag El Sir, Deputy Director
- b) Khartoum Central Foundry
Mr. A. Rauf A. Atti, General Manager
- c) Sudan Airways
Mr. Ali Misa Omer, General Manager
Captain Gizouli, Director of Operations
- d) National Cooperative Union
Mr. Benjamin Majek Dra, President
- e) Food Research Centre
Mr. Galal H. El-Nour, Deputy Director
- f) Shell Chemical Company of Eastern Africa, Ltd
Mr. Osman Haimora
- g) Engineering & Transport International Co. Ltd.
Mr. Abdin N. Hassan

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Annex III

REPORTS AND DOCUMENTS CONSULTED BY THE MISSION

concerning industry
IN THE SOUTHERN REGION

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Annex IV

ACKNOWLEDGEMENTS

It is indeed a pleasure for the Mission to express sincere gratitude to the Government of the Democratic Republic of the Sudan and the Regional Government of the Southern Region for the assistance and cooperation extended by their representatives who were concerned with the work of the Industrial Survey Mission to the Southern Region.

The Mission acknowledge with thanks the assistance of the UNDP Resident Representative and UNDP staff, Khartoum, rendered during the assignment. Grateful acknowledgement is also made to the Deputy Resident Representative and his staff, UNDP Sub-Office, Juba for their daily assistance, cooperation and support throughout the Mission's stay in Juba.

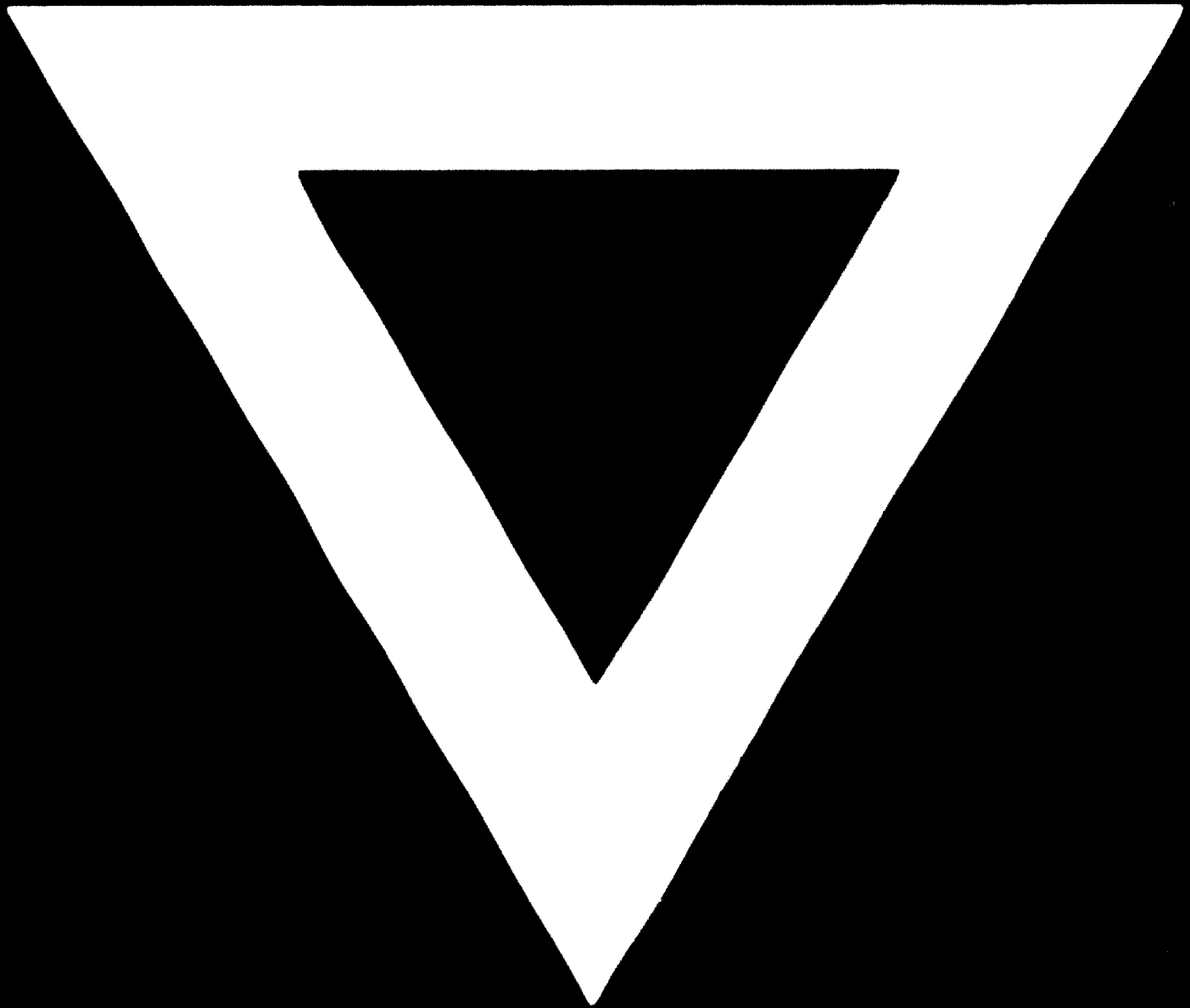
Special thanks are expressed to the representatives of the counter-part agency, Regional Ministry of Commerce, Industry and Supply for their close cooperation. The Mission would like to thank personally, the Director of Industry for his ever-ready support.

The Mission is grateful for the advice and guidance rendered by the UNIDO Field Adviser, Cairo, during their meeting in Khartoum.

Thanks are also due to UN experts in the field, representing UN Specialized Agencies, World Bank and other International Agencies with whom the Mission had the opportunity to exchange views on specific aspects of various projects in the country.

Last but not least, the Mission would like to extend its thanks to the Mission's counter-parts for their close cooperation and assistance during the field studies.

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