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**REPORT ON  
UNIDO CONSULTATION MISSION  
TO ERITREA**

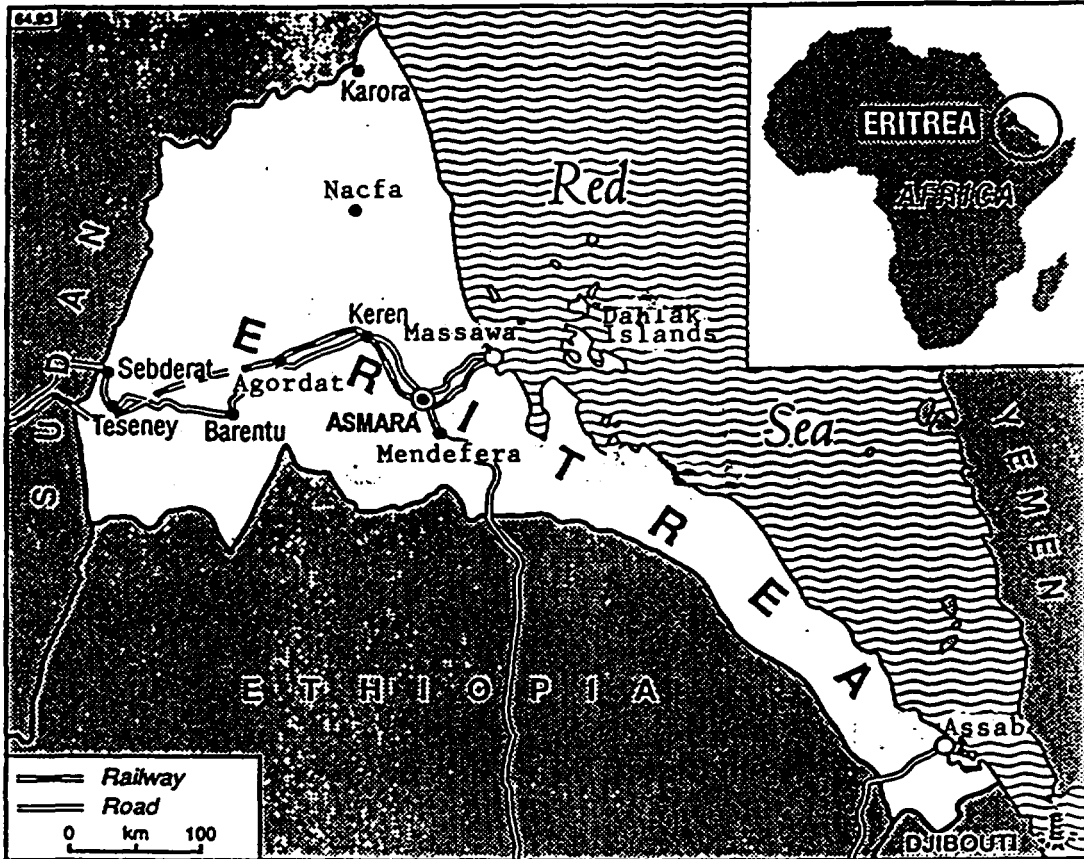
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Country Programmes and Funds Mobilization Division*

*December 1996*

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## MAP OF ERITREA



*The boundaries shown on this map do not imply official endorsement or acceptance by the United Nations Industrial Development Organization.*

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## **EXECUTIVE SUMMARY**

*In June 1996 the first major UNIDO mission to Eritrea materialized after this young African State had joined UNIDO in 1995 and following an invitation by the Government through the UNDP Resident Representative.*

*The purpose of the mission was twofold: Firstly, for UNIDO to hold an extensive policy dialogue and to learn about the industrial development objectives and constraints faced by the country. Secondly, the opportunity was taken to brief the Eritrean authorities about the reoriented UNIDO, its broad range of services with emphasis on the thematic priority programmes.*

*Overall, the dialogue entered into with UNDP, the Ministry of Trade and Industry (MTI), industry related institutions, enterprise managers, as well as on-site visits, gave the mission members a profound exposure to the reality of the Eritrean industrial sector, economy and overall Government policy. The mission team also got some insight into the rich resources with which Eritrea is endowed and which resources together with the visible determination of the people could re-establish the country as an industrial heartland of the Africa region. In this way, a solid base for elaboration and proposal of a need-based technical cooperation programme was laid.*

*In a round up session between the mission team, the highest officials of the Ministry of Trade and Industry and other institutional representatives, a list of priority programmes (annex III) was presented and its phasing (Chapter H) as suggested by the mission agreed upon. The analysis thereto is reproduced in Chapter G of the subject report, to put them into a time perspective and grouped according to thrust areas.*

*Phase I will look into several seed activities to materialize to a good part still in 1996 and early 1997, identifying and defining in more detail the larger programme frameworks and programme modules for subsequent UNIDO intervention. By then there will also be feedback on the overall Government priority list, endorsed by the Macro Policy Department and discussed with the UNDP Resident Representative for potential seed funding needed to proceed further with design and development work.*

*The highest priorities and chances for immediate funding were given to the strengthening of the Eritrean Standards Institute, then to sectoral studies for adoption of sub-sectoral development strategies, then to Human Resource Development in the Ministry of Industry, in various enterprises (in-plant training of trainers) and in the SMI sector. The SMI sector is further addressed by the request to rehabilitate the Medabir Industrial Estate. High priority was also accorded to industrial information and for the equal participation and integration of women in industry which will be taken up as soon as and to the extent that additional funds become available.*

*In Phase II, there will be the deepening of the programmes initiated in Phase I as well as introduction of additional portfolio relating to environment, investment promotion, support to the private sector, privatization, including industrial restructuring and educational curriculum development.*

*Overall, this first mission of UNIDO has gained an impression of the Government commitment and desire of all MTI officials and Eritrean citizens to do their share in rebuilding the economy of their country and particularly its industrial sector and to utilize the proven contacts, approaches, methodologies, tools and expertise of UNIDO, while doing this.*

*Besides this obvious important discussion on programmes and projects, the mission has not only facilitated mutual understanding, it has also made possible the so important human contact which is instrumental for the success of technical cooperation.*



## **A. INTRODUCTION**

### **(i) Background**

*Following the visit of the UNDP Resident Representative, Mr. Martyn Ngwenya, to UNIDO Headquarters in February 1996 for agency briefing and the subsequent invitation from the Government of Eritrea, UNIDO fielded a consultation mission to the country from 8 to 18 June 1996. The mission was funded from UNIDO IDDA funds under project: YA/RAF/96/X09 - High Level Consultation Mission to Eritrea.*

### **(ii) Purpose of Mission**

*The purpose of the mission which was the first major UNIDO mission to the young State of Eritrea, was two-fold:*

- (a) To hold an extensive policy dialogue with the national authorities on their industrial development objectives, the constraints they were facing and, on this basis, identify priority technical assistance needs that would be elaborated through a subsequent programme formulation mission for financing by UNDP and/or other donors and implementation by UNIDO.*
- (b) To brief the authorities on the new orientation of UNIDO, its broad range of services with particular emphasis on the thematic priority programmes and thus lay the foundation for future UNIDO programmes in Eritrea.*

### **(iii) Composition of Mission Team**

*The mission was composed of the following UNIDO staff members:*

*Mr. Felix Ugbor, Area Programme Officer, CFD/AFR, Team Leader  
Ms. Vera Gregor, Industrial Development Officer, HEPD/EDR  
Ms. Rosely Viegas-Assumpcao, Senior Industrial Development Officer, ISED/CHEM  
Mr. Geoffrey Mariki, UNIDO Country Director for Eritrea (based in Addis Ababa, Ethiopia)*

*Mr. Negusse Ogbe, Director, Department of Industry, Ministry of Trade and Industry, Co-ordinated the programme of the mission and led the discussions at the meetings. He was assisted by Messrs Hailom Negassi, Head Planning and Regulation Division and Mulugeta Hadish of the Industrial Development Unit both of whom accompanied the team to the various appointments.*

### **(iv) Mission Programme**

*On arrival, the mission held a briefing session with the UNDP Resident Representative and his colleagues. At the end of the mission, a debriefing session was also held with the UNDP. On the national side, the mission held extensive discussions on a wide range of issues with His Excellency Mr. Ogbe Abraha, Minister of Trade and Industry, his technical staff from the various units; officials of the Business Licensing Office, Eritrea Investment Centre, Eritrea Standards Institution, Eritrea Agency for Environment and National Agency for Privatization of Public Enterprises. The mission further held discussions with the Asmara Chamber of Commerce, the business community*

*and the National Union of Eritrean Women. The team also visited some key industries including the Mereb Textile Factory, Asmara Ceramics Factory and the Asmara Pickling Tannery. On the road to Massawa, the mission visited the Red Sea General Mill factory and in Massawa, the Massawa Salt Works, installations of the Ministry of Marine Resources and the Eritrea Cement Works. Annex 1 contains the meeting schedule followed by the mission.*

### **Acknowledgments**

*The mission team wishes to express its gratitude to His Excellency Mr. Ogbe Abraha, Minister of Trade and Industry for his guidance and support to the mission; to Mr. Martyn Ngwenya, UNDP Resident Representative for facilitating the work of the mission and to various officials of Ministries, public and private institutions including the Asmara Chamber of Commerce, the National Union of Eritrean Women as well as staff of the UNDP for devoting time to hold discussions with and providing information to the mission.*

## **B. COUNTRY BACKGROUND**

### **(i) History/Country Profile**

*Eritrea, located in the Horn of Africa - to the east of the Red Sea, is Africa's newest nation state. After thirty years of military conflict, the country attained independence on 24 May 1993 following the defeat of the Ethiopian military regime in 1991 by the Eritrean Peoples Liberation Front (EPLF, now The People's Front for Democracy and Justice) and a referendum in 1993. That development effectively ended centuries of foreign domination which at various times included the Turks, the Egyptians, the Italians (1889-1941) and more recently the British (1941-1952). Between 1952 and 1962, Eritrea was federated with Ethiopia but the country's annexation by the latter triggered off the armed struggle for liberation.*

*Following its hard-won independence, Eritrea now exhibits peace and stability, strong national unity and a concerted effort to transform the war ravaged, backward economy into a modern one. The Government consists of the legislative, executive and the judiciary arms. A new constitution is currently under preparation.*

### **Land Area**

*Eritrea's total land area is about 125,000 sq.km. and includes the Dahlak Archipelago – a group of about 365 choral islands lying off the coast of the port town of Massawa. The mainland itself can be divided into four regions – the central highlands, western low lands, mountainous north and the low lying plains along the Red Sea coastline. This varied topography accounts for the country's diverse climatic conditions ranging from temperate to hot and arid and which in turn has bestowed on Eritrea a variegated vegetation and diversity in its agricultural production.*

### **Population**

*The population of Eritrea is currently estimated at 3.5 million which is growing at the rate of 3.3% per annum. Of the 750,000 said to be living in exile as a result of the protracted war with*

*Ethiopia, 500,000 are in Sudan while 250,000 are in Ethiopia. Eritreans, made up of nine ethnic linguistic groups, are almost equally split between the Christian and Muslim religions. The urban population is estimated at about 20% of the national population -- mostly in Asmara, the capital city, which is located in the cooler highlands. The two other population centres are Massawa and Assab, the country's two main ports.*

### Natural Resources

*In terms of natural resources, Eritrea is endowed with resources it needs for the development of agriculture, industry and mining.*

*At the moment, agriculture comprising crop production, livestock and fisheries is the mainstay of the economy, contributing some 40-50% of the GDP, 70% of export earnings and employment for about 80% of the population. While the central highlands support the growing of staple grains like teff, millet, wheat, sorghum and barley, fruits as well as vegetables, the western lowlands is, in addition, conducive for maize and beans. Tobacco, coffee and tea as well as sisal are also grown in other regions. Since 1993, the area under cotton cultivation has been on the increase, making it possible for the textile industries to source most of this essential raw materials locally.*

*While agriculture presents a tremendous potential, its development is greatly hampered by the vagaries of the weather, lack of irrigation facilities, low productivity arising from the lack of equipment and inadequate supply of chemical inputs such as fertilizer and pesticides. In view of these and other associated problems including the land tenure system, Eritrea is currently only able to produce about 60% of the country's food requirements. The remainder comes from aid and imports. However, it is worthy of note that with loans from some agencies such as the International Fund for Agricultural Development (IFAD), technical assistance from others like FAO and donor support – both multilateral and bilateral, Eritrea is vigorously addressing the problems militating against agricultural production.*

*Livestock raising – mainly cattle, goat and sheep remains a major activity with good prospects for the leather and leather goods industries. The population of cattle as of 1994 was put at 2 million, goats at 4.5 million and sheep at 700,000. These represent an upward swing from the situation of the 1980s due to peace which has encouraged sedentary agriculture. While some 35% of the farming population combine crop production and livestock breeding, some 5% live entirely on livestock production. Eritrea is, however, still to reach its full potential in livestock production. Capital constraint and inadequate veterinary services are two major problems which have to be overcome through measures including provision of credits, improved husbandry practices, disease control, provision of abattoirs etc. Since livestock breeding is a predominant activity because of its profitability over crop production, Eritrea could expect to develop a robust, thriving and competitive leather and leather goods industry especially for exports.*

**Table 1. Production of citrus fruits and vegetables by State farms, 1991-1995 (Tonnes)**

	1991	1992	1993	1994	1995
Orange	432	3,033	3,858	3,528	3,549
Lemon	150	1,350	1,150	937	537
Mandarin	127	340	429	396	272
Graphe fruit	210	836	755	530	350
Grape vine	-	-	12	10	22
Papaya	1	1	34	638	655
Mango	-	355	317	470	417
Banana	-	-	1	25	17
Tomato	-	561	614	500	633
Tomato paste	533	570	486	586	1,000
Green pepper	-	5	18	32	16
<b>Total</b>	<b>1,453</b>	<b>7,051</b>	<b>7,674</b>	<b>7,652</b>	<b>7,468</b>

Source: Ministry of Agriculture, Department of Commercial Agriculture, Asmara

The coastline of Eritrea stretching over 1000 kilometres as well as 52,000 sq.km. within the country's continental shelf have endowed the country with tremendous marine resources which include shrimp, lobster, mackerel, snapper, groupa, anchovy and sardines. Indeed, Eritrea's coastal waters are reputed to be "among the most productive fishing grounds in the Red Sea", capable of producing up to 60,000 tonnes of fish and sea food annually against the current catch of 4,000 tonnes. The presence of two sea ports strategically located at Massawa and Assab have helped over the years to promote international trade with countries in Europe, the Persian Gulf, Indian and Pacific Oceans. The ports have also provided essential services such as pilotage, tugging, cargo handling and storage.

Eritrea also has mineral resources -- both metallic and non-metallic, although little is known at the moment about the extent of the deposits. Iron, gold, silver, copper, zinc, lead, nickel and chromium are known to be present. In addition, limestone, kaolin, basalt, marble, slate, granite, feldspar are being mined. The kaolin and silicate sands are said to be of very high purity, the latter already being used in glass production, while the former could support pharmaceutical production. Sulphur and gypsum are available in the country while exploration for petroleum (oil) and natural gas is in progress. The exploitation of these resources would, however, require huge capital investment which in turn would depend on the outcome of the on-going geological and other surveys.

Energy remains a major problem in Eritrea. At the moment, much of the electric power comes from thermal power plants while solar energy is being introduced in certain areas, especially for schools and hospitals. Most of the electricity produced is consumed in the urban centres while the rest of the country uses fuelwood with the attendant consequences on environment. The Eritrean Electric Authority operates an interconnected system between Asmara, Massawa and the surrounding areas. Efforts are, however, being made to modernize and expand both electricity and water supply.

**(ii) Macro Policy**

*Following the victory of the EPLF over the Ethiopian military regime, the Provisional Government of Eritrea inherited a very weak economy with much of the industrial, agricultural and infrastructural base destroyed. Because of the extensive damage on its land, water and forestry resources, Eritrea also faced serious environmental problems at independence. Furthermore, the long years during which the war was fought resulted in the deterioration of the various institutions (including social and health services) especially when they were oriented to a command economy under the Derge. In short, Eritrea's development stagnated during the period of military conflict with Ethiopia, making the country one of the poorest LDCs in the Africa region with GDP per capita estimated at US \$130.*

*To deal with the immediate problems of resuscitating the economy, the Provisional Government of Eritrea, soon after the liberation of the country, initiated a major programme to rehabilitate the economy and society. With the help of the World Bank and other donors, the Government in 1991, launched a Recovery and Rehabilitation Programme (RRP) through which resources were obtained for essential inputs and reconstruction of the economic infrastructures. A component of the RRP was an Economic and Financial Management Programme which aimed to build up the basic capacity for economic management by the Government.*

*For the long term, the authorities examined "in-depth the structural and systemic factors hampering the development of Eritrea" and, on this basis, developed in 1994, an appropriate Macro Policy framework which is administered/monitored in the Presidency. The center piece of the medium to long-term development strategy enunciated in the policy document is the establishment of an efficient, outward-looking private sector-led market economy, with the public sector largely restricted to playing a pro-active role in stimulating private sector activities. "The overriding development objective is the creation of a modern, technologically advanced and internationally competitive economy within the next two decades". Other objectives include:*

- *Improved agricultural production through the development of irrigated agriculture, and by enhancing the productivity of peasants, pastoralists and agro-pastoralists;*
- *Developed capital and knowledge-intensive and export-oriented industries and services;*
- *An upgraded and technologically improved informal sector;*
- *A developed tourism sector and high-grade conference and convention facilities;*
- *A competitive international financial center;*
- *A developed and systematic public health care system;*
- *Broad-based education incorporating widespread dissemination of skills and languages and extensive human capital formation;*
- *An efficient social welfare and safety net system;*
- *An upgraded and safe-guarded environment that is free from pollution;*
- *A decentralized and democratic political system;*

- *An internally peaceful and stable nation at peace and in harmony with its neighbours; and*
- *A free and sovereign state where human rights are respected.*

*In line with the Macro Policy a number of important reforms have been introduced. A few examples will suffice.*

- *With regard to fiscal policies, some changes have been effected consistent with the Government's aim of creating a free-market economy. In particular, tax reforms were introduced. Aspects of the reforms aim to improve efficiency in resource allocation; to promote equitable distribution of income, enhance external competitiveness, and foster savings and private investment.*

**Table II. *Estimates of Sectoral Composition of GDP, 1992-1994***  
(Percentage)

	1992	1993	1994
<i>Agricultural sector</i>	28.5	13.1	19.0
<i>Agricultural and livestock</i>	23.7	9.4	15.8
<i>Forestry and fishing</i>	4.8	3.7	3.2
<i>Industry</i>	19.3	20.7	18.1
<i>Mining and quarrying</i>	-	-	-
<i>Manufacturing</i>	8.7	9.5	8.4
<i>Handicrafts and small industry</i>	4.0	4.4	3.9
<i>Electricity and water</i>	1.3	1.4	1.3
<i>Building and construction</i>	5.3	5.4	4.6
<i>Distribution services</i>	34.1	43.2	43.5
<i>Trade, wholesale and retail</i>	20.9	27.0	30.1
<i>Transport and communications</i>	13.2	16.2	13.4
<i>Other services</i>	18.1	23.0	19.3
<i>Financial services</i>	1.9	1.7	1.8
<i>Dwellings and domestic services</i>	2.7	2.5	2.1
<i>Public administration and defence</i>	8.7	14.0	10.8
<i>Social services</i>	2.5	3.0	3.2
<i>Other</i>	2.2	1.9	1.6
<i>GDP at current factor cost</i>	100.0	100.0	100.0

*Source: IMF/Eritrean authorities.*

- *The trading regime has been liberalized as a result of which Eritrea now has an open economy. Export marketing has, as a consequence, also been liberalized. Similarly price control on commodities has been removed.*
- *The tariff regime has equally been rationalized. Duties have been scaled down from around 230% to 50%.*

- *A new investment code designed to promote private investment (domestic and foreign) has been promulgated.*
- *The exchange rate is determined by the forex auctions in Ethiopia since Eritrea maintains the birr as its legal tender.*
- *However, for the banking and financial systems, some legal, institutional and regulatory framework have been finalized. The Bank of Eritrea is already functioning.*
- *Bilateral trade agreements have been signed with Ethiopia in order to foster trade and regional integration.*
- *Business licensing is being issued without much bureaucracy, etc.*

### ***(iii) Industrial Sector: Evolution and Current Situation***

*The development of Eritrean industry goes back to several decades ago when the country was a colony of Italy. In the 1930s Italy made deliberate efforts to set up offshore manufacturing plants in Eritrea not only because of the campaign to create an "Italian East Africa" but also because the possibility of a Second World War was real. It therefore, became necessary to have an alternative source of consumer goods for its local market and for export to neighbouring Middle Eastern countries. By the end of that decade, Eritrea had developed an industrial outfit perhaps unmatched at the time in much of Sub-Saharan Africa. It is reported that as at 1930, there were over 730 registered companies and as many as 2,200 trading and construction companies operating in the country. The industrial complexes that were set up included, for example, five flour mills, two pasta factories, three bakeries, a canned meat factory, two tanneries, a vegetable fibre plant, a button factory, a cement factory, two salt works, a soap factory, an edible oil factory, a retreading plant, a liquor factory, etc.*

*It is noteworthy that all these factories belonging to Italians were located in one area i.e. along the Keren-Asmara-Massawa axis. This location was dictated by "proximity to market, sources of raw materials and transportation facilities".*

*As would be expected, when eventually imports from Europe to East Africa were interrupted during the Second World War, Eritrea was equal to the task and indeed supplied the Italian market with industrial goods.*

*In 1941, the British supplanted the Italians in Eritrea but they made few new investments. Their preoccupation was to satisfy local consumption and contribute to the war efforts of the Allied Forces in the Middle East. In the boom years of the early 1940s, new investments were made by Italians in industries such as ceramics, glass works, metal fabrication, button production, etc. – thereby making Eritrea the industrial heartland of Africa. As of 1944, some 1,610 enterprises employing 26,954 Eritreans and 5,609 Europeans were flourishing.*

*Unfortunately, this growth and revitalization were short-lived. With the end of the Second World War, the "cushioned growth" came to a standstill. The existing industries started to face stiff competition from the export industries of the industrialized countries. Furthermore, lack of reinvestment and maintenance led to deterioration and soon many factories were shut down.*

*The prospects deemed further when Eritrea was federated with Ethiopia (1952-1967) and was subsequently annexed. The imposition of a command economy which resulted in the nationalization of private property including land, industries and housing compounded the situation. As the liberation war intensified, the industries experienced serious shortages in foreign exchange, raw materials, spare parts and working capital.*

*The period of the Derge is therefore noted as one during which the decline of the industrial sector was exacerbated. Production fell well below capacity.*

*By 1991, when hostilities ceased, most Eritrean industries were only able to operate at just one-third of their installed capacities. They were also heavily in debt largely due to Ethiopian financial authorities. The new administration inherited 42 factories in the public sector and some 650 small scale enterprises in the private sector, with the former producing about 85% of total industrial output. The factories in the public sector which formerly belonged to private Italian investors consisted of light manufacturing units using outdated technologies and equipment in a severe state of disrepair. With the cessation of hostilities, the Government took measures to resuscitate and reinvigorate the industries. In this connection, the assistance provided through the Recovery and Rehabilitation Programme and other sources proved to be very useful.*

*Given the developments outlined above, the Eritrean industrial structure is currently characterized by large and medium scale manufacturing industries which are in the public sector. In contrast, the industries owned by the private sector are micro and small scale operations. Jointly, however, they are producing an impressive array of industrial goods. Indeed, the production structure is relatively diversified in comparison to some other Sub-Saharan African countries. There is also a high degree of geographical concentration since most of the industries are within the capital, Asmara.*

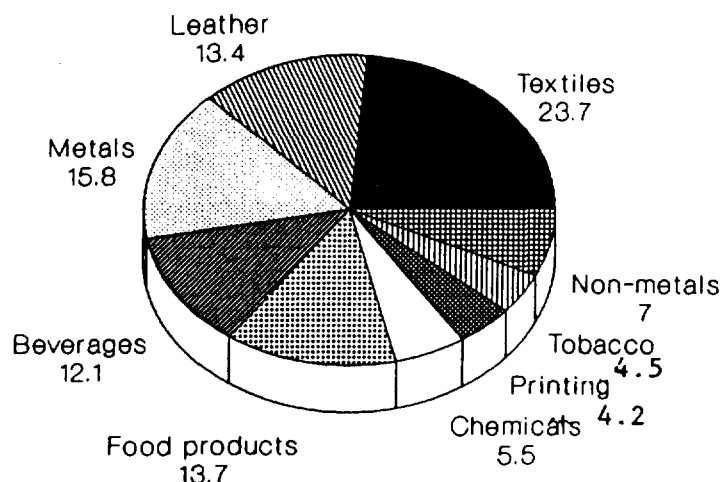
*Based on IMF estimates, the industrial sector accounted for 18% of the GDP in 1994. The beverage sector is the largest contributor, accounting for 23% of aggregate activity over the 1992-1994 period. The food sector contributed 19% while the chemicals sector's share was 18%. Between 1992 and 1993, industrial activity expanded by a robust 35%, with the value of output rising to some birr 289 million in 1993.*

*While relevant data is scarce, it is estimated that the state-owned manufacturing firms provided employment to some 10,500 as at December 1994, while licences were issued to about 6,915 private people operating small scale enterprises. This excludes small family concerns. Of the number employed, the textile industry accounted for 30% of the total, while food accounted for 41%, metal products 12.5% and leather sector 12.2%.*

*It should be noted that whereas Eritrea prior to the war was able to produce and export beer, cement, textiles, shoes, salt, glass and processed food, exports are currently limited to leather products, textiles and salt mainly to Ethiopia.*



**Figure I**  
**Composition of Exports, 1993**  
**(Percentage)**



### **C. CONSULTATION WITH THE MINISTRY OF TRADE AND INDUSTRY (MTI)**

#### **(i) Opening Session**

*The work of the mission team started on 10 June 1996 with a brief session presided over by His Excellency, Mr. Ogbe Abraha, Minister of Trade and Industry who warmly welcomed the UNIDO team to his Ministry. Present at the session were Mr. Martyn Ngwenya, UNDP Resident Representative, Ms. Saba Mebrahtu, President of the Eritrean Women in Business, Heads of the Ministry's parastatals and the technical staff of the Ministry.*

*The Honourable Minister stated that the Government of Eritrea attached the highest importance to industrial development and in view of this, efforts were being made to promote industry and trade and to facilitate/encourage private sector involvement – in line with the Macro Policy. In order to further define the role of the business community, a National Business Conference and Exhibition had been held in Asmara in December 1995. For the Government, its role had been confined to that of improving the enabling environment.*

*Eritrea's natural resource endowments, its strategic location as the gateway to the COMESA and Europe as well as the resourcefulness of its people were mentioned as advantageous to industrialization. In view of these and other reasons, export-oriented industries would be*

encouraged. By implication, Eritrean products must be of the highest quality in order to be competitive in the international markets.

The Minister then expressed delight at the opportunity to access technical assistance from UNIDO which Eritrea joined in June 1995. He also thanked the Resident Representative for making the contacts with UNIDO in connection with the mission. In the next few days, he continued, the areas for UNIDO's assistance would be defined but expected it would include, *inter alia*, assistance to SMEs in view of the large number of ex-combatants now turned civilians. He finally wished the mission well after which Mr. Negusse Ogbe, Head, Department of Industry, continued to chair the meeting including meetings on other days.

In response, the mission team thanked the Minister for the invitation extended to UNIDO to send the mission. Being the first major mission of the Organization to Eritrea, the team expected to hold extensive discussions with a view to ascertaining the industrial development objectives of Eritrea, constraints militating against their attainment and to agree on priority areas for UNIDO's technical assistance programmes. The mission would therefore lay the groundwork for future collaboration between Eritrea and UNIDO. The team expressed appreciation for the reception it received from the officials of the Ministry and UNDP on arrival and looked forward to a fruitful mission. The Minister was assured that various sections in UNIDO were eagerly awaiting the outcome of the mission and had provided information materials to be delivered to the Ministry.

## **(ii) Summary of Discussions**

What follows reflects the summary of the discussions following series of meetings within and outside MTI and in accordance with the programme prepared for the mission. The report also draws from relevant UNIDO and MTI documents where appropriate. The list of those with whom discussions were held is in annex III. It should be pointed out that most of the meetings were chaired by Mr. Negusse Ogbe, Director, Department of Industry with the assistance of Mr. Hailom Negassi, Head Planning and Regulation Division.

### **(a) General Overview of MTI and Activities**

The officials of the Ministry of Trade and Industry (MTI) indicated that in 1991 when the war ended, two distinct departments i.e. Trade and Industry – were established but these were later merged along with Tourism. In 1994, Tourism was again separated thus leaving the present establishment as the Ministry of Trade and Industry (MTI) with the overall responsibility of guiding and masterminding the industrialization of Eritrea.

In line with the national development objective of creating a modern, technologically advanced and internationally competitive economy, MTI has as its main objectives to:

- Promote economic growth and healthy balance of payments;
- Expand access to sources of raw materials, technology and expertise;
- Remove domestic market limitations for marketing of outputs;
- Improve employment opportunities;
- Enhance efficiency in production and competitiveness in the price and quality of commodities and services;

- *Enhance efficiency in production and competitiveness in the price and quality of commodities and services;*
- *Promote regional co-operation and economic integration;*
- *Promote direct foreign investment;*
- *Develop capital and knowledge-intensive, export-oriented industries and services;*
- *Promote an upgraded and technologically improved informal sector;*
- *Promote an upgraded, safe environment that is free from pollution;*
- *Promote balanced nation-wide development; promote exports; and*
- *Privatize state enterprises and assist the private sector to play an important role.*

*Within these broad objectives, which have been articulated in a Strategic Plan document (December 1995), the Department of Industry prepares industrial policies and strategies; lays down regulations and directives concerning industrial certification, safety and environmental policies; promotes and assists the development of small scale, handicraft and cottage industries; develops and undertakes training programmes in industrial activities, etc.*

*With regard to industrial policies and strategies, the officials indicated that Eritrea's industrialization is being pursued with a view to achieving certain object This is achieved through studies of environmental protection and industrial safety policies of other countries with a view to assisting in the preparation of regulations appropriate for Eritrea. ives including:*

- **Balanced Industrial Development** *throughout the country through encouraging industrial dispersal. For this purpose studies are carried out in different parts of the country to determine the economic opportunities for promotion;*
- **Development of SMEs** *which provide employment, utilize local resources and generally promote economic development. The Ministry gives the necessary encouragement including assistance in the establishment of SME associations and industry clusters, helps to improve access to loans and training;*
- **Environmental Protection and Safety**. *Awareness seminars are also provided for industrial operators;*
- **Human Resources Development**. *For this, the Ministry's concern has been to ensure that the educational policies and curricula would lead to the availability of the necessary manpower for industry – such as technicians, accountants, engineers, economists, experts/specialists in different fields, etc. Advantage is also being taken of training programmes provided by agencies like UNIDO, ILO, ITC, NGOs, etc.;*
- **Privatization of State Enterprises**. *For this, the overriding concern is to ensure an orderly and speedy transfer of state enterprises to the private sector as well as the maintenance of competitive and healthy business environment between state and private enterprises;*

- **Regional Integration** through the promotion of trade and other forms of co-operation, especially within the COMESA.

The officials went on to give an account of the **historical evolution of the industrial sector** in Eritrea, emphasizing the fact that presently the medium and large scale state-owned enterprises numbering about forty account for a large percentage of industrial production in the country. Following the efforts made through the Recovery and Rehabilitation Programme (RRP) to rehabilitate the various industrial establishments (both public and private), much of the internal demand for consumer goods are being met. Some of the state-owned enterprises that benefitted from the RRP include the Eritrean Steel Sheet Factory, Agordat Dum Fiber Plant, Tomkomba Tobacco Plantation, Massawa Salt Works, Eritrean Cement Plant, Asmara Brewery, etc. The RRP has proved to be very beneficial. Based on recent evaluation, there is an increasing trend in capacity utilization --- in some cases up to 80%.

Currently, the **local manufacturing industries provide Eritreans with products ranging from food (flour, canned food, vegetable oil, butter, ghee, etc.), beverages (beer, mineral water, etc.), tobacco, textiles, leather products, metal products (furniture, vehicle body building, wire, bed spring, etc.), printing, non-metallic products (glasses, cement, mosaics, bricks, marble, etc.) to chemical products like detergents, cosmetics, matches, candles, batteries, retreaded tyres, plastic materials, etc.**

In a deliberate effort to encourage private sector participation in the industrialization process, the Government has embarked on a **privatization programme** and, in order to carry it through, has established a privatization agency. While the state does not plan to be in competition with the private sector, it would seek to ensure the flow of investments into strategic industries. It was observed that while the state is taking steps to reduce its direct involvement in the productive sector, the number of private sector enterprises has grown recently to about 1,270.

The officials mentioned that even as efforts have been made to revive most of the industries, the manufacturing enterprises still face problems of inadequate infrastructures especially light and water. While foreign exchange was made available under RRPE support programme for the importation of spare parts, the country nevertheless continues to contend with a general scarcity of foreign exchange. At the moment vertical integration and linkages between industries are extremely limited.

In view of the foregoing it was the general view that adequate attention needs to be paid to up-gradation of technology and skills, quality and standardization, as well as the development of intermediate inputs for the existing industries in order to create the necessary linkages and integration.

Nevertheless, as part of its policies and strategies, the Government aims in the short and medium term to:

- Promote the growth of light manufacturing industries, initially, mainly agro-based industries. The desire is to create the necessary industry – agriculture linkage, using modernized methods to produce competitive products;

- *Promote the development of capital and knowledge intensive export-oriented industries such as high-tech industries. For this, joint ventures and direct foreign investments would be encouraged and promoted;*
- *Conduct research with a view to identify problems, opportunities and status of manufacturing enterprises and to provide any assistance necessary to speed up industrial growth;*
- *Take measures to upgrade and technologically improve/enhance the informal sector where a large percentage of people have currently operating;*
- *Maintain effective contact with national, regional and international industrial promotion agencies such as UNIDO, COMESA, Chambers of Commerce, etc.*

*In terms of organizational structure, the officials disclosed that the Ministry of Trade and Industry (MTI) is divided into two – the Department of Trade and the Department of Industries. The latter, in turn, has two divisions including Industrial Development and Promotion as well as Policy and Regulations Divisions. The common services located in the office of the Vice Minister include legal, internal audit, administration, publications, planning and statistics and provincial liaison. The Minister directly oversees matters related to the Grains Board, Eritrean Investment Centre, the Eritrean Standards Institution and the Privatization Agency. Please see Annex IV for the organogram.*

*With regard to the staff disposition of the Ministry, it was indicated that out of a total requirement of 151, some 118 officials are in place, leaving a shortfall of 33 – a higher percentage of which is for the Department of Industry. To make up for this shortage in staff, the various parastatals have been granted a large degree of autonomy with representatives of MTI on their boards. In addition, MTI had developed very healthy relationship and interaction with the private sector which is represented by the Asmara Chamber of Commerce. More importantly, Government uses the task force approach for in-depth examination of policy and other important issues especially where national/inter-ministerial consensus is desirable.*

*So far, MTI has, with the help of ITC, ILO and PRODEC (Finland) organized training programmes for staff of the private sector and state enterprises on topics such as integrated export management, foreign trade development, marketing and market research, entrepreneurship and business management, evaluation and monitoring of public enterprises and strategic planning.*

*With regard to major problems and constraints confronting the Ministry in carrying out its statutory functions, the officials mentioned the following:*

- *Shortage of manpower, especially skilled manpower for overall industrial planning;*
- *Lack of capacity to formulate industrial policies, to review and improve regulations;*
- *Inadequate knowledge for assessing technology being imported into the country and promotion of endogenous technology;*
- *Lack of capacity for the identification, preparation, development, monitoring and evaluation of industrial projects;*

- *Inadequate training/exposure on industry related issues;*
- *Lack of industrial information and statistics, etc.*
- *Lack of resources to enable the finalization, printing and circulation of the Strategic Plan Document.*

#### Response by UNIDO

*The mission team, in its initial response, provided information on UNIDO in terms of the background to its establishment and its unique mandate as the specialized agency of the United Nations dedicated to promoting and accelerating industrialization in developing countries and countries in transition to market economies. Details of the reform process initiated in 1993 and reorientation of the Organization were provided including the five objectives adopted at the Fifth General Conference held in Yaoundé, Cameroon and the recently approved seven thematic priorities for the 1996-1997 biennium viz:*

- *Strategies, policies and institution-building for global economic integration*
- *Environment and energy*
- *Small- and Medium-scale enterprises: policies, networking and basic technical support*
- *Innovation, productivity and quality for international competitiveness*
- *Industrial information, investment and technology promotion*
- *Rural industrial development*
- *Africa and least developed countries: linking industry and agriculture.*

*Working at three levels – policy, institution and enterprises, UNIDO acts as a focal point for industrial technology, honest broker for industrial co-operation, centre of excellence on industrial development issues and global source of industrial information.*

*Furthermore, information was provided on UNIDO's major programmes and services including industrial policies and private sector development; investment promotion; technology for competitiveness; environment and human energy; human resources development; women in industrial development; enterprise restructuring and privatization; small- and medium-scale industry and rural industrial development; quality, standardization and metrology; industrial statistics and information.*

*Mention was made of the special programmes more especially the Industrial Development Decade for Africa (IDDA) and the Alliance for Africa's Industrialization (AAI). The fundamental aims of the programme for the Second Industrial Development Decade for Africa (IDDA) are to assist the countries of the region in redressing poverty and dependence and achieving self-reliance and self-sustainment. The programme is directed towards industrialization as a means of producing the goods and services that Africa needs, based on domestic strengths and factor inputs. With these goals, industrialization is to recognize the links with agriculture and, equally, to take environmental considerations into account. It was indicated that in keeping with the priority on Africa, the Alliance sums up the essential elements of UNIDO's support to the region's industry to increase its productivity and international competitiveness and to expand its production capacity in line with*

emerging demand in domestic, regional and international markets. Thus, AAI seeks to enhance the attainment of the objective of the IDDA.

The mission team also provided information on the five high impact programmes resulting from the reform process and which relate to:

- *Integrated advisory services for industrial policy formulation and competitiveness strategies;*
- *Introducing new technologies for abatement of global mercury pollution;*
- *Global network for the promotion of competitive and innovative small and medium industrial enterprises;*
- *An application of quality principles to the food processing sector in 7 sub-Saharan countries; and*
- *Women entrepreneurship development: for a more meaningful and visible contribution to industrial development.*

The various organs and composition of UNIDO, the secretariat and the field representation were explained. As part of the reform process, the structure of the Organization has been streamlined and now consists of six Divisions i.e. Country Programmes and Funds Mobilization Division, Research and Publications Division, Human Resource Enterprise and Private Sector Development Division, Industrial Sectors and Environment Division, Investment and Technology Promotion Division, and Division of Administration each headed by a Managing Director. The overall head of the Organization, Mr. Mauricio de Maria y Compos, is the Director General.

The criteria for ensuring the highest quality of programmes and UNIDO's mode of operation were highlighted. In this connection, it was explained that every project was subjected to the test of relevance, cost effectiveness and sustainability by the Programme and Project Review Committee of UNIDO. Appropriate documentation were provided on the various programmes and topics covered.

(b) Industrial Regulations

Continuing their brief, the officials of MTI discussed industrial regulations as they relate to the creation of enabling environment for industrial development. In this connection, the Macro Policy document earlier, was noted as having set out overall policies and strategies, including those on industry. Mention was made of some of the regulations discussed hereunder.

**The Business License Office:** It was indicated that the Business License Office (BLO) was established in April 1995 under Proclamation No. 72/1995 to operate as a one stop shop for the registration of enterprises and issuance of business licenses, including industrial licenses. For manufacturing enterprises owned either by foreign or local investors, the Eritrean Investment Centre, in consultation with the Department of Industry, facilitates the issuance of the manufacturing license. The hall mark of the BLO is its speedy and convenient mode of operation. It is also noteworthy that BLO operates as an autonomous body.

*With regard to investment regulations, the provisions were designed to facilitate investment through the concerned office operating as a one-stop agency for the issuance of needed approvals. Furthermore, attractive investment incentives are being offered. In this connection, capital goods, intermediates, industrial spare parts and raw materials attract only 2% duty; exports are exempt from export taxes and sales tax paid for export products are refundable.*

*As an open economy, there is no discrimination between local and foreign investors. Foreigners are allowed to own and run enterprises in the country without any fear of expropriation. Moreover, Eritrea subscribes to investment guarantees including the Multilateral Investment Guarantee Agreement (MIGA).*

*On the issue of income tax, tax on corporate profit is limited to 25-35% while personal income tax ranges from 2-38%. There is, however, no tax on dividends and any loss incurred during the first two years of operation by an investor may be carried forward for three consecutive years. Investors are allowed to retain 100% of foreign export earnings in foreign exchange in Eritrea while remittances of net profits and dividends are allowed. Sale or transfer of shares is also permitted.*

*With regard to standards, metrology and environment, the provisions of the appropriate laws apply (see Chapter D for details). Eritrea also abides by the labour laws enunciated by the ILO.*

*In concluding their brief on the subject, the officials indicated that in some cases such as the regulations on standards and quality or environment, the enabling guidelines and regulations were still under preparation. Nevertheless, for MTI to put in place or contribute to certain legislations, the capacity of the staff needs to be enhanced through appropriate training and seminars. The Ministry is also in need of information on practices and regulations in other countries.*

*In the discussion that ensued, the mission team extolled the openness in the economy and the emphasis placed on investments, especially investments related to the manufacture of export products. The mission also discussed the changing role of Government in the industrialization process. Given the changes in the global environment, governments were increasingly expected to devote more attention to policy articulation/formulation, private sector development, provision of infrastructures and, generally, establishment of an enabling environment. To be effective in these functions, Ministries must be abreast of global developments such as the Uruguay Round of Agreements, achieving competitiveness through technology innovation, total quality management including ISO 9000, etc. The collection, analysis and dissemination of information were also considered vital to modern management practices. In answer to a question, it was indicated that the authorities were reviewing the land tenure system in Eritrea as a way of further improving the environment for industrial investments.*

### *(c) Selection and Transfer of Technology*

*The attention of the mission was drawn to the provisions of the Macro Policy which states that the objective of the science and technology policy is to keep Eritrea abreast of developments in production, transport and service technologies in order to assure an upgraded and modern economic system that is competitive in the world. It states further that these policies are designed to promote replacement of existing obsolete stock of capital in the country, introduce continuous programme of exposing the population to new methods and processes, encourage R&D efforts in selected sectors and promote technology transfer considered suitable to Eritrea needs.*



*For the application of these policies, the MTI has responsibility to collect information on existing and emerging technologies, to evaluate these and disseminate the information to the public. Based on its research and studies, the ministry is expected to identify technologies considered suitable for the needs of Eritrea. More importantly, the ministry has the mandate to prepare guidelines and criteria for the selection of technologies. On the basis of these guidelines, the ministry grants approvals for technology transfer agreements.*

*At the moment, a small unit, newly created in the ministry, is undertaking the assignments with a very limited staff whose responsibilities cover assessment, evaluation, transfer, acquisition promotion of technologies, etc. The country does not yet have a separate institution undertaking R&D functions nor a centre that trandles issues relating to technology management and innovation..*

*In view of the fact that as at 1930, Eritrea already was the industrial heartland in the Africa region, concern was expressed about the age of the machines in the manufacturing industries. Even at the time of their installation, a good number of those machines were relatively old and, for all intents and purposes, now obsolete.*

*Given the tremendous changes and evolution in technological developments over the past years and the need to produce high quality and competitive goods, these obsolete machines in most of the industries are in dire need of replacement or modernization/ upgradation. In this connection, the Macro Policy requires that the technology already transferred to the country should be assessed in terms of their social, economic, environmental and health impacts, their adaptability to local conditions and suitability, bearing in mind the local skills and resources. It is envisaged that on the basis of the information collected, future technology transfers will be regulated. Indeed, with regard to investment, the Macro Policy also seeks to promote the transfer of up-to-date technology that would assure competitive edge to Eritrean produce.*

*The officials pointed out that the Ministry is grossly ill-equipped to effectively discharge the various functions related to technology transfer. It was also recognized that adequate and current information on technology transfer issues (e.g. technology transfer and development, evaluation, selection, intellectual property protection, etc.) are key factors in undertaking those functions. To this end, the ministry is keen to study the experiences of and practices in both developed and developing countries; to build the requisite capacity of the Ministry through collection of books and journals and to upgrade the knowledge and skills of the staff through training courses and seminars.*

#### *Response by Mission Team*

*In the ensuing discussion, the mission team explained in great detail UNIDO's programme relating to technology transfer as well as the tools for its implementation. It was pointed out that in most developing countries, buyers of technology lack the professional skills to (a) select the technology suited to their local conditions and (b) acquire the technology on favourable terms. In majority of the cases they were also unaware of the latest advances in technology, the emergence of new technologies and changing approaches to technology transfer and development.*

*In response to the above situation, UNIDO assists institutions and enterprises in building up and/or strengthening capacities to handle technology transfer operations and the establishment of joint ventures. The tools used include advisory services, technical co-operation projects, training programmes and seminars, technical documentation, promotion of centres of excellence, studies and*

*guidelines. The training programmes are normally offered to government officials, entrepreneurs and professionals who implement technology transfer, conduct negotiations or evaluate transfer agreements. The long experience and know-how of UNIDO on the subject have been consolidated in a "Manual on Technology Transfer Negotiation" which covers several topics including, for example, technology transfer and development, technology market, intellectual property protection, funding/evaluating and selecting technology, negotiation, contracting (drafting, payments), guarantees and warranties, etc.*

*UNIDO's programme relating to technology management, especially technological innovation for sustainable competitiveness, was also explained and relevant documentation provided. Information was also provided on the build-operate-transfer (BOT) mechanism for infrastructural development as well as the intechmart organized for sellers and buyers of technology.*

*Attention was drawn to UNIDO's involvement in advanced technologies – genetic engineering and biotechnology, microelectronics, informatics, new materials, new energy technologies and marine industrial technologies. In order to promote international and regional networks and centres of excellence, UNIDO already established the Centre for Genetic Engineering and Biotechnology (Italy and India), the International Centre for Science and High Technology (Italy) and the Centre for the Application of Solar Energy (Australia).*

*The point was underscored that in general, the main priorities of UNIDO's programme on technology for competitiveness mainly concern advice on technology policies and strategies, building up of domestic technological and innovation capabilities and provision of institutional technological support to SMEs and for rural industrial development.*

*(d) Promotion of SME*

*In discussing the promotion of SMEs in Eritrea, the officials of MTI pointed out that given the free and competitive environment in the country, the private sector is expected to play the lead role in the economy. Through its proclamation on investment, Government has provided a number of incentives for SME development. Furthermore, the Government is committed to privatization.*

*Based on the need to avoid overcrowding and market saturation of traditional trades and sectors as well as the need to increase the absorbing capacity of the traditional sectors, the Department of Industry is keen to introduce additional policies, taking into account identified potentialities and market opportunities. In this connection, the SME policies are designed to:*

- Facilitate economic growth*
- Create employment*
- Strengthen the industrial base and local production structure*
- Help in attaining balanced development.*

*While promoting enterprises operating in traditional informal (micro-enterprises) to modern SME, the Government expects a high degree of self-reliance and indigenous participation. However, start-up, growth and expansion of enterprises are constrained by capital, inadequate entrepreneurial and managerial capacities as well as the problems of selecting appropriate technology.*

*In order to provide continuous support within the limits of its limited resources, the DOI plans to focus attention on priority sectors, promote inter-firm co-operation, upgrade management and technical skills. In this connection, the DOI has identified the Medabir Industrial Estate as deserving of immediate attention in terms of rehabilitation and expansion. The problems currently besetting the Estate include inadequate infrastructural facilities, limited market and product mix, archaic technology and lack of skills, inadequate access to finance and training.*

*The mission team subsequently visited the Medabir Industrial Estate where the said constraints were confirmed. The authorities therefore requested for UNIDO's assistance to rehabilitate/modernize the Estate, diversify the activities and upgrade both the skills of the owners/workers and quality of their products. Similarly, UNIDO was requested to extend its study to other economic centres and advice on the feasibility of setting up new estates/ industrial growth centres.*

*The UNIDO team, in the discussion that followed, briefed the staff of MTI about UNIDO programmes in the promotion of small and medium scale industries as well as rural industries. Principally, technical assistance to SMI is integrated and focuses on policy, institutional and enterprise levels. To provide support at the enterprise level, UNIDO encourages setting up of industry-trade clusters in order to deal with problems common to them. It was also confirmed that industrial estates/industrial growth centres had long been recognized as effective instrument for SMI promotion since: they stimulate entrepreneurs to set up new undertakings, induce existing industries to relocate – thereby contributing to effective urban and regional planning and environment and energy management. However, to meet the demands of the year 2000 and beyond for technology, quality assurance, environmental protection etc., the concept has been expanded to encompass new forms of infrastructure such as science and technology parks and industrial parks which assist in the achievement of indigenous R&D activities. Furthermore, export processing zones had become popular in attracting foreign investments for the manufacture of goods for export. In all cases, careful studies constitute the requisite for informed decisions.*

*It was further explained that UNIDO takes a comprehensive, multi-sectoral approach that includes:*

- Designing/implementing new programmes at the national level for industrial infrastructures which support SMIs.*
- Carrying out pilot projects and facilitating the exchange of experiences and information within entrepreneurial networks and clusters.*
- Analysing of global trends.*
- Establishing network of SMIs around R&D institutions and universities.*
- Providing advisory services on mobilization of resources and investment and*
- Collating and disseminating information and providing advice on guidelines, norms and policies.*

*(e) Industrial Statistics*

*The document provided by MTI on this subject states that weaknesses exist in the "statistical system which have an impact on data availability, consistency, validity and timeliness". This was*

*the observation following an assessment made by the Planning and Statistics Service in March 1996. It was indicated that no survey had ever been undertaken on private industrial enterprises and thus there is no accurate information on industrial production, employment, wages, value added, number of establishment, etc. In addition, computerization of the industrial statistics and standardized product classification systems have not yet been introduced. These constraints have obvious implications for planners and investors.*

*In view of the foregoing MTI identified its needs which include:*

- *Assistance in the establishment of statistical definitions and industrial classifications i.e., introduction of international standards of classification for comparability of data and information exchange purposes;*
- *Guidance on preparation of questionnaires and instruction manuals relevant to industrial surveys;*
- *Training on the practical data collection methods, sampling plan, procedures for the handling of the missing data and evaluation/validation procedures;*
- *Assistance on checking of consistency, coverage and reliability of the collected data;*
- *Training in estimation, forecast, projection and other methods of statistical inferences i.e. based on the collected sample data;*
- *Techniques of promotion of closer and more effective links between the data supplier and the user community;*
- *Implementation of computerization systems of industrial statistics;*
- *Installation and customization of software system and*
- *Training of operators and users in additional data-entry and report generation, preparation of documentation systems, etc.*

*Following the submission by MTI, the mission team provided explanations about UNIDO's programmes on industrial information, indicating that UNIDO has been recognized in the United Nations Development System (UNDS) as the authoritative source on the subject. To that end, UNIDO monitors global economic, political and technological developments on a continuous basis. UNIDO also assesses new technological break through, location of industry, environmental impact, population growth, demand for skilled/unskilled labour, poverty, etc. To make relevant information readily available, UNIDO has developed the Industrial and Technological Information Bank (INTIB) which gives access to the Organization's data-base. In addition, UNIDO runs an International Information Referral System and publishes the Global Report, Survey of World Industries as well as Industrial Development Reviews specific to countries.*

*The UNIDO National Industrial Statistics Programme (NISP) was seen as the instrument for addressing the constraints identified by the ministry officials.*

(f) Manufacturing Sector Studies

*The mission was informed that the authorities encourage high-level investments as a way of ensuring self-sustaining growth in the economy. In this connection the objectives of the Department of Industry are to:*

- *Contribute to the economic growth by promoting export-led industrialization.*
- *Upgrade available technology*
- *Achieve a measure of balance in spacial development*
- *Generate employment opportunity by promoting the informal sector.*

*Realising, however, that at present Eritrea has a dearth of capable entrepreneurial business community, it has become necessary for the Government to play a pioneering and catalytic role in the establishment of new enterprises for the exploitation of the country's natural resources. In conformity with the openness in the economy, such investments must be strictly on competitive basis, guided by the principles of the market. More importantly, the ultimate objective must be for the Government to withdraw in due course for the private sector to take over such economic activities.*

*On the basis of the assessment made by a committee made up of representatives of the public and private sectors, the priority industrial sectors have been determined. These include, leather and leather products, textiles, salt works, ceramics and enamel ware and building materials. Agro-industries particularly sugar are also considered priority industries but had to be deleted from the list as some private American firm has already made substantial investments in the sector. Additionally, techno-economic study for glass had been conducted by a private British firm while that on cement is being undertaken by an Italian firm.*

*Based on the work of the committee, preliminary draft terms of reference (TOR) for the proposed feasibility studies (except for ceramics and building materials) were made available. Sector studies for cement with the support of IFC and glass by an Italian firm have already started and would be completed in 1996. According to the officials, MTI has earmarked some funds for the remaining studies but needed UNIDO's help with respect to:*

- *Technical assistance to review the draft terms of reference: textiles, leather and saltworks;*
- *Preparation of new TOR for ceramics and building materials;*
- *Provision of short list of qualified consultants to be invited to bid for the assignments; and*
- *Technical assistance in conducting the sector studies.*

*The Ministry wishes through the studies, to prepare long-term strategies for the development of those sectors, in terms of establishment of new plants as well as rehabilitation, restructuring and expansion of existing plants.*

*In response, the mission team drew attention to UNIDO's long experience in conducting feasibility studies as well as its widely tested, internationally accepted and comprehensive approach to investment studies preparation and appraisal. UNIDO has also contributed to the development of the methodology for cost-benefit analysis of investment projects and has produced the UN best selling publication titled "Manual for the preparation of Industrial Feasibility Studies". Complementing the Manual is the computer model for feasibility analysis and reporting*

*(COMFAR) also developed by UNIDO. It gives investors and financiers a basis for project comparison and data analysis leading to specific recommendations. Details were provided on UNIDO's training programmes including those on preparation and appraisal of industrial feasibility studies as well as COMFAR.*

*On the specific requests made, the Ministry was informed of the possible involvement of UNIDO either in advisory capacity or through a trust fund arrangement to entrust the work to the Organization. The latter entails the review of existing TORs, preparation of the outstanding TORs, tendering, evaluation of bids, selection and actual feasibility studies. As usual, at every stage, UNIDO would be guided by the decisions of the Ministry. The advantages of using UNIDO services, including use of staff at own cost, maximizing the use of the Ministry's funds, promotion of the projects for investment through the IPS offices etc. were mentioned.*

*The Ministry indicated its willingness to fully involve UNIDO and to utilize its services possibly under a trust fund arrangement for the whole exercise.*

*Following the factory visits to some industrial complexes, some better insight was obtained on the operation of the industries in the priority sectors. Details on the findings in the factories are contained in Chapter F of this report.*

#### **D. CONSULTATION WITH UNDP**

*Following the final meeting with the officials of MTI at which consensus was reached on the nature, scope and phasing of possible UNIDO interventions, a wrap-up session was held between the mission team and the UNDP. Details of the priority support programmes agreed with MTI, were provided and positively reviewed.*

*The UNDP Resident Representative expressed delight that the consultations had provided opportunity for the national authorities to pronounce themselves on their needs and priorities. He recalled his advice that for any intervention by UNIDO to be realistic, it must be based on such consultation.*

*The Resident Representative also reiterated his conviction about the role and relevance of industrial development, particularly for a young state like Eritrea which still suffered from the effects of a protracted war. In this connection, he agreed with the UNIDO approach to pay particular attention to capacity building at policy, institutional and enterprise levels. Also, efforts must be made to mainstream women activities and expand their contribution to national development. He would therefore among others, support an integrated programme on WID. In essence, he looked forward to working closely with UNIDO in further defining and elaborating the support programmes as well as giving the financial support within the limits of available resources and in accordance with the procedures agreed with the Government for accessing UNDP funds.*

*The Resident Representative explained the role of the Macro Policy Office in co-ordinating technical assistance in Eritrea. He also indicated that while preparations were on for the next programme cycle, funds would be provided for the "bridging period" in order to support important programmes. He looked forward to the mission report and the recommendations therein and congratulated the team for doing a "good job".*

## **E. MEETINGS WITH INDUSTRY RELATED INSTITUTIONS**

### **(i) Eritrean Standard Institution (ESI)**

*In order to improve the standard of living of Eritreans and provide for the continued expansion of the economy, the Government promulgated Proclamation No. 75/1995 – Establishment of Eritrean Standards Institution (ESI). The proclamation reposes on ESI the sole responsibility to ensure standardization, quality and metrology for purposes of protecting the interest and health of domestic consumers, securing wider markets abroad, safeguarding the domestic market from inferior quality products and achieving global competitiveness. ESI is therefore mandated to prepare and promote standards on national, regional and international bases as well as adoption of standards with respect to products.*

*With regard to its structure, ESI has a Standards Board (chaired by the Minister of Trade and Industry) with seven other ministries represented as well as the University of Asmara, Chamber of Commerce and the General Manager. The proclamation enjoins ESI to charge fees for its services. These are normally supplemented by Government subsidy and contributions/donations.*

*In terms of functions, ESI will, inter alia, prepare compulsory Eritrean Standards relating to products, practices and processes and follow up with their implementation; revise the standards from time to time as necessary; waive temporarily the enforcement of compulsory Eritrean standards where the circumstances so justify; affix the standards mark to products which conform to Eritrean standards; examine or test products to ensure conformity; certify import and export products; inspect and certify the conformity of measuring instruments to Eritrean standards; etc.*

*ESI presently has a staff of twelve, four of whom are professionals. The Institution is therefore in dire need of experts that would handle various aspects of the work. Since it may not be necessary in all cases to set up own standards especially in view of the limited staff, ESI hopes to adopt standards from other countries. To this end, the library is being equipped with information from various sources and ESI looks forward to receiving other relevant information from UNIDO.*

*Given the critical importance and contribution of salt in the Eritrean economy, ESI had held consultations with UNICEF which, with the assistance of USAID, had embarked on a salt iodization programme. ESI, however, is interested in ensuring, with the help of UNIDO, the quality of the salts as well as proper packaging. More importantly, ESI is keen to get UNIDO's assistance in reviewing its draft project document on the establishment of a National Quality Control and Testing Centre and the Legal Metrology Centre. Assistance is also requested for reviewing draft regulations on weights and measures as well as standardization marks and fees.*

*UNIDO's work relating to quality management, standardization, and metrology as well as assistance in the acquisition of ISO 9000 and ISO 14000 certification were explained. The critical role of quality in determining global competitiveness in manufacturing, ISO 9000 as a catalyst for generating sustained increases in enterprise performance by promoting total quality management and continuous improvement, etc. were examined. Finally, following consultations with the headquarters, the team indicated the possibility of using IDDA resources to send an expert to assist ESI in reviewing its draft project documents which would then be submitted to the Macro Policy Office for presentation/negotiation with donors.*

**(ii) Eritrean Investment Centre (EIC)**

*The Eritrean Investment Centre was established by Proclamation No. 59/1994 to encourage investments so as to develop and utilize the natural resources of the country; to expand exports and encourage competitive import-substituting businesses; to create and expand employment opportunities; to encourage the introduction of new technology that would enhance production efficiency; to encourage equitable regional growth and development, and to promote small and medium-scale enterprises.*

*Operating as an autonomous body, EIC has become a "one stop" investment office which assists investors to process their business licences and to benefit from the investment incentives relating to land allocation, tax, foreign exchange, loans, investment guarantees and dispute settlements.*

*Given the shortage of staff, the Centre's strategy is to promote investments through operating more as a facilitating than as a regulatory body. EIC expressed appreciation for the assistance provided by UNIDO in preparing and publishing the Eritrean Guide to Investors and also assisting Eritrean firms to participate in the COMESA industrial investors forum held in Kampala, Uganda, in November/December 1995. Additional copies of the guide were requested by the Centre.*

*Finally, it was explained that hitherto EIC could not pursue UNIDO's proposal to strengthen the centre because of the Government's rationalization exercise as well as the need for EIC to take on more staff. The Centre looked forward to continued collaboration with UNIDO.*

*Thereafter, the team made a presentation of the UNIDO investment promotion programme, pointing out that the international setting for investment and technology flows had become rather complex. Globalization of markets, communications and production, increased market orientation of Government policies, liberalization of international trade – especially in the aftermath of the Uruguay Round Agreements, the growing emphasis on exports and competitiveness etc have very wide-ranging impact. The mechanisms of foreign investment including joint ventures and strategic alliances, non-affiliate licensing arrangements, buy back agreements, joint research or marketing, BOT and other forms of enterprise to enterprise relationships promoted by UNIDO were explained. Indeed, UNIDO's international industrial investors forum has become one of the programmes with the highest demand by the developing countries. UNIDO operates through its Investment Promotion Service (IPS) offices and other network all over the world to match project promoters and investors. A delegates programme has been developed as an integral part of investment promotion activities.*

*It was indicated that UNIDO assists Governments to formulate and assess policies and strategies relating to investment promotion as well as transfer of technology. UNIDO also assists in building up relevant institutions and capacity to identify, formulate, appraise and promote investments.*

**(iii) National Agency for the Supervision and Privatization of Public Enterprises**

*As indicated earlier, the new State of Eritrea inherited a variety of public enterprises which were beset with various problems such as outdated technology, low productivity, low quality goods as well as inefficient management and lack of marketing skills. Besides this heavy heritage*



*stemming mainly from the times the country was under a centrally planned economic system, there is quite substantial war damage suffered which was not fully remedied by the RRP. In keeping with the provisions of the Macro Policy and the desire to promote result-oriented management principles, the Government has decided to embark on the privatization of state-owned enterprises.*

*The institution mandated to carry out the exercise, the National Agency for the Supervision and Privatization of Public Enterprises was established by Proclamation No. 85/1995 – with the Minister of Trade and Industry as the Chairman of the Board. The said proclamation is, however, under review while guidelines would be established in due course.*

*The UNIDO enterprise restructuring and privatization programme was outlined by the team. It was pointed out that restructuring usually involves diagnosis of the enterprise and its environment; development of a strategy to improve efficiency; preparation of a business plan and business plan implementation – including resource mobilization, investments for technological innovation and/or expansion, enterprise revamping, altering of product mix, etc.*

*Privatization is generally advocated where state ownership amounts to economic liabilities and adds to the economic burden of the concerned country, or where the Private Sector simply does a more efficient job. Normally, there is an interrelationship between restructuring and privatization and restructuring may be an essential step to increased efficiency prior to privatization, if same is not possible immediately or a foreseeable future.*

*As usual, UNIDO's approach is to give assistance at the policy, institutional and enterprise levels. In the case of Eritrea it will be essential to integrate the learnings of sectoral studies which are currently looking at SOEs for improved efficiency, product development and marketing support as well as expansion potential including search for possible key investors and/or joint venture partners.*

**(iv) Eritrean Agency for Environment (EAE)**

*This agency was created in 1995 though the instrument (proclamation) detailing its *modus operandi* is still under preparation. Nevertheless, EAE is envisaged to operate as a co-ordinating agency for environmental protection. In this connection, the agency hopes to work through line ministries by influencing their respective sector policies. Besides, it is envisaged to have a focal point in each ministry to look after environment matters and to report to the Agency.*

*Out of the current staff of 11, seven are professionals while the remainder are in administration. In addition, two Austrian volunteers are assisting the agency.*

*Through a series of national workshops and seminars, a National Environment Plan has been prepared by the Agency. According to the Management Plan, the following areas are considered priority activities to be pursued:*

- Reducing indoor air pollution*
- Recycling industrial waste water*
- Sewage treatment systems for Asmara and Massawa*
- Improved system of urban solid waste management*

- *Promotion of low or non waste technology*
- *Promotion of risk minimization in industrial employment*

*The Plan already envisages UNIDO involvement in two specific areas:*

- *National capacity building to manage chemicals and*
- *Recycling of wastes (especially from the textile industries).*

*Through the agency, Eritrea is preparing to sign the Basel Convention, the Vienna and Geneva Conventions and the Montreal Protocol. A study in bio-diversity is also being carried out in co-operation with UNDP and the Norwegian Government.*

*The mission team provided information on the UNIDO programme relating to environmental policies and strategies, cleaner production, energy supply and conservation and environmental awareness. The said programmes have been embodied in the concept of ecological sustainability of industrial development (ESID) which requires that environmental dimensions are brought into all planning, policies and expenditures relating to industry, integrating environmental goals with help of industrial development. Attention is equally paid to energy conservation, energy efficiency and clean technologies. UNIDO's involvement as one of the four implementing agencies for the Multilateral Fund for the implementation of the Montreal Protocol, its programmes on Agenda 21 and involvement in the global environmental facility (GEF) were explained.*

*UNIDO promotes ESID by eliminating waste at source through cleaner production. Industry can therefore grow without compromising the environment by applying processes which are cleaner, more energy efficient, resource efficient and less wasteful. Emphasis is particularly placed on appropriate and environmentally friendly technologies. Other UNIDO programmes include energy efficiency in production, energy conservation, new and renewable sources of energy and conventional sources of energy.*

*In general, UNIDO has a preventive approach to pollution, including cleaner production, waste minimization and conservation of natural resources and energy. Emphasis is on assisting policy-makers to translate international environmental conventions into appropriate policies and strategies at the national level. Building human and institutional capacity receives special attention in the Organization.*

**(v) Asmara Chamber of Commerce (ACC)**

*A meeting was held with the business community in the Asmara Chamber of Commerce. The ACC was established in 1940, thus making it one of the oldest chambers in the Africa region. ACC functions as a voluntary organization that caters for the interest of the business community.*

*The mission team provided the information on the origin, mandate, structure, orientation, governing organs, thematic priorities, and mode of operation of UNIDO. The team also presented UNIDO's programme for private sector development and, in particular, discussed the programme of the Strategic Management of Industrial Development which promotes inter-active process between Government and private sector in formulating and implementing long term industrial policies. The other programmes of UNIDO were described in detail also. The various funding mechanisms including the trust fund arrangement were explained.*

*This presentation was followed by some questions from the business representatives attending the meeting. Most of the questions were related to UNIDO's assistance to individual private enterprises, UNIDO's overhead costs for technical assistance, and financing for rehabilitation and modernization of individual private enterprises. Clarifications were provided by the team on the mainly institutional approach for solving problems at enterprise levels, to safeguard cost-efficiency and equity. Thus, one potential area for UNIDO's cooperation with the Asmara Chamber of Commerce could initially include on-the-job training for the priority sectors: textile, leather and leather products, salt, ceramics and building materials as well as rehabilitation of ailing industries with provision for sharing of experiences and lessons learned.*

***(vi) Meeting with the International Trade Centre (ITC) Consultants***

*During the meeting UNIDO's team was briefed on the activities of ITC in Eritrea. ITC is actually preparing an Export Development Plan and various activities are being carried out such as: assessment of trading information, training in marketing ; inter-institutional analyses for preparation of proposal for implementation of the action plan, assessment of the policy environment for export development and identification of products ready for export; identification of export project opportunities and preparation of project profiles in promising areas. The ITC senior advisor showed interest in cooperating with UNIDO in the future programme to be developed in Eritrea particularly in the activities related to export of manufactured goods, mainly for reasons of necessary product adaptation.*

*The products with currently highest potential were shoes and ITC's cooperation with UNIDO within the leather programme should be pursued and intensified. Other areas would include: garments, medicinal applications of non-metallic minerals, marble and granite.*

***(vii) Women in Industrial Development***

*Discussion on this topic was held in the office of the National Union of Eritrean Women with some members of the Association of Business and Professional Women (BWA) participating.*

*The Union, formed in 1979, is the apex organization dealing with women issues in Eritrea. At the time of its establishment, the Union helped to mobilize women to participate in all aspects of the liberation struggle. It still operates as the recognized focal point and lobby group for women particularly as there is no official body on women issues. It was pointed out that Eritrean women have, through their active participation in the war effort, earned their rightful place and respect in the country. The constitution under preparation envisages about 30% of the seats in the parliament to be filled by women who could also compete for the remaining 70%. As a matter of fact women in Eritrea are legally covered though inadequacies still persist in the cultural sphere.*

*There are about 250,000 members spread all over the ten provinces of Eritrea. In terms of organization, the Union has a Council and an Executive Committee.*

*Since the end of hostilities, the effort of the Union has been redirected to encouraging women to participate in the national reconstruction effort. The Union also champions/ advocates laws for the protection of women's rights, education and access to credits as well as the general improvement of their well-being.*

*Apart from running a credit scheme which has benefitted over 600 women and co-operatives, the Union organises training in tailoring, use of computer, typing, embroidery, etc. Special attention has been paid to help demobilized women fighters some of whom have combined to set up enterprises.*

*While most of the women operate in the informal sector, BWA has a few members who are pharmacists or run export-import businesses or restaurants. Nevertheless, due to the level of illiteracy, the patriarchal system and other social and cultural inhibitions, women have problems which limit their role in industry. These are compounded by lack of credits, lack of knowledge about market opportunities and low skills.*

*During discussion on the subject, the various programmes of UNIDO for promoting the participation of women in industry were mentioned. In this respect, the main thrust of UNIDO services to assist women is to meet the challenges of industrial restructuring, technological change and the economic reform. Specifically, UNIDO has designed programmes which seek to minimize constraints that women generally suffer. Some of the programmes include capacity building and development of skills, support for women entrepreneurs in SMEs and micro-enterprises, appropriate technologies for agro-industry, training of women in food processing and women and the environment.*

*The main instruments of UNIDO for promoting the integration of women in industrial development such as policy advice and other forms of technical assistance, capacity building and R&D were mentioned.*

#### **(viii) Visit to the Marine Resources Department**

*While in Massawa port area, the mission team visited the Marine Resources Department. With over 1000 kilometres of coastline along the Red Sea and additional 52,000 sq. kilometres within its continental (exclusive) zone, Eritrea has very rich marine resources that contains various types of fishes including shrimps, lobster, tuna, mackerel, snapper, barracuda, groupa, anchovy and sardines.*

*While the country is capable of producing over 60,000 tonnes of fish and sea food annually, the current catch has been estimated at only 4,000 tonnes. The reason is that traditionally, Eritreans prefer meat to fish and thus the number of people making a living by fishing has over the years remained low. Furthermore, with the depletion of the forest resources, it has increasingly become difficult to find materials for boat building. Because of the perishable nature of fish, the absence of well organized market and cold storage had hitherto constituted an additional disincentive.*

*In order to address these and other problems, FAO with the financial support of the Japanese, is currently providing technical assistance to the fishing industry. Apart from providing training and advice to the growing fishing communities, the assistance has led to the establishment of co-operatives and a credit scheme. Also, the Marine Resource Development (MRD) is providing training in fish handling, processing and marketing.*

*While MRD imports wood lots (at great cost) to reintroduce the knowledge of boat building, experiments are on with glass fibre boats and imported engines.*

*To further assist the fishing communities, MRD has provided on its premises a petrol station, ice making plants, canteens and offices for the co-operatives.*

*Since the consumption of fish is still low in Eritrea, MRD sees great export possibilities once the fishing culture takes root.*

*MRD showed keen interest in the fisheries industrial system – an integrated programme approach introduced by UNIDO that looks into, inter alia, the resources including surveillance, processing, distribution and marketing. The Department also requested for assistance in boat building technology.*

## **F. VISITS TO THE FACTORIES**

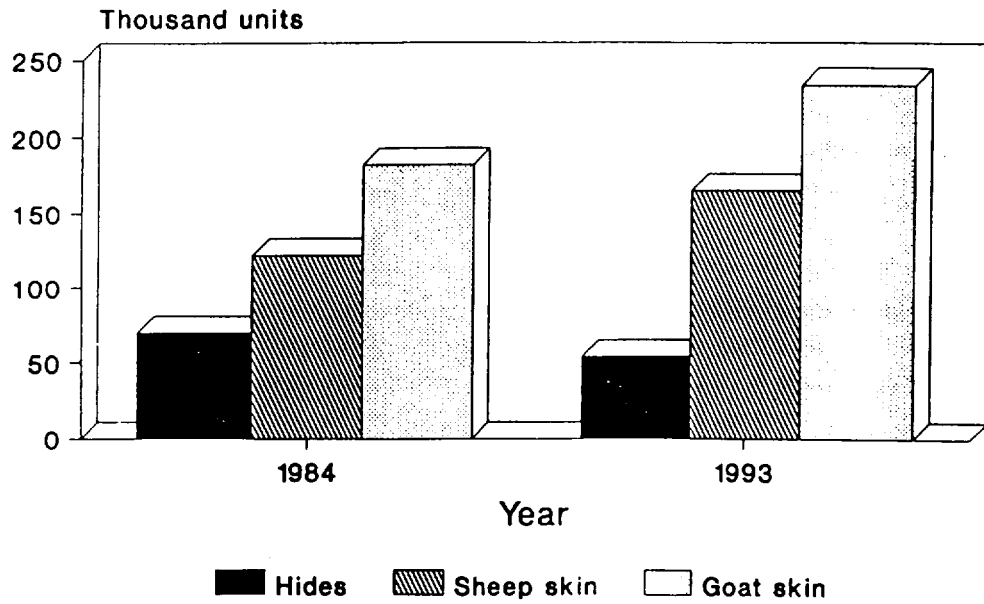
### **(i) Visit to the Asmara Tannery and Pickling Factory**

*The factory is a public enterprise and currently produces semi-processed skins that are exported to Italy, Japan, England, India, Pakistan and the Netherlands. The production capacity is around 7,000 pieces/day. Under the Recovery and Rehabilitation Programme of Eritrea (RRPE) some rehabilitation work has been carried out mainly focused on improving quality and installation of some new equipment (drums). The main constraints of the factory are as follows:*

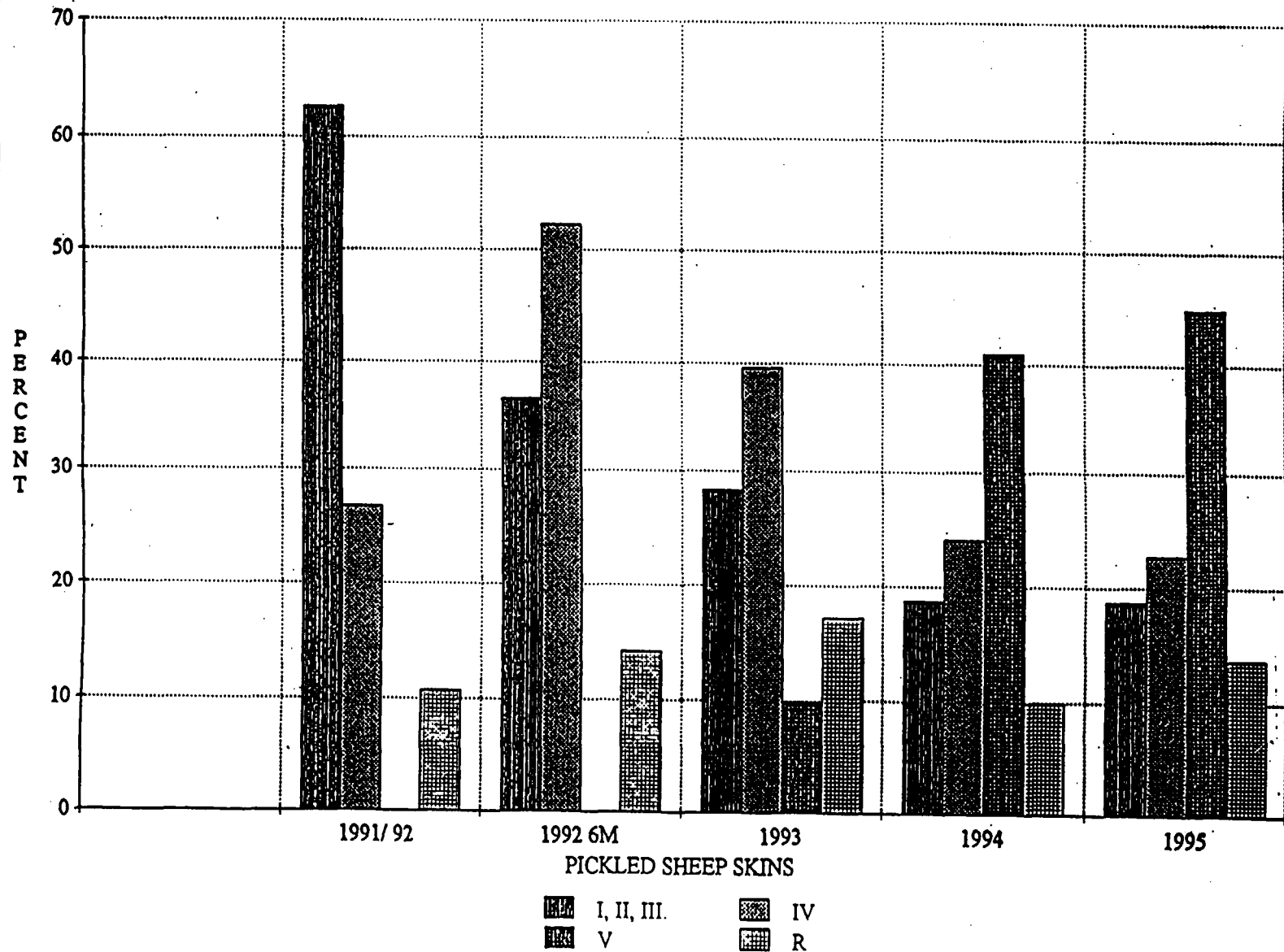
- Lack of skilled manpower;*
- Shortage of some raw materials mainly because the skin collection network is not very well organized. There is also some competition for skins from other tanneries and from semi-processing of skin in rural areas. This year however the factory has not had any particular difficulty in obtaining skins;*
- Since 1991/1992 the quality of semi-processed sheep skins has been declining. This is attributable to some disease that causes imperfections in the sheep skins and which are only detected after processing. The causes are being investigated by the Veterinary Department of the Ministry of Agriculture in cooperation with an institution in England.*
- The tannery discharges the untreated waste water into the sewage system of Asmara. There is a preliminary study to install a common treatment system together with other government owned tannery located in the same area. A study was prepared in 1995 but no decision has been made so far.*
- The factory intends to produce dried and crust skins but is facing some difficulties in identifying export market for these products. Since most of the actual importers have their own facilities for drying and crust the skins, they prefer to receive the skins in the wet form.*

*Some possibilities for UNIDO's intervention were mentioned including: (1) on-the-job training; (2) identification of export markets for crust skins; and (3) study for installation of waste water treatment system.*

**Figure II**  
**Production of Hides and Skins, 1984 and 1993**  
**(Thousand units)**



*Figure III*  
*Asmara Pickling Tannery*  
*Selection Result*



**(ii) Asmara Ceramic Factory**

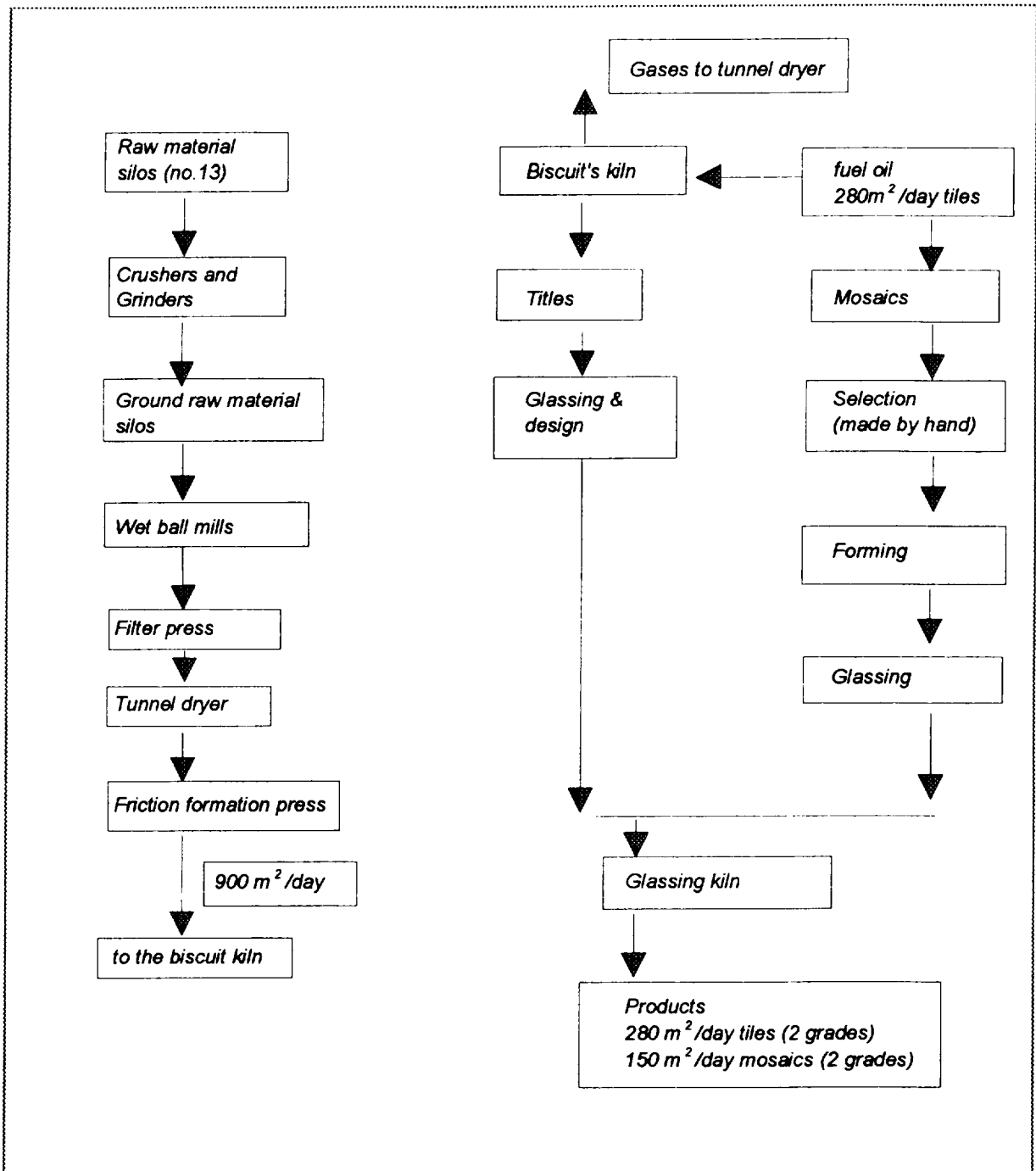
*The factory produces tiles (floor, walls) and mosaics (floor, walls) and at the moment does not have any difficulties in selling its products on the domestic and export market (Ethiopia is the main importer). The current production capacity is 150 m<sup>2</sup>/day of mosaics and 280m<sup>2</sup>/day of tiles. The main bottle-neck is in the kiln for producing biscuits. The friction formation press has a capacity of 900m<sup>2</sup>/day but the kiln only can process 280 m /day. After Eritrea's independence, some areas have been rehabilitated under the RRPE -World Bank. The areas rehabilitated included the silos for raw materials, crushing and grinding areas and part of the workshop. The mill management is now planning to rehabilitate other areas in cooperation with some Italian investors. This will include installation of a spray-drying system and retrofitting the ball mills. The estimated investment for this phase is around US\$ 1,000,000. Other areas that still need modernization/rehabilitation include the following:*

- *Kiln for biscuits production;*
- *New grinding balls. They are using feldspar balls that contaminate the product reducing its quality;*
- *New moulds for tiles;*
- *Improvement of the silos for already prepared raw materials;*
- *To complete the rehabilitation of the workshop;*
- *Retrofit mills for pigments and colours;*
- *Replacement of the existing friction press by a hydraulic press equipped with vertical dryer.*
- *Improvement of laboratory. The main constraint faced by the factory is the lack of skilled people for operation and production. The factory management has plans to contract additional technical personnel: production engineer, mechanical engineer, electrical engineer and industrial chemist for the laboratory. The possible areas for UNIDO's intervention include:*
- *On-the-job training as part of the training programme for the subsector;*
- *Feasibility study for a new factory with higher production capacity than the one visited by the UNIDO mission to be located outside Asmara. A preliminary technical study has been prepared by a Chinese company;*
- *Preparation of a modernization/retrofit programme for the factory as part of the sectoral study including environmental and health issues.*

*The profile of the factory included in the investment promotion forum organized by UNIDO in Kampala, 1995, attracted the attention of some investors who directly contacted to the factory management. It was suggested again to circulate the profile of the factory through the UNIDO Investment Promotion Offices with a view to identify other potential investors.*



**Figure IV**  
**Simplified flow diagram Asmara Ceramic Factory**



**(iii) Visit to Mereb Textile Factory, Asmara**

*This is a public enterprise built by Maurer Textile Cia., Geneva, Switzerland, and started operations in 1966. It is an integrated textile mill combining spinning, weaving, dyeing, printing and finishing. The spinning machinery was from Platt Brothers, U.K.; the weaving machinery from Picanol, Belgium and dyeing, printing and finishing equipment mainly from Farmer Norton, U.K. The main fibre used is cotton (70%) locally produced but the factory also uses polyester viscose, polyester cotton and rayon filament that are imported.*

*Nearly 27-28 different types of fabrics are produced and exported to Ethiopia. The mill management is interested in expanding the exports to Uganda and Europe. Germany is interested in importing grey fabrics. One of the difficulties is that the factory can only produce fabrics 90 cm in width while there is the market for wider ones. Another bottle-neck is in the weaving department which operates in three shifts. While other departments operate in two shifts. The factory has plans to modernize the printing and the weaving departments, the latter by replacing nearly 100 machines with 32 new and more efficient ones. A feasibility study is required and the manager estimates an investment outlay of around S\$ 5,500,000. The waste water is discharged into the sewage system of the city but attempt is being made to reduce pollution by using azo-free dyes and chemicals which are imported from Europe. As in the other factories, they also lack skilled people for production and operation and need some assistance in new designs for printed fabrics. The areas for potential UNIDO's intervention include: (i) on-the-job training as part of the training programme for the subsector; (ii) preparation of a modernization/retrofitting programme for the factory as part of the sectoral studies, including environmental issues.*

**(iv) Visit to T-shirt Production Unit, Asmara**

*This is a printing and painting T-shirt unit operated by women ex-fighters. The screen printing equipment was donated by a Swiss lady through the National Union of Eritrean Women and Business Women Association but is very cumbersome to operate. The unit is operated by 12 women on the Trade Fair grounds and its products are sold on the local market.*

**(v) Visit to Garment Factory (Barroko), Asmara**

*The factory is owned by a business woman and produces garments such as jeans, pants, denim jackets, shirts, using mainly imported fabrics. The production is made to orders and thus the factory does not have any stock for sell.*

**(vi) Visit to the Red Sea Mills**

*On the way to Massawa, the UNIDO team paid a short visit to the Red Sea Mills, a government owned company operating in the food sector. The factory has 4 production areas:*

- Wheat milling with one line with Italian machinery and another with Spanish machinery producing 40 t/day and 30 t/day respectively;*
- Biscuits production. This area has two lines but only one is operational, producing 1.5 t/day of various types of biscuits. The line that is now operating also needs some improvement.*

- *Pasta production - not visited*
- *Baby food production - not visited.*

*The wheat processed in the mill is imported. The products are sold in the domestic market and exported mainly to Ethiopia. All the four production areas need modernization. It should be mentioned that while the food industry sector was not indicated as a priority for the sectoral studies proposed by the MTI, it might have some possibilities for UNIDO's assistance in future.*

**(vii) Visit to Massawa Salt Works, Massawa**

*The company is owned by the government and produces coarse washed crystallized salt. The area was heavily affected by the war and the first stage of rehabilitation was to rebuild the evaporation, concentration and crystallization ponds and retrofit the salt washing system and the workshop through the RRPE-World Bank Programme. The current production capacity is 80,000 TPY.*

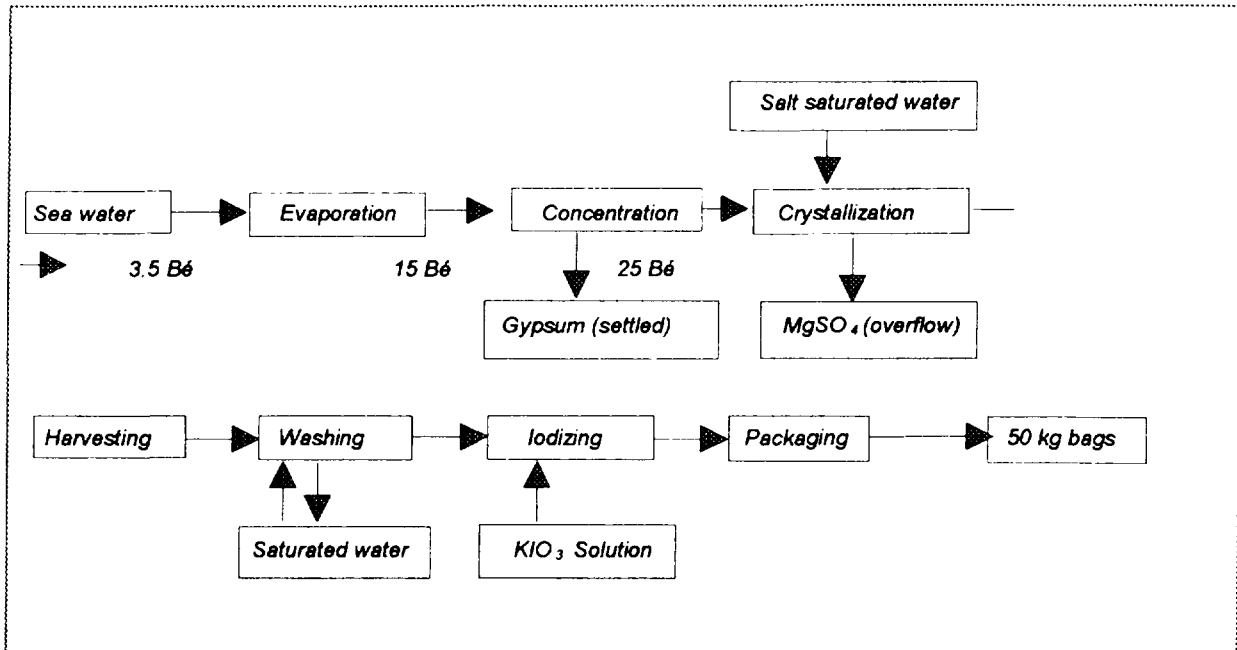
*The company only produces one type of salt which is packed in 50kg jute bags lined with polyethylene. The salt is iodized with  $KIO_3$  before packing. The iodizing unit was supplied through a UNICEF project and they are still evaluating the shelf life of the iodized salt. The quality of the salt is adjudged to be quite good with NaCl content of 98-99 percent and very low content of magnesium that tends to give a bitter taste. The management is planning to install equipment for drying, refining and packaging in small packs (0.5 kg - 1.0 kg) as this type of product is apparently better accepted by the local and export markets. The Saudi Arabia salt packed in small packs is sold in the local market at 850 birr/quintal (100 kg), while the Massawa salt is sold at 32 birr/quintal.*

*The investment cost for drying, refining and new packaging is estimated at nearly US\$ 6,500,000. A feasibility study however has to be made. As this investment is high, the company is also considering the possibility to do the modernization/diversification in two phases starting by installing a crushing and small packaging equipment, and installing the refining machinery later. The manager believes that this new product will be well accepted in the COMESA countries. The salt is produced only during the dry season (6 months) and the company is studying the possibility to produce brine shrimp during the rainy season in order to improve the financial situation. The company also produces gypsum and magnesium sulphate as by-products. The gypsum is sold to a cement factory.*

*They are having some difficulties in exporting the salt particularly to Ethiopia. The sales figures for 1993, 1994 and 1995 were 29,000t, 23,000t and 15,000t respectively. In the recent years some private entrepreneurs have started salt production along the Red Sea coast and are competing in the market. The company also competes with Assam Salt Works which has no export tax to Ethiopia while Massawa has an export tax of 11.5 percent recently reduced from 19.5 percent. The main constraints faced by the company are:*

- *Need to produce value added salt;*
- *Identification of new markets for salt;*
- *Lack of skilled manpower mainly for production operation, engineering (maintenance and repairs) and for market research.*

**Figure V**  
**Simplified flow diagram - Massawa Salt Works**



*The potential areas for UNIDO's intervention include:*

- *On-the-job training and training of trainers as part of the training programme for the subsector;*
- *Study for modernization and product diversification including production of value added products and identification of new markets as part of the sectoral studies*

**(viii) Visit to the Eritrea Cement Factory, Massawa**

*This is a government owned enterprise and is the only cement factory in Eritrea. The production capacity is 60,000 TPY of Portland cement. Their production represents nearly 1/5 of the demand of the country estimated at 300,000 TPY. The cement were imported from Romania and China. The factory is completing a rehabilitation programme supported by DANIDA, Denmark, which includes:*

- *Supply of a Diesel Power Generator (400W)*
- *Supply of two dump trucks, 20T each*
- *Supply of training equipment*
- *Supply of electrostatic precipitator*
- *Supply of process control instrumentation for the rotary kiln.*

*The raw material is available in the neighbourhood and it is estimated that it will be enough for the next 10-12 years. In cooperation with the Department of Mines, the company is evaluating the availability of raw material in the region. An Italian company, Sacci, is also doing some studies on raw material availability. The factory is producing only Portland cement and has*

carried out some studies to produce pozzolanic cement using 75 percent clinker, 20 percent pumice and 5 percent gypsum. The results were encouraging but the pumice available in the country is located in areas difficult to access. The operators are being trained by the suppliers of the equipment under the DANIDA project. A second phase rehabilitation programme is being negotiated with DANIDA for improvement of the cement mills that are actually the main bottleneck. The factory was not operating during the visit and for this reason it was not possible to evaluate the impact on the environment. It is expected that after the installation of the electrostatic precipitator, 3-5 percent of the raw material being lost before will be recovered.

**(ix) Visit to Orot Metal Works - Factory no. 2, Asmara**

The factory started operation in 1943 and was established by an Italian owner producing nails and wires. It was nationalized in the 1970s but as the new Government has compensated the owner, it is still owned by the Government. Besides the nails and wires production lines, the factory also has a rolling mill that had been idle for many years due to lack of ingots. The rolling mill was rehabilitated and considerably expanded recently but is not operating because of lack of skilled personnel at the production level. The factory is in dire need of a mill (production) manager. A new line for producing ingots from scrap material, using an arc furnace, started operation recently. The line has a production capacity of 5 t/shift (5 hours shift) and the management has plans to increase the capacity to 15 t/shift. The new line includes the arc furnace, a power generator (1MW), a fractionation unit to produce O<sub>2</sub> that is used in the arc furnace and a water refrigeration system. The machinery of this new line is mainly from Italy. The main needs of the steel mill include:

- On-the-job training of personnel for the rolling mill at all levels (management, production, supervisors, operators);
- Some laboratory equipment for analyses of magnesium and phosphorus content in the ingots. Equipment for analyses of carbon and sulphur is available

The metal work sector was not included as a priority sector by the MTI but it might have some possibilities for UNIDO's intervention, particularly concerning on-the-job training and assistance for starting up the rolling mill. Some leads were provided to enable the management scout for qualified personnel.

**(x) Visit to the Space 2001 Enterprise**

This is a private enterprise that is producing sanitary wares (WC, sinks, bath tubes, etc.) aluminium goods (door, windows frames), plastic pipes, cold moulded earth stabilized bricks and cold moulded tiles. The company, a Joint Venture with Belgium and South Africa, runs a real estate business, using the houses it constructs on leased property with its building materials and therefore provides an integrated package in property development.

**(xi) Visit to Medabir Industrial Estate**

Medabir Industrial Estate is a crowded location within the city boundaries of Asmara, mainly inhabited by micro and small family owned production units. The highest number is in the metal sector (blacksmithing, tinsmithing) producing household utensils and agricultural tools and implements and providing repair and maintenance services. In addition there are woodworking (crates, doors) and furniture units and, in prime location at the gates, some chili grinding units. The premises are tiny, there is no electricity and water supply to the sheds. Producers use scrap

*metal and metal sheet. The workforce is young, many apprentices, even children and girls are working there. Skills are passed on within the family. Income is low, rather at the subsistence level.*

*Most of the Medabir operators have a business license, the micro level units operate under a community licence. Expansion and/or improvement of operations is very constrained as hardly any tenant has access to credit or can afford the interest rates. Capitalization is mainly from family savings.*

*Medabir is known for its traditional products but due to neglect after the 1970-ies it seems that the workers/operators have lost the competitive edge. Their products get also under competitive pressure with slowly rising purchasing power and cheaper substitution products becoming available such as plastic containers and vessels. (For figures consult statistics on the informal sector, available in the MTI).*

*The MTI is worried about the future of Medabir should it not start changing the product mix offered. Particularly as it is in Medabir and in similar places (f.e. Keren) that many jobs are provided, there is the desire to rehabilitate the estate through better utilization of scarce space, provision of central estate services (water, electricity, sewage) and training (technical and entrepreneurial) cum product development. It is also considered that opening a credit line to micro entrepreneurs should be essential for the development of the Informal Sector.*

*A study and proposal for rehabilitation of the estate and later for replication in other locations is very high on the list of requests from MTI .*

## **G. EMERGING ISSUES AND POSSIBLE UNIDO RESPONSE**

*Having obtained an overview of the situation relating to the structure and performance of the industrial sector and, based on additional information in the documents provided, the mission team came to some preliminary conclusions about the areas where UNIDO's interventions are needed most. These could be categorized into two: For the immediate (phase I) and the medium/long-term (phase II) as indicated in the matrix in Chapter H. The elaboration of related programmes and projects will be undertaken either during the programme formulation mission as agreed with the UNDP or needs assessment missions on specific topics (e.g. WID). Based on the analysis carried out by the mission team, the following areas emerged as priority concerns that need to be addressed.*

### **(i) HUMAN RESOURCE DEVELOPMENT**

*The issue of Human Resource Development is one which played a crucial role in all meetings and was linked to and a matter of concern in all subjects discussed. Particularly for a country like Eritrea, with an export oriented development strategy, utmost attention and emphasis to the subject will be crucial to regain a competitive position in the world market. This competitive position will be a necessity, both*

- In the domestic market, to keep abreast with imports,*
- In the foreign markets, to penetrate established market structures with high quality products.*

*After three decades of war and an adverse economic regime, this calls for a comprehensive approach in HRD, to which the industrial sector will add its specific requirements. Such a comprehensive approach will have to take into account the following:*

- *At the Policy Level: A Human Resource Development Policy that will have a beneficial impact on industry calls for broad-based educational systems, orientation towards engineering and technical professions and jobs at an early stage, provision and re-installment of technical educational facilities from the primary to secondary to university levels, including links to Research and Development.*
- *At the Institutional Level: Awareness about state of the art in the Government decision making bodies of industry will require firstly capacity in the Ministry of Trade and Industry to act as an advocate representing the needs of industry and as a responsive partner in discussing with Private Sector representative bodies. Secondly, through orientation of technical educational institutions, curricula development and complementation with technical studies, (an Asmara technical faculty is presently not existing), the need for industry relevant skills will have to be supplied in the longer term. In addition, the Private Sector is challenged in the short term to come up with a training offer through its representative bodies, compensating and filling the gap in the most critical areas of skill shortages, as experienced by its members. The leading role of the Asmara Chamber of Commerce or other professional bodies in the capital will be important to reach out to all the country.*
- *At the Enterprise Level: It is here where the skills are most needed and where their absence is having or will continue to have a negative impact on productivity and production of high quality products. The Eritrean factories pointed out training and upgradation of skills of their technical and managerial staff as one of their greatest requirements, second only to their need for finance and new technologies/equipment. It will be here where the decisive changes will have to happen in the next few years.*

*Clearly, the dimension of skill shortage and training needs is calling for special measures. Some factories visited are installing training facilities and favour a starting phase with training of trainers and combination with on the job training. Sharing of skills will be the formula and it can be expected that with the determination of Government and Public Sector management to put the economy and enterprises back on track, the formula will also include the Private Enterprise Sector. The creation of entrepreneurs through carefully crafted programmes will be needed as the situation in Eritrea improves and more opportunities present themselves.*

*Skills, most evidently in demand, include machine maintenance engineers and technical staff, mechanical engineering and spare part production, sub-sectoral specialists (in textiles, leather, garments, ceramics, salt works) industrial designers, marketing specialists, procurement officers, laboratory staff like chemists, quality and process control engineers, waste minimization and environmental protection specialists.*

*The mission also had the opportunity to discuss the current Resource Development Programme of the MTI, There the training programmes implemented so far with the help of PRODEC, ITC and ILO for Ministry staff, institutions, public sector managers and private entrepreneurs, and projected for 1996-1999 reflect the overriding concern with export performance and concentrate on management and marketing. What needs to be complemented is the technical re-skilling and upgradation at the various levels required.*

*This would call for programmes organised along the lines of the leather programme, with industrial sector focus.*

*How to best go about it in a bridging exercise needs to be discussed until ongoing programmes and projects provide ways and means to bring experts into the country or links to existing institutional capacities are established and national expertise tapped.*

#### Possible UNIDO interventions

*After the discussions with the Ministry, Private Enterprises, Institutions, as well as factory visits, the following programmes/programme components would address the needs discussed in the Ministry of Trade and Industry.*

- *Capacity building for the MTI in
  - *policy and regulation*
  - *technology transfer*
  - *industrial information*
  - *industrial statistics**
- *Training component within Rehabilitation programme for the Medabir Industrial Estate (and replication in the six administrative districts)*
- *Training components within sectoral technical cooperation projects*
- *Consolidation of curricula of technical training institutions with a view to producing industry relevant skills*
- *Training of demobilized women fighters in traditional crafts (e.g.: ceramics, basketry)*

#### **(ii) TECHNOLOGY**

*Eritrea has adopted an export-oriented free market economic system. Technology is seen as one of the main factors needed to achieve international competitiveness of Eritrean industrial products. This, however, implies that Eritrean firms have to improve their international performance steadily and be able to respond to requirements of productivity, quality, reliability and rapid product introduction. Technology transfer and development capabilities have a critical role to play in achieving sustained competitiveness. For Eritrea, this calls for a thorough review of the situation with regard to the policy, institutional and enterprise environments for technology transfer and development.*

#### At the Policy Level

*The Science and Technology policy as elaborated in the Macro policy document emphasizes the need to promote, inter alia:*

- *Replacement of existing obsolete stock of capital in the country*
- *An extended and continuous programme of exposing the population to new methods and processes, with the view to promoting a technology innovation culture*
- *Research and development efforts in selected priority sectors*



- *Establishment of a national institution to gather information about existing and emerging technologies worldwide, evaluate their appropriateness to Eritrean conditions and make this knowledge available to the public and private sectors*
- *The technology already transferred to the country will be assessed in terms of its social, economic, environmental and health impacts, its adaptability to local conditions, and its sustainability, given local skills and resources.*

#### *At the Institutional Level*

*The Science and Technology Policy foresees the establishment of a national institution dealing with technology transfer. Such a national institution is yet to be established. On the other hand, the Ministry of Trade and Industry has a small unit designed to monitor technology transfers. In this respect, the Ministry works closely with the private sector through the Asmara Chamber of Commerce and the Eritrean Investment Center.*

*Given the export oriented and free-market approach of Eritrean economy where Eritrean firms will be faced with competition both in the export and domestic markets, the establishment of an environment conducive to the building of sustained competitiveness is very critical. A major challenge facing government institutions is to make possible such an environment where technology transfer and innovation capabilities of enterprises will be supported, strengthened and facilitated. A possible approach would be to establish the institutional capacity, say within the Ministry of Trade and Industry, to render technology support programmes that will assist industry in the search and identification of technological opportunities, in the evaluation and choice, the acquisition and negotiation, and the building up of technology absorption and innovation capability. A capacity-building programme that will build institutional and organizational competence in the delivery of these technology support activities for the private sector has in fact been identified as a priority area.*

*On the other hand, only a sound national innovation system can ensure maximum benefits from technology transfer. This implies the creation and strengthening of innovation system agents such as R&D institutes, universities, standards bodies, etc The feasibility of establishing an industrial research and development institute in Eritrea therefore needs to be addressed.*

*Investments in human assets is another key element as no amount of science and technology planning and strategizing for international competitiveness will succeed without the availability of human capacity committed and able to efficiently apply technology and make wise adaptations therein where appropriate. Accumulation of technical skills and appropriate structure of formal education should be a goal. Establishment of a Faculty of Technology at the Asmara University along with review of technical schools curriculum will contribute towards achieving this goal. In addition, continuous training programme on modern industrial production techniques will be necessary to ensure that Eritrean industry is kept abreast of international technological advances.*

#### *At the Enterprise Level*

*Since many of the industries are utilizing very old machineries and equipment, there is a need to embark on a modernization programme aimed at improving the quality of products and the efficiency of the manufacturing processes. Such a modernization programme will rely heavily on the introduction of new production technologies in key industrial sectors, such as ceramics, textiles and leather. The environmental impact of these new technologies will have to be taken fully into account in line with Eritrea's policy on environmental protection. The manufacturing sector study*

to be undertaken by the Ministry of Trade and Industry will no doubt address issues of rehabilitation and modernization including the introduction of new technologies. In addition, entrepreneurs and company officers could greatly benefit from access to information, knowledge and skills, tools and methodologies for appraising technological opportunities, identifying technological needs, evaluating technology options and negotiating advantageous and sustainable arrangements with technology suppliers and business partners.

### Possible UNIDO Interventions

In accordance with the priorities set out by the Ministry of Trade and Industry, UNIDO's intervention on technology transfer could be in the form of a capacity-building programme that will build institutional as well as enterprise capacities in the effective management of technology transfer processes.

For the designated institution, which could be the Ministry, it would mean building the human and institutional capacity within the Ministry to deliver technology support services that will facilitate the access, search, evaluation, choice, acquisition and negotiation of technology by industry as well as enhance the absorption and innovation process. Such support services could comprise advisory service, promotion, information and documentation services and training programmes. The aim is to create in Eritrea a sustainable institutional capacity to offer technology transfer and innovation services to industry. For the enterprise, this programme would mean access to information, skills and knowledge, tools and methodologies that will lead to an effective and efficient technology transfer and acquisition process.

The programme would be implemented with a combination of awareness-building programmes for government officials and entrepreneurs primarily on global perspectives, opportunities and barriers to growth and competitiveness arising from technology transfer; training activities on the more specialized and operational issues relating to search, evaluation, selection, negotiation and acquisition of technology; creation of a national core team of advisers and trainers on technology transfer; direct assistance to enterprises in the evaluation, selection, negotiation and contracting of technology including joint venture arrangements as well as in the identification and promotion of viable technological opportunities; the building up of a library of documentation needs of technology users and practitioners in the technology field; and introduction of Eritrea to UNIDO networks and information sources.

UNIDO will make available its vast experience and expertise, including its methodologies and materials for assisting developing countries in strengthening their technology acquisition capabilities. The UNIDO Negotiations Training Package, a dedicated set of instructional materials for teaching technology users, negotiators and practitioners, will be the main tool for conducting the programme in addition to UNIDO methodologies on technology needs identification and technology absorption. Possible participation in UNIDO's Techmart programme will also be explored.

### **(iii) PRODUCT OPPORTUNITIES AND DIVERSIFICATION**

The Ministry of Trade and Industry (MTI) has identified the following priority sectors for development: Leather and Leather Products; Textiles; Salt Works; Ceramics/Enamels; and Building materials.

All those selected subsectors are currently operating in the country but further development/improvements are required to increase their competitiveness in the local and export

market and to fully comply with the Government Macro Policy and Strategy. Therefore there is a need to carry out additional studies aimed at: identification of comparative advantages of these selected subsectors vis-à-vis developed and developing countries and free trade zones; upgradation of the technological level; effective use of scarce resources; environmental protection and identification of new product opportunities and product diversification to effectively penetrate the export markets.

The MTI has already prepared the draft terms of reference (TOR) for the Leather, Textiles and Salt Works subsectors but the TOR for the Ceramics sector have still to be prepared.

#### Possible UNIDO Intervention

Based on the discussions with MTI and managers of selected factories visited during the mission, some potential areas for UNIDO's assistance have been identified as indicated below:

- conduct and evaluate feasibility studies for the priority sub-sectors Textiles, Leather, Salt and Ceramics, covering private and public enterprises, including preparation of terms of reference for such studies.
- Provide direct technical assistance to the selected subsectors through demonstration programmes relevant to them.

#### (iv) ENVIRONMENT

While Eritrea does not yet boast of many industrial complexes, most of the existing industries especially those in the public sector, were originally set-up some fifty or more years ago. Obviously the technologies being used in such industries are old if not obsolete and some of them heavy pollutants. Some of the large industries such as the textiles, ceramics and tanneries are in fact within the city and are currently discharging their effluents into the city sewage system.

Water is a scarce commodity in Eritrea yet, there is no recycling of water discharged by the industries which currently consume about 30% of the water produced by the Municipality of Asmara. The matter is made worse by the fact that the country experiences on the average two months of rainfall annually and there is only one perennial river in the country.

Given the fact that a good number of the institutions that issue industry-related approvals are new, it has not been possible to carry out an environmental impact assessment on investment proposals. In the absence of any mandatory requirements, industries are operating on goodwill.

According to the National Environmental Management Plan, the government of Eritrea intends to pursue an approach to preventing pollution rather than depending on "end-of-pipe" technologies. Indeed the Macro Policy points to the need for effective environmental control of water, hazardous wastes, industrial wastes, etc.

Developing a comprehensive environmental programme to ensure sustainable industrialization is very demanding and requires building of local capacities -- for solving environmental problems as well as for developing pollution abatement strategies that transcend specific subsectors of industry. It requires developing extensive guidelines and environmental management programmes including the drafting of environmental and energy standards, formulating occupational safety and health legislation, developing risk management methodologies and introducing waste management techniques. Such

*a comprehensive programme also calls for the establishment of certain structures such as database on generic industrial treatment operations, training programme, introduction of appropriate technology, research and control networks.*

*Combining social, economic and ecological considerations, a good strategy for sustainable industrial development strategy ensures that industrial operations are not only efficient in terms of resource utilization, but do not irreversibly damage the environment. They should also recover and recycle waste and, as much as possible, be based on the use of renewable resources.*

*Given the complex nature of the subject, Eritrea would need assistance not only in creating awareness about industry-related problems but also in developing the right policies and building local capacities. The country also needs support in the prevention of environmental and resource degradation through adoption of clean technologies, enhanced energy efficiency in industry and the recycling and utilization of industrial wastes. Assistance is indeed urgently required in mitigating the adverse impact of existing industries some of which discharge their effluents into the sewage system. Advisory services can be provided to specific industries to assess their current operations and to establish norms, standards, regulations and legislations. In plant training could also be provided and the introduction of waste-treatment technologies and waste conversion programmes would be needed. On the basis of careful diagnosis of the sources of pollution and contamination, advice can be given on cleaning up contaminated sites.*

*In the field of energy, the issues are related to industrial energy development and power generation which takes into account all feasible alternative sources of energy so that levels of per capita energy consumption with acceptable environmental consequences can be achieved.*

*UNIDO's assistance to developing countries, following the ESID conference in 1991, focuses on the following priorities:*

- Building up the technical and scientific institutional capacity to develop, absorb and diffuse pollution prevention techniques, cleaner production processes and CFC-substitution production techniques;*
- Implementing international environmental conventions and protocols related to industrial activities;*
- Integrating environmental considerations into industrial technologies;*
- Identifying appropriate financial resources which could be utilized for the achievement of ESID; and*
- Strengthening existing databases and disseminating technical and policy information on ecologically sustainable industrial development.*

*UNIDO's assistance, however, requires all segments playing their roles. In this connection Government has to include environmental considerations in formulating policies and strategies -- providing a mixture of policy, regulatory and economic market incentives. Industry, on the other hand, has to adopt pollution prevention/abatement measures in manufacturing processes, voluntarily adhering to codes of conduct. The international community will be expected to provide the necessary financial resources in support of technical assistance for alleviating the environmental problems. Again, UNIDO's assistance would normally be directed at the policy, institutional and enterprises levels.*

(v) QUALITY MANAGEMENT

Problems

*Both the public and private manufacturing enterprises in Eritrea numbering about 40 and 1271 respectively currently produce an impressive array of industrial goods ranging from food, beverages, tobacco, textiles, leather products, metal products to non-metallic and chemical products. Most of these products are consumed in the local market. In a few cases, Eritrean goods are exported to Ethiopia and to member countries of COMESA.*

*Given the degree of devastation from the war, the general lack of investment and maintenance in addition to the lack of spare parts, production has been revived under severe conditions and so far, the industries are making substantial contributions in meeting the local needs of the populace. However, in view of the difficult conditions under which the industries are operating, it is obvious that the quality and standards of most of the products need enhancement.*

*As a matter of fact, the Macro Policy Statement has endorsed an export orientation and outward looking development strategy for Eritrean industries. This is all the more important in view of the small size of the domestic market.*

*In an effort to put in place the institutional framework that would ensure high quality and competitive goods, the Government has promulgated Proclamation No. 75/79 by which the Eritrean Standards Institution (ESI) has been set up.*

*Even in the short period of its existence, the Eritrean Standards Institution has detected certain irregularities and issues of concern. For example, some of the imported bottled water have been detected to have impurities. Also some of imported construction materials did not have the properties required. With the liberal economic policy of the Government it should be expected that Eritrean made products will continue to face stiff competition from imported products. The need therefore for standardization, quality control and metrology cannot be over-emphasized.*

*The ESI is, however, greatly handicapped at the moment to provide the kind of services expected of it. This can be attributed to:*

- (a) The lack of equipment for testing and measuring,*
- (b) The absence of national standards, procedures, laws regulations and guidelines for industrial enterprises,*
- (c) Inadequately trained manpower, skilled in all aspects of quality assurance and legal metrology.*
- (d) Inadequate accommodation suitable for its operation.*

Possible UNIDO Intervention

*The ESI realizes that there is a need to rationalize production and to bring about improvements in quality as this will lead to reduction of wastage and production of products that can be competitive in the international market. As a first step, ESI needs assistance in the finalization of its draft project document which aims to set-up a National Quality Assurance and Testing Center (NQATC) - a fully functioning laboratory for testing the standards and quality of*

products and issuing of certification. NQATC will also see to the development and application of Eritrea Standards thereby promoting export of quality goods. UNIDO is also favourably disposed to assisting ESI in improving quality and packaging of salt using the resources envisaged from the UNICEF Programme.

Furthermore, appropriate training is desirable both for staff of the Institution and to industry. The Institution also requires assistance in the drafting of related procedures, laws, and regulations and the creation of awareness through seminars. Assistance should be provided in defining Eritrean national standards and, where applicable, in adoption of other international standards.

A more systematic approach would focus on the following activities:

**Policy Level:** Assist the Government in the establishment of quality, standardization and metrology policies; and in the establishment of ISO 9000 certification.

**Institutional Level:** Assist ESI in setting up sectoral laboratories; in upgrading existing reference standards and procedures and building capacity in the application of the broad range of quality tools.

**Enterprise Level:** Assist to implement the system for quality improvement and where desirable, in establishing specialized laboratories and implementing total quality management (TQM) systems and continuous improvement.

#### (vi) **WOMEN IN INDUSTRY**

Women in Eritrea have proven themselves equal in the difficult times of protracted war and they are determined to play their role in the reconstruction of their country. Yet there are many obstacles to be overcome:

- There is a big difference between urban centres and rural communities
- There are cultural and religious constraints among the population groups.

These differences manifest themselves in the low literacy rate of women, the low opportunities to engage in gainful employment, the high demands on them to take care of their households and families.

A meeting with the National Union of Eritrean Women (NUEW) provided an insight into the many problems of women and activities of NUEW, the official focal point and lobby group for women affairs vis a vis the Government, in absence of an own Governmental machinery. The picture was complemented by the factory visits undertaken and the contact to the Association of Business and Professional Women, who are also part of the NUEW but have an own business going, mainly in the service and trade sectors.

#### **Women workers in factories**

Site visits to the Mereb textile factory and the Asmara ceramics factory, as well as to the Red Sea General Mills showed quite a number of women employed. In fact, in the case of the textile factory, the majority (70%) were women. Equally true, however, is that the majority of women is at the lower skill level, with exceptional assignments as maintenance engineer (textile factory), head of accounting department (Asmara ceramics factory).

Women entrepreneurs in the informal and small scale sector

*Women entrepreneurs in the formal and small scale sector consisting mainly of :*

- (a) Demobilized fighters (re-settlement schemes)*
- (b) Women in rural areas*
- (c) Women in small scale, family owned enterprises (e.g Medabir industrial estate)*

*Whereas the threat to women in the factory environment (currently under public ownership and management) is technology innovation, (f.e. manual sorting of ceramic mosaic stones in the ceramic factory will be replaced by mechanized packing), the problem of the greater number of women in the informal sector is their lack of skills and lack of market access on an individual basis, which call for the need to organize them and work in 'producer networks'.*

Possible UNIDO Intervention

*The UNIDO response will have to take care of both groups in different ways, designing re-training programmes of women factory workers, equally as for men (support to workers displaced by technological change), and programmes for support to women in the informal and small industries sectors, helping them to overcome the constraint of illiteracy and low skills and resource availability.*

*Special attention will have to be given for both groups through support measures like day-care centers, making it easier for women to start gainful employment without falling back on their family obligations. This is particularly important after the disruption in family life as a consequence of the long war which resulted in many women being household heads.*

*With regard to women entrepreneurs, Eritrea is listed as one of the target countries to benefit from the high impact programme designed to promote more meaningful and visible contribution of women to industrial development. Programme activities will commence once the financial resources are secured from the donors to whom the programme has been referred for special purpose contribution.*

**(vii) INDUSTRIAL INFORMATION**

*Having just emerged from a long and protracted war, it is understandable if the authorities do not at the moment have adequate information on the industrial establishments owned by the private sector in terms of their number and location, production and product mix, manufacturing value added, employment, wages, etc. While the Business Licence Office promptly issues necessary permits for setting up enterprises, the record of failures is not available. But even more important to investors are information on rates of capacity utilization and changes in leading indicators. The liberalized economy dictates that effort should be made to collect reliable and accurate information and to make the same available on a timely basis to the numerous users.*

*UNIDO's National Industrial Statistical Programme (NISP) is considered the most appropriate tool to address the problems identified by the Ministry. It places high priority on the users' needs and their ability to access the data quickly. It is therefore not the conventional form of technical assistance as it aims to serve policy-makers, the private sector, potential investors, educational and financial institutions etc. NISP involves inter-related operations relating to*

collection procedures, methods of storage and retrieval, data dissemination and analysis. Training in statistical procedures and computer programming are also included.

Possible UNIDO intervention:

As a first step, however, it will be necessary to assess the current status of industrial statistics in Eritrea, the capacity in the Ministry to collect, process data, store and disseminate to users. On the basis of the information collected, a programme would be elaborated.

(viii) SME DEVELOPMENT

After liberation, Eritrea has adopted a policy of free market and private sector led development SME development is accorded highest priority and a package of incentives and additional facilities have been provided in the Eritrean Investment Proclamation. Small industries (SMIs) are accorded special attention due to their value added and employment creation potential and spatial development effect.

The Government is committed to promote, safeguard and protect investment by the private sector and is limiting itself to creating a conducive and enabling policy and regulatory environment. It will pursue only limited and selected economic activities, where the private sector is weak and/or reluctant to take the first step to invest.

In its efforts towards SME promotion, the Government is adopting an approach via suitable institutional mechanisms. Concretely, to provide equitable regional support, it is favouring the establishment of industrial estates/industrial growth points which will provide decentralized support services to existing entrepreneurs and entrepreneurship development for start-up enterprises. The growth centres will operate out of major district towns in the various provinces and strengthen the industrial base and local production structures.

Balanced development has been declared the goal. However, with efforts to avoid overcrowding in traditional production areas and market saturation with traditional goods, the MTI/DOI is working on a deliberate policy for SMEs based on identified potentialities in terms of resource base and identified market niches and opportunities.

Possible UNIDO intervention:

As a first pilot effort the MTI/DOI identified the Medabir industrial estate as a target area for rehabilitation and expansion. Medabir is known for family based subsistence operations in the metal-mechanic sector. The technology used by the owners/operators is very basic, the production programme very traditional and threatened by substitution products made from plastics. The technical assistance programme will have to address the infrastructural and transport problems, the upgradation of technology and production skills, the change of product mix and market potential assessment, facilitation of access to finance and resource inputs, and general entrepreneurial training.

The experiences of Medabir will then be guiding the establishment of the other growth points or industrial estates throughout the country.

For the medium and longer term, however, assistance could be provided in articulating policies and strategies for SMI development with appropriate institutional support. At the



enterprise level, entrepreneurship development programmes, formation of industry-trade clusters and support for market access, etc. will be pursued.

(ix) RESTRUCTURING AND PRIVATIZATION

*During the Ethiopian occupation, all significant industrial operations were nationalized. At the time of liberation, the Government of Eritrea had some 42 state-owned enterprises on hand which initially were managed by the Ministry of Industry and Trade. As most of the enterprises had significant war damage to contend with, in an initial stage, the Government embarked on a recovery and rehabilitation programme. To date, most of the enterprises have achieved significant increases in capacity utilization which, however, is not sufficient to keep the SOEs viable and competitive in the long run due to obsolete technology and outdated product mix.*

*In view of the policy for private sector led economic recovery, the Government of Eritrea will therefore divest in the long term perspective. The ownership of SOEs has therefore been transferred to the National Agency for the Supervision and Privatization of Public Enterprises established in 1995. The Agency is currently managing the portfolio, with the Minister of Trade and Industry serving as the Chairman of the Board.*

Possible UNIDO intervention:

*Careful assessment of existing capacities and potentials for new product lines based on resources of the country are therefore seen as immediately necessary to provide data and information needed for decision making. It will be the task of aforementioned sector studies, essentially with a view to innovation and participation of joint venture partners, to provide the information base for decision-making and guide the restructuring, innovation and expansion process in cooperation with the Agency exercising ownership rights. As already stated in the investment forum of the COMESA countries, UNIDO will continue its support through its investment promotion network, on a global scale but particularly sees a possibility through IPS Milan, in view of the historical links between Italy and Eritrea.*

*Further, to also investigate other forms of private sector participation, UNIDO will establish contact with the National Privatization Agency for inclusion of the country into its African Privatization network and sharing of experiences and expertise in restructuring and privatization, which would then look into other methods of privatization such as management contracts or broad based ownership changes under conditions of scarce financial resources in the private sector.*

**H. AGREED PROGRAMME AREAS FOR UNIDO COOPERATION**

(based on list in Annex III)

**PHASE I**

<i>Sectoral Support</i>	<i>Institutional Infrastructure</i>	<i>Small Scale Ind. Development</i>	<i>Inform. &amp; Stat., Technology Transfer</i>
# 2.0 Sectoral Studies	# 1.0 Eritrean Standards Inst.	# 4.0 Rehab. of Medabir Ind.Est.	# 5.0 NISP
# 3.2 (b) HRD for ind. sectors (Leather, Ceramics, Textile, building material, Salt)	# 3.1 Capacity-build. in MTI (incl #6 exp. sharing-policies)	# 3.2 (b) Training of SSI entrepreneurs	# 7.0 Techn. Transfer
		# 8.0 Women's programme, inf.sector	

**PHASE II**

<i>Sectoral Support</i>	<i>Institutional Infrastructure</i>	<i>Small Scale Ind. Development</i>	<i>Inform. &amp; Stat., Technology Transfer</i>
	# 9.0 Env. Protection (EAE)		
	# 10.0 Investm. Promotion (EIC)		
	# 11.0 Asmara Chamber of Comm.		
	3.2 (a) Linkage education & Ind)		
* Alternate uses of marine resources: (anchovies, sardines), * Restructuring and Privatization: pilot plant programme	* Privatization Agency	* Boat building	

\* Other potential areas for UNIDO cooperation

*The agreed programme areas of UNIDO cooperation reflect the priorities of the Ministry of Trade and Industry, the discussions with the mission team and inputs from various institutional representatives, public enterprise managers and entrepreneurs. They are not yet fully final in as much needs have to be reviewed made by the highest Government authority, particularly the Macro Policy Department.*

*Nevertheless, implementation in several of the highest priority areas should be started without delay in order to prove the ability of quick response. Initially, UNDP support and UNIDO seed funds in the context of the LDC programme and of IDDA could be explored.*

*With progress in programme formulation, further access to donors can be accepted.*

*UNIDO will also deploy further staff resources for missions, once concrete areas for intervention are certified in order to elaborate programmes for the MTI's review and endorsement. One such concept ready for adaptation could address the priority area 4, Medabir, and regional/rural development through the growth centre approach. Another one that should be pursued with speed is the introduction of the National Industrial Statistical Programme (NISP).*

*The now envisaged regular visits to Eritrea by the UCD will be providing the periodic follow-up needed for keeping active contact and achievement of good results.*

## **MEETING SCHEDULE**

### **Monday 10/06/96**

- 08:00-08:45 hrs. *UNDP Briefing*  
09:00-09:30 hrs. *Meeting with Minister of Trade and Industry*
- *General information about industrial activities in Eritrea*
  - *General information about UNIDO activities and areas of cooperation*
- 15:00-17:00 hrs. *Industrial Regulations*

### **Tuesday 11/06/96**

- 08:30-10:00 hrs. *Technology acquisition and transfer*  
10:00-12:00 hrs. *Meeting with Eritrean Standards Institution*  
14:30-15:00 hrs. *Visit to Business License Office*  
15:00-17:00 hrs. *Visit to Medabir Industrial Estate*

### **Wednesday 12/06/96**

- 08:30-10:00 hrs. *Establishment of industrial estates*  
10:00-11:00 hrs. *Visit to Eritrean Investment Center*  
11:00-12:00 hrs. *Visit to Asmara Ceramic Factory*  
14:00-15:30 hrs. *Meeting with National Union of Eritrean Women (NUEW)*  
15:30-16:00 hrs. *Visit to Asmara Chamber of Commerce*  
16:00-17:00 hrs. *Meeting with Business community*

### **Thursday 13/06/96**

- 08:30-10:00 hrs. *Manufacturing sector study*  
10:00-12:00 hrs. *Meeting with Eritrean Agency for Environment*  
14:00-17:00 hrs. *Visit to Asmara Pickling factory*  
*Visit to Mereb Textile Factory*  
*Visit to women cooperative of ex-fighters*  
*Visit to women garment producer*

### **Friday 14/06/96**

- 08:30-10:00 hrs. *Human Resource Development*  
10:00-11:00 hrs. *Discussion with Privatization Agency*  
11:15-11:30 hrs. *Meeting with Minister, MTI*  
13:30 hrs. *Departure to Massawa*  
15:00-15:30 hrs. *Red Sea General Mill factory*  
18:00 hrs. *Arrival Massawa*

**Saturday 15/06/96**

06:00-09:00 hrs. *Massawa Salt Works*  
09:00-11:30 hrs. *Marine Resources*  
14:30-15:00 hrs. *Eritrea Cement Factory*  
15:00-15:30 hrs. *Return to Asmara*

**Monday 17/06/96**

09:00-12:00 hrs. *Review of Activities*  
15:00-16:00 hrs. *Debriefing and discussion of mission findings*  
16:15-17:00 hrs. *Press Conference*

**Tuesday 18/06/96**

09:00-12:00 hrs *Factory visits*  
*Meeting with ITC experts*  
23:00 hrs *Departure to Vienna*

### **LIST OF ABBREVIATIONS USED**

<i>UNDP</i>	<i>United Nations Development Programme</i>
<i>UNIDO</i>	<i>United Nations Industrial Development Organization</i>
<i>UNCTAD</i>	<i>United Nations Conference on Trade and Development</i>
<i>FAO</i>	<i>Food and Agricultural Organization</i>
<i>ILO</i>	<i>International Labour Organization</i>
<i>ITC</i>	<i>International Trade Centre</i>
<i>COMESA</i>	<i>Common Market for East and South Africa</i>
<i>PRODEC</i>	<i>Finnish aid programme</i>
<i>EPLF</i>	<i>Eritrean Peoples' Liberation Front</i>
<i>MTI</i>	<i>Ministry of Trade and Industry</i>
<i>MTI/DOI</i>	<i>Department of Industry</i>
<i>ESI</i>	<i>Eritrean Standards Institution</i>
<i>SME</i>	<i>Small and Medium Enterprises</i>
<i>SMI</i>	<i>Small and Medium Industries</i>
<i>EIC</i>	<i>Eritrean Investment Centre</i>
<i>EAE</i>	<i>Eritrean Agency for Environment</i>
<i>GEF</i>	<i>Global Environmental Facility</i>
<i>ESID</i>	<i>Ecologically Sustainable Industrial Development</i>
<i>BLO</i>	<i>Business Licence Office</i>
<i>RRP</i>	<i>Recovery and Rehabilitation Programme (WB and donors)</i>
<i>WB</i>	<i>World Bank</i>
<i>IDDA</i>	<i>Industrial Development Decade for Africa</i>
<i>BOT</i>	<i>Build, Operate, Transfer financing mechanism</i>
<i>INTIB</i>	<i>Industrial and Technological Information Bank</i>
<i>NISP</i>	<i>National Industrial Statistics Programme</i>

**SHORT LIST OF NEEDS ACCORDING TO PRIORITIES**  
**(Submission by MTI)**

**1. Standards and Metrology**

*Need UNIDO technical assistance for implementation of projects prepared by the Eritrea Standards Institutes (ESI). The MTI gives priority to strengthening of the institutional capacity of the ESI and preparation of national standards in order to enhance industrial development.*

**2. Sector Studies**

*UNIDO assistance in the study of manufacturing priority sectors with respect to the following:*

- *Technical assistance for reviewing terms of reference*
- *Short list of qualified consulting firms who have the reputation and wide experience in our priority sectors*
- *Technical assistance to conduct the priority sector studies:*
  - *Textiles*
  - *Leather and leather goods*
  - *Salt*
  - *Ceramics*

**3. Human Resource Development**

*(i) At MTI level*

- *SME Promotion*
- *Industrial policies and regulation formulation and analysis*
- *Technology transfer negotiation and selection*
- *Manufacturing project preparation*
- *Industrial environment regulation*

*(ii) At national level*

- (a) Linkage of education system and industrial development*
- (b) Training of trainers in priority sectors*

**4. Industrial Estate**

- *Technical assistance to study and prepare a rehabilitation and expansion project for Medabir*
- *Technical assistance to study and prepare projects of industrial estates in the capital cities of the administrative regions.*

**5. Industrial information and statistics**

- *Technical assistance in setting up MTI industrial information and statistics system*
- *Supply of UNIDO industrial information and statistics*

- *Information/publications on technology selection, transfer and negotiation*
- *Information/publications on training manuals and training materials*
- *Information/publication project study manuals and computer programs*
- *Linking MTI with UNIDO information network.*

6. **Industrial Regulations**

*Experience sharing of other countries on industrial regulation*

7. **Technology Transfer**

- *Experience sharing of other countries on technology development and management.*

8. **Women in Industrial Development**

- *Technical assistance for study of Eritrean women constraints and opportunities in industry and prepare a support service to promote women's role in industrial development.*
- *Technical assistance in accordance to priority needs of the Eritrean Business Women's Association.*

9. **Environmental Protection**

- *Technical assistance based on projects identified by the Eritrean Agency for the environment.*

10. **Investment Promotion**

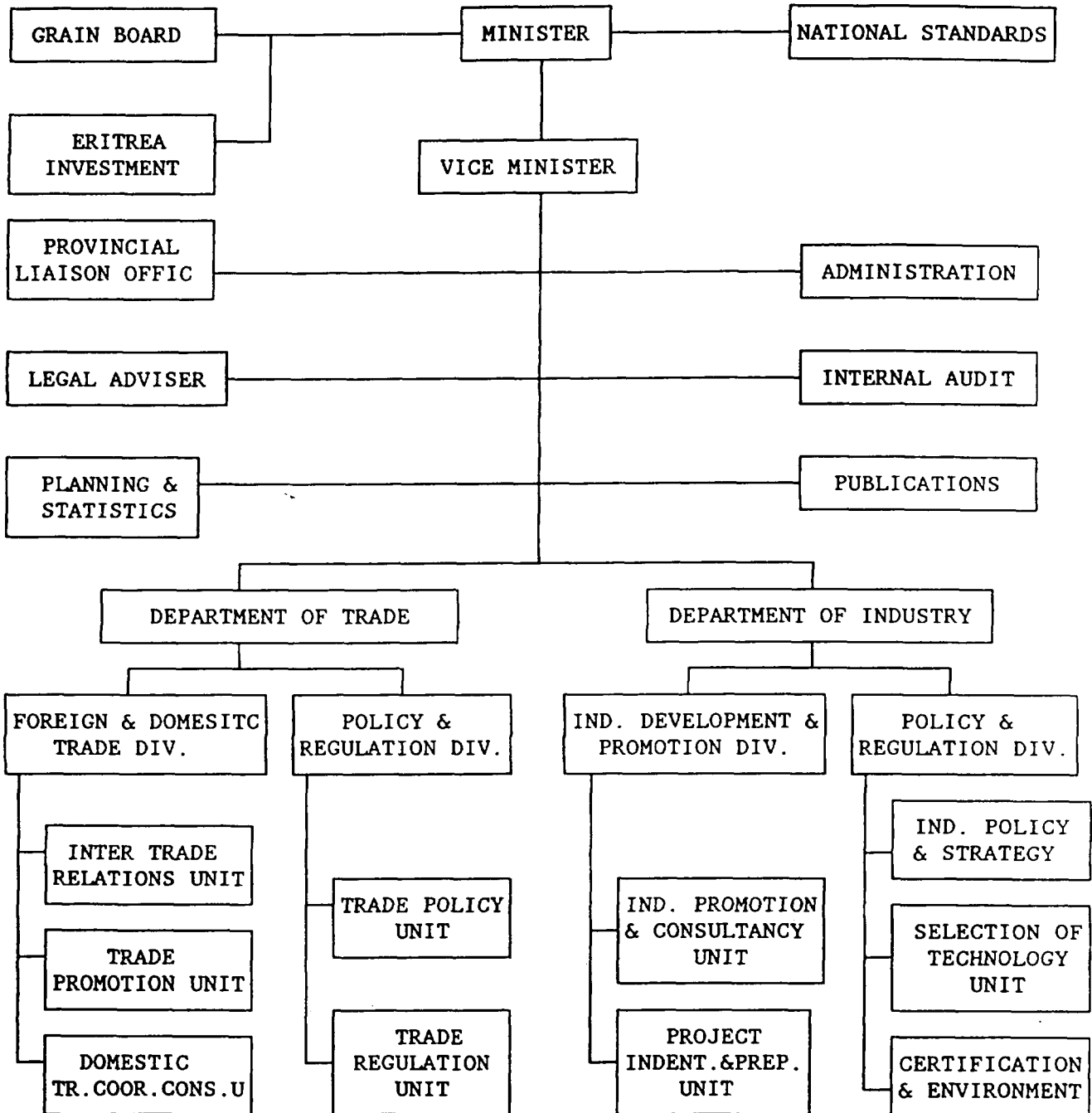
- *Technical assistance based on the request of the Eritrea Investment Centre.*
- *Technical assistance in the preparation of the following publications:*
  - *Manufacturing Sector in Eritrea*
  - *MTI Strategic Plan Document*

11. **Chamber of Commerce**

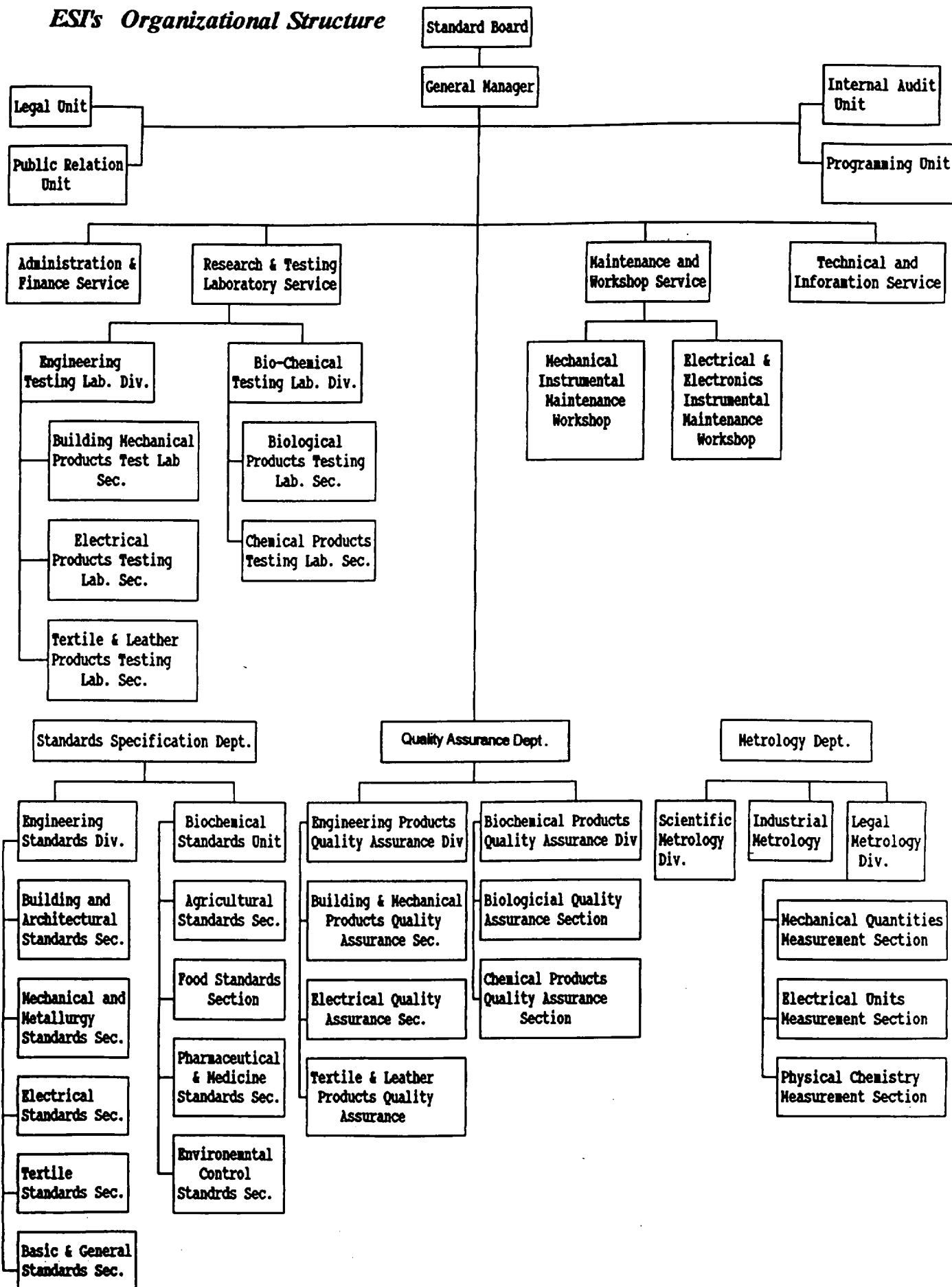
- *Supply of UNIDO publications*
- *Experience sharing to develop industrial development*
- *Strengthening support services of the Asmara Chamber of Commerce.*



**ORGANIZATIONAL CHART (1995)  
MINISTRY OF TRADE AND INDUSTRY**



### ESI's Organizational Structure



## **LIST OF PEOPLE MET**

### **MINISTRY OF TRADE AND INDUSTRY (MTI)**

*H.E. Mr. Ogbe Abraha, Minister of Trade and Industry*  
*Mr. Negusse Ogbe, Head, Department of Industry*  
*Mr. Olem Tschaye, Head, Department of Trade*  
*Mr. Hailom Negassi, Head, Policy and Regulation Division*  
*Mr. Sengal Woldetensae, Head, Industrial Development and Promotion Division*  
*Mr. Asheber Elmicheal, Head, SME Promotion*  
*Mr. Taddesse W. Yohannes, MTI*  
*Mr. Eyob Kahsai, MTI*  
*Mr. Abrahm Kubrom, MTI*  
*Mr. Michael Tseggre, MTI*  
*Mr. Berhane Mesfin, MTI*  
*Mr. Mulugeta Hadish, Computer Programmer, MTI*  
*Mr. Dimetros Afaverk*  
*Mr. Hiwet Melles*

### **UNDP:**

*Mr. Martyn A. Ngwenya, Resident Representative*  
*Ms. Rekha Thapa, Deputy Resident Representative*  
*Mr. Goder Yohannes, SNR National Programme Officer*  
*Mr. Joseph Admekon, National Programme Officer*  
*Mr. Lare M. Sisay, CTA*  
*Mr. Sandrine Tiller, UNV, Programme Co-ordinator*  
*Ms. Givlia Vallese, Junior Professional Officer*  
*Mr. Kei Ichiki, Junior Professional Officer*

### **ERITREAN STANDARDS INSTITUTION (ESI)**

*Mr. Akberom Tedla, Head, ESI*

### **ERITREAN INVESTMENT CENTER**

### **ERITREAN AGENCY FOR ENVIRONMENT**

*Mr. Naigzy Gebremedhin, Co-ordinator*

### **ASMARA CHAMBER OF COMMERCE**

*Mr. Solomon T. Baatai, Manager, T. Baatai & Sons Tannery -- member*

### **NATIONAL UNION OF ERITREAN WOMEN**

*Ms. Saba Mebrahtu, Member*  
*Ms. Azieb Belai, Member*  
*Ms. E. Yohannes, Member*

**FACTORY MANAGERS**

*Mr. Tekeste Ghebre Egziabher, General Manager, Orotta Metal Works (No.2)*  
*Mr. Solomon Tesfamarian Sewere, Production Manager, Asmara Pickling Tannery*  
*Mr. Negassi Goitom, General Manger, Massawa Salt Works*

*Mr. Wolday Xidane, Manager, Eritrea Cement Factory*  
*Mr. Makonnen Asmaron, General Manager, Space 2001*  
*Mr. Assefa Nega Aboy, Deputy General Manager, Space 2001*  
*Manager, Mereb Textile Factory*  
*Manager, Asmara Ceramics Factory*  
*Manager, Red Sea General Mills*

**INTERNATIONAL TRADE CENTRE**

*Mr. Norman J. Caldera, Cardenal, CTA, Trade and Export Development Subprogramme*  
*Mr. Camilo Jaramillo, Consultant (ITC)*

**FOOD AND AGRICULTURAL ORGANIZATION OF THE UN**

*Mr. Yosiff Kahsay, Head, Marine Development*  
*Mr. Etoh, CTA, Red Sea Fisheries Project*

**LIST OF DOCUMENTS COLLECTED**

1. *Macro Policy*
2. *Investment Proclamation No. 59/1994*
3. *Proclamation No. 75/1995 - Establishment of Eritrean Standard Institution*
4. *Strategic Plan Document*
5. *Proclamation for Establishment of Business Licensing Office (BLO)*
6. *Organogram of the Eritrea Standard Institution*
7. *Draft project document on Salt Laboratory*
8. *Strategy for SMI promotions (includes 21)*
9. *Proclamation No. 83/1995. The National Agency for the Supervision and Privatization of Public Enterprises*
10. *Eritrean Women in Business*
11. *National Union of Eritrean Women (NUEW)*
12. *Feasibility Study for the Underwear Factory in Memdefera, Seraye*
13. *Environmental Action Plan*
14. *Eritrea: Options and Startegy for Growth, 1994 (World Bank)*

**REFERENCE DOCUMENTS CONSULTED**

*UNIDO Mission Statement*

*UNIDO Service Hand Book*

*UNIDO in Brief (Today's Opportunities, Tomorrow's Industries, People's Futures)*

*UNIDO Reform (Reform at UNIDO 1994-1996)*

*Investors Guide to Eritrean*

*Eritrea: A New Beginning, 1996 (UNIDO Country Review Series)*

*Manual on Technology Transfer Negotiation*

*COMFAR III Expert for Windows*

*Various UNIDO Publications.*