Industry and Sustainable Development in Sudan
Achievements and prospects

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>I</th>
<th>Introduction</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>Development of Manufacturing Industry and</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Achievement in various Dimensions of sustainable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>development</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Policies directed at the Development of Industry</td>
<td>10</td>
</tr>
<tr>
<td>IV</td>
<td>Policies directed at Industrial Environmental</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Policies Directed at Technology Transfer,</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Particularly Environmentally sound Technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(EST)</td>
<td></td>
</tr>
<tr>
<td>VI</td>
<td>Experience with Integrated Policies and</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Programmes</td>
<td></td>
</tr>
<tr>
<td>VII</td>
<td>Reflection and Future Direction of the Country</td>
<td>21</td>
</tr>
</tbody>
</table>

**Annex:** Industry – Related sustainable Development Indicators 24

**Bibliography** 32
Industry and Sustainable Development in Sudan

I. Introduction:
Industrialization is the driving force of the development process, industry and more specifically, manufacturing is synonymous with development. It involves a number of national plans to achieve goals of adding value to local products, generating employment, building up the infrastructure and increasing economic activity in developing countries. However, the positive economic and social results of industrial growth have been accompanied by serious environmental deterioration, as well as growing threats to health from occupational hazards.

At the same time, industry’s catalytic role in the development process is changing in response to the new global pattern of rapid and accelerating technological change, sweeping trade liberalization, far-reaching deregulation of markets – including the privatization and commercialization of state-owned enterprises – and the globalization of international business.

Principle 1 of the Agenda 21 indicates:
“Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature”.
Concept of sustainable development remain to be the basis for an integrative approach to economic policy.

The main environmental problems in Sudan are considered to be the following:
- Desertification and land degradation.
- Deforestation.
- Wildlife depletion.
- Use of agrochemicals.
- Diseases related to water provision for irrigation.
- Uncontrolled urbanization.
- Marine and Coastal pollution.
- Industrial pollution.

The challenge now is to ensure that the future development of the Sudan is sustainable, i.e. that economic development and Social needs / goals are met without causing damage to human health or the environment. Industry’s role in this must be to continue its part in the development of the country through continued growth, wealth creation and employment, but not at the expense of human health and the environment.

The key components for sustainable strategies include:
1. Conservation of natural resources and preservation of non-renewable materials.
2. The cleaner production approach.
3. Integrated waste management.

The implementation of such strategies relies on governments, industry and industrial organizations and NGOs.

When industrial development began in Sudan in the early 1960s, it would appear that the main concern was the technical and economic feasibility. The already available legislation on occupational health and hygiene appears to have been deemed adequate to cater for the required safety and for checking industrial hazards. The management or treatment waste was not known. Sugar factories at the beginning did not know how to deal with the molasses and bagasse. They simply dumped it away. Tanneries and textile factories also dumped their waste with little or no treatment.

The major socio-economic development plans have been prepared during the post-independence period in Sudan: the Ten Year Plan 1961 – 1971, the Five Year Plan 1970 – 1975 and the Six Year Plan 1977 – 1983. In the Ten Year Plan much emphasis was put on the modernization of the agriculture, but no environmental protection aspects were included. Neither did the Five Years Plan dealt with any explicit environmental issues, excluding some mentions about the enhancement of rural life by provision of water.

However, in the Six-Year Plan the issues of natural resources and environmental protection were given a high priority. Emphasis was put on ecological balance and conservation and rational use of natural resources.

Even though industrial pollution on the whole may not be the most severe environmental problems in Sudan due to the present relatively small scale of the industry, the situation may deteriorate rapidly if the industrial sector expands and environmental protection is not integrated into the industrial development on all levels. Furthermore, industrial pollution is concentrated on the most densely populated areas, which emphasizes the importance of controlling it.

A national economic conference was held in 1986. It spelled out the importance of incorporating the environmental dimension into economic development plans and policies. However, most of its recommendations were directed to problems concerning natural resources and the desertification process.

In 1991, the Higher Council for the Environment and Natural Resources (HCENR) was established to be the highest national authority to take the lead role in the formulation, supervision / coordination and implementation of national environmental strategies and policies. The HCENR also acts as a secretariat for the inter-ministerial committee of the council of ministers and closely works with National Planning Council. The HCENR has branch councils in the states.

The 1992 United Nation Conference on Environment and Development (UNCED) held in Rio de Janeiro and Agenda 21 adopted there recognized the pressing environment and development problems of today and aimed at
attaining long-term goals of sustainable development. The 1997 Special Session of the General Assembly to review implementation role of Agenda 21 reaffirmed the fundamental role of Agenda 21 as a basis for achieving sustainable development. It was stressed that achieving sustainable development objectives required the integration of economic, environment, institutional and social components and cannot be carried out without greater integration at all policy making – and operational levels including NGOs and local communities.

The 1997 Special Session for the General Assembly also called on all countries to elaborate national sustainable development strategies by the year 2002.

The Government of Sudan seriously considered and adopted environmental policies after the World Summit of 1992. Extensive efforts have been made by the government to integrate environmental, economic and social objectives into decision making by elaborating new policies and strategies for sustainable development and adopting existing policies and plans. The most important of these are the requirement that an Environmental Impact Assessment be conducted before development projects receive final approval.

Sudan has also signed the three world conventions and created the Ministry of Environment and Physical Development in response to the sustainable development requirements.

Environmental protection was further emphasized when environmental strategy was approved as part of the National Comprehensive Strategy 1992 – 2002.

At present the government is determined to move in the direction of privatizing the remaining public sector enterprises, the second in declared policy is attraction of investment from both regional and international financial institutions. The third and important that is Sudan has joint the Common Market for Eastern and Southern Africa (COMESA). Sudan also determined to join WTO. Under these circumstances Sudanese business whether private or governmental, is obliged to comply with the international requirements, namely ISO 9000 and ISO 14000.

Sudan constitution 1998 calls in article 13 for the state to strive for conservation of the environment in a sustainable manner for welfare of future generations. The government also issued in March 2000 the Environment Protection Act.

The 1992 United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro and Agenda 21 adopted there has focused attention in Sudan on sustainable development as a concept that comprises environmental privileges, but goes beyond that to integrate them organically within socio-economic development strategies. Sudan looks at sustainable development as an integrated approach to development based on policy formulation, implementation and monitoring.
The government has been carrying out economic reforms with the objectives to lay the foundation for sustained growth and development. The reform programmes involved deregulation and trade liberalization and financial sector reforms. Through these reforms Sudan has been moving away from traditional interventionist policies and moving towards a free market economy, transforming the economy from a public sector – led economy to a private sector – led economic growth and development. The industrial sector has a considerable potential for contribution to employment, productivity, trade and overall economic growth and development. The government of Sudan has laid particular emphasis on agro – industries and small -scale industries. There are, however, several constrains at the policy, institutional and subsectoral levels. An integrated programme has been designed to address some of the problems. The essential strategy of the programme is based on capacity building in the public and private sectors to manage the industrial development.

According to UNIDO Service Modules the programme has the following six components:

1. **Industrial Policy Formulation and Implementation In the Context of Economic Reform.**
   **Immediate objectives:** to strengthen the capabilities in the public and private sector bodies and institutions for policy formulation and implementation in the context of the economic reform of the management of industrial development.

2. **Small and Medium Enterprise Policy Framework and Business Advisory Services.**
   **Immediate objective:** To strengthen the government capacity to design and implement overall national strategy and supporting policies, to promote and strengthen the SME sector in the country. To establish and strengthen capability of the Industrial Research and Consultancy Centre (IRCC) to provide business advisory more widely available in Sudanese and to integrate general business consulting activities with more technical services.

3. **Investment and Technology Promotion:**
   **Immediate Objective:** To establish a restructured Investment Promotion Agency (IPA) within the Ministry of Industry and Investment and to strengthen its capacity in investment promotion.

4. **Industrial Statistics and Information Networking:**
   **Immediate Objective:** To strengthen the capabilities in the areas of industrial statistics in the Ministry of Industry and investment and in cooperation with Central Bureau of Statistics (CBS) and the Industrial Research Consultancy Centre (IRCC). To Formulate Business Plan for the Industrial Technology and Market Information Unit (ITMIU) at IRCC and provide informal training in information acquisition and dissemination, including computer aspects and to organize a workshop and demonstration of information products and information networking plans.
5. Upgrading Agro- industries and related Technical Skills:
**Immediate Objectives:** To strengthen the capabilities and capabilities of the industrial technology institutions to provide advice and training to industrial enterprises as well as to the government on appropriate policies to address the identified priority needs and concerns of the enterprises. To provide policy advice and technical guidance in the agro-related industries and income generation activities including marketing to the Area Development Scheme (ADS) and Area Rehabilitation Scheme (ARS). To provide advice to the government on the most economical use of molasses, a by-product of the sugar industry.

6. Industrial Pollution Control and Waste Management:
**Immediate Objective:** To promote environmental protection and sustainable industrial development through pollution prevention and industrial waste management.

Taking into consideration Sudan’s federal structure of administration, the 26 states governments need to play important role in the implementation of the national strategy. In this context, mechanisms have been created for public involvement and participation of the society, private sector, research and academic institutions in the sustainable development process.

Among the key measures that need to be taken to face challenges of national sustainable development strategies are: To organize a series of seminars and workshops both to built awareness regarding sustainable development and ensure the involvement of all key actors, most notably the media, in the sustainable development process. Moreover, establishment of a national environmental and pollution abatement fund is considered to channel revenues from pollution charges, taxes and other sources to priority environmental investments.

II. Development of Manufacturing Industry and Achievement in various Dimensions of sustainable development:

One of the most visible results of development in Sudan is the growth of industry. Industrialization started in Sudan when first a cement factory was established in 1918. Food processing industry started in the 1940s with vegetable oil extraction and laundry soap production. In addition, there were many traditional handicraft industries. The ginning of cotton encouraged the beginning of industry in Sudan in the early 20th century.

The concept of the “Industrial development” emerged in Sudan soon after independence. With the expansion of cotton production, the number of ginning factories has increased, with the Gezira Board alone operating the world’s largest single ginning complex. There are over 25 spinning and weaving mills, the majority of which were build in the 1960s and 1970s.

Further major expansion in the industrial sector was achieved with establishment of sugar industry in 1960s. Since then the industry has been
considered as one of basic elements of sustainable social and economic development, industry creates new jobs and means of diversification of personal and national incomes. The benefits of industrial production can be seen in all aspects of life, from the range of consumer goods available, to the efficiency of the transportation system, to the advances made in communication technologies.

During the 1960s and following decades economic development was characterized by central planning and dominance of the public sector. Development activities accelerated in all sectors of the economy, and the government in line with investment in heavy industries, invested in large infrastructure projects, such as roads, airports, ports, housing, water and power supply and telecommunications.

Industrial activities in the country consist of extractive and manufacturing industries. Sudan’s manufacturing subsector are classified according the International Standard Categories (ISO) as follows: food industries, spinning and weaving, tobacco products, engineering industries, chemicals and pharmaceuticals, building materials, non-metallic mineral products, metallic-mineral products, packing and packaging products, printing and publishing, rubber products, tanning and processing of leather, saw milling and paneling of woods and paper and paper products.

In the manufacturing sector, the country has witnessed a considerable increase in the number of factories. Activities are centre in the processing of agriculture products, particularly textile, sugar, oil seeds, vegetable and fruits, soft drinks, starch and glucose, leather products, and light industry subsector. Private sector accounts for over 70 per cent of GDP in the Sudan, 84 per cent of manufacturing establishments, over 80 per cent of gross output and over 50 per cent of total gross capital formation. After the recent privatization programme the share of the private has become even more dominate.

The traditional sector accounts for about 25 per cent of total private investment. It takes the form of private companies, cooperative enterprises and joint venture.

The industrial sector in Sudan is still considered premature, inefficient, capital intensive, highly dependent on imported inputs and dominated by the productions of consumer goods.

The industrial sector is recently supervised by the Ministry of Industry & Investment at the federal level and by similar ministers at the state level. Industrial Research and Consultancy Centre (IRCC) provides adequate research and advisory facilities to industry. Also, the Sudanese Standards & Metrology Organization (SSMO) safeguards the interests of industry by ensuring full compliance to standards both at the level of raw materials and inputs used and the final products.

The Sudanese economy achieved a noteworthy performance that is reflected by a sustained growth rate over the period 1992 –2000. Figure 1 below
presents the positive evolution of GDP growth over the period of 1992 – 2000. The GDP growth rate increased from 6 per cent in 1999 to 8.3 per cent in 2000. This growth is mainly due to the increase of the contribution of mining (exploitation of Oil) to GDP.

\[ \text{Figure 1: GDP growth rate (\%)} \]
\[ 1990 - 2000 \]

\[ \text{Source: Ministry of Finance and National Economy} \]

The contribution of the industrial sector to the country’s GDP remains small. It had increased from an annual average of 7.5 per cent in the eighties to 16 per cent in the nineties. The manufacturing industries registered an annual average contribution of 9 per cent of GDP in the nineties.

The average share of industry’s total contribution to GDP is as follows:
- Manufacturing: 56 per cent of total sectoral contribution to GDP.
- Construction: 30 per cent of total sectoral contribution to GDP.
- Electricity and petroleum refining: 14 per cent of total sectoral contribution to GDP.

Figure 2 below shows the total industrial sector contribution and manufacturing industry contribution to GDP.

\[ \text{Figure 2: Contribution to GDP (\%)} \]
\[ 1992 - 2000 \]
The share of exported manufactured exports has remained at about 15 per cent of all exports over the past five years. The selection of exported goods is very limited. The largest exporting group within manufactured goods was edible oil and oil cakes and semi-processed hides and skins. The third largest group was sugar and sugar by-products (molasses). Other items included cotton yarn, starch and glucose and pharmaceutical.

The importance of the industrial sector lies largely in its potential contribution, based on the present under – utilized capacity. At least one third of manufacturing value-added products comes from traditional small-scale industry. The sector is also a valuable source of employment and income for many Sudanese.

Food processing, textile and leather and leather goods are the main sub-sectors. Among them the food processing is the dominant subsector in terms of the share in MVA. It had been around 50 per cent and risen to 70 per cent recently.

Manufacturing activities are highly concentrated in Khartoum and central regions. The two regions accounts for about 60 per cent of the manufacturing establishments, 80 per cent of total manufacturing employment and 75 per cent of manufacturing gross output.

Other planned industrial areas with adequate basic services are located in most of the big towns in the country. Plots of land in these areas are allotted as part of the concessions granted to approve industries.

There are two free zones in Sudan, the Red See Free Zone and the AL Gaily Free Zone. Investment in these Free Zones enjoy more concessions than those Located inside the country. They enjoy exemption from business Profits Tax for at least ten years.

Employees in these investments are exempt from personal Income Tax. Projects in the Free Zones allowed to employ foreign labour without restrictions. They are also allowed to charge foreign currency for the goods and services they produce. Foreign investors in these Free Zones are encouraged to invest in infrastructure like electricity generation, telecommunication, etc.

Government development plans are giving more and more emphasis on the rehabilitation of existing production units as a necessary step towards raising their utilized capacities and improving their commercial viability to prepare
them for divestment. New projects are directed more and more towards improving the infrastructure to induce more private investment.

There are still a number of public enterprises remaining from the first privatization programme 1990 –1993, which offer good investment opportunities. In the industrial sector, these include factories in the weaving, cement and food sub-sectors.

The current privatization programme comprises a long list of enterprises which may attract the attention of potential investors.

The limited contribution of the industrial sector in the GDP, the low level of the utilization of existing production capacities of the factories and the present condition of the plant & machinery give a very wide scope of opportunities for investment in rehabilitation, vertical investment, while the big gap between the supply & demand for industrial goods call for investments in new industrial capacities both for local consumption and for export.

A large part of the existing industrial units has to be replaced or rehabilitated. The ministry of Industry has identified some industrial sub-sectors for priority attention with regards to rehabilitation with the aim of improving productivity and raising the utilised production capacities and enhancing export capabilities.

### III. Policies directed at the Development of Industry:

At independence in 1956, the first national government embarked on industrialization as a means to broaden the economic base. An industrial policy was spelled out in the first Industrial Act in 1956. The principles of the industrial policy were further reinforced in the first "Ten Year Plan of Economic and Social Development of the Sudan (1961 - 1970)". According to this plan, the development of manufacturing was ranked third in sectoral development. In the early 1970s, the Industrial Investment Act was revised and in 1980 a new Investment Act was prepared, unifying the incentives granted to all types of investment in all industrial branches. This Act was followed until the issuance of the "Encouragement of Investment Act" in 1990.

Sudan has made considerable efforts to reform its economy since the early 1990s. Following the long economic deterioration in 1992, the Government of Sudan launched the ten-year Comprehensive National Strategy (CNS). The objectives of the CNS covering the period 1992 - 2002 have been expressed in the context of the national economic reform, with economic policies of liberalization, privatization, private sector, development and market orientation. The economic development strategy stipulates the following national objectives:

(i) Attainment of food security through extension of cultivated area and intensification of agricultural production;

(ii) Increase of agricultural productivity of staple food grains;

(iii) Expansion of agro-based industries, via promotion of private investment;
(iv) Promotion of agricultural exports; and
(v) Maintaining environmentally sound practices.

The industrial development strategy in the Sudan, is based on the objectives of the CNS and adopting the Alliance for Africa Industrialization Plan, includes:

- Development and enforcement of national enterprise capabilities.
- Linking agriculture and industrial policies.
- Ensuring the private initiatives in the industrial developing processes.
- Special attention to be given to small and medium and artisan industries.

Following the liberalization policy in 1992, and in response to the removal of controls on prices, the abolition of export and import licensing system, and the start of the privatization programme. A new "Investment Encouragement Act" was issued in 1996, aiming at encouraging both domestic and foreign private investments. The provisions under the Act included exemptions from customs, excise and business profit taxes for a maximum period of 10 years. The Act also guaranteed against nationalization, and confiscation, including the right to repatriate profits.

In the context of the economic liberalization and reform and transition to a market-orientated economy and the new role of the Government to create an enabling environment and facilitate the promotion of the private sector for industrial development and at the same time the new environment for the private sector to take the opportunity and to acquire the competitiveness and lead the particularly related to the articulation, formulation, implementation and monitoring the policies, and to the formulation of strategies and clearly defining the support programmes based on those policies and to implement them effectively. The above-mentioned capabilities need to be strengthened in the Ministry of Industry and in the lead private sector institutions such as the Chamber of Industries Association. The development of these skills in policy formulation, implementation, and monitoring and defining support programmes would strengthen their capability for the strategic management of the industrial development in the new liberalized environment and market-led development.

The Ministry of Industry and the Chamber of Industries Association have initiated activities for policy dialogue. However, these initiatives are weak in that the mechanisms are yet to be functionally operative. The mechanism of consultative and interactive policy formulation has to be strengthened.

Appropriate industrial policy for the development of women entrepreneurship is essential for the promotion of participation of women in entrepreneurial activity, there is a need to strengthen the capacity in governmental departments, private sector and the SME related parastatal organizations in assessing the requirements and constraints and to enhance opportunities for promotion of women.
In order to address the above problems in the area of policy formulation and implementation and monitoring, the following areas of intervention have been identified:

- Policy analysis and the writing of position papers.
- Policy formulation especially the derivation of new policies and the conduct of policy dialogue with partners.
- Policy implementation, particularly the devising of new instruments and the involving of partners
- Policy monitoring, including areas and jurisdictions outside the capital over coming the constraint of lack of feedback of the information.

In the area of industrial policies themselves, much attention will now be paid to the creation of more links with the Sudanese economy to bringing up of far more new, small and medium sized enterprises that serve other enterprises in Sudan. The important issue is the creation of income and employment multiplier effect.

The integrated programme aims at making a significant contribution to fulfilment of the Sudan's industrial policy objectives that emphasize the development of small and medium sized industries, programmes of technology transfer, and the environmental aspects of industrial development.

The policy component of the Integrated Programme aims at strengthening the capacities in the Ministry of Industry and Investment and Chamber of Industries Association in the areas mentioned above.

Utilizing UNIDO's new approach to technical assistance, a programme of integrated service modules will be established and carried out by UNIDO staff and international and national consultants, in cooperation with officials from the Ministry of Industry and Investment, Finance as well as staff from the Chamber of Industries and selected industry institutions.

Policy making capacity will be built through the following strategies:

(I) Establish a policy unit and strengthen the Investment Promotion Unit in the Ministry of Industry and Investment.

(II) Create a pro-SME policy that favors companies making intermediate products, thus linking Sudanese firms to Sudanese firms, and

(III) Set-up a credible and comprehensive feedback reporting system that serves both the private and the public sectors.

IV. Policies directed at Industrial Environmental Management:

The industrial development strategy in Sudan gives priority to the rehabilitation of the major industrial areas with respect to improvement of infrastructure such as roads, water supply, power supply, sewer systems and
other factors. This strategy also takes into consideration the importance of incorporating the environmental dimension into economic development plans. However, the relationship between environmental policies and industrial competitiveness has not been adequately examined. Available evidence suggests that the link between the two is complex and that in general the impact of more stringent environmental regulations on competitiveness should be insignificant in the medium to long term. Possible exceptions to this may arise in the case of eco-labeling requirement by developed country importers, and certain small-scale sector. In this context, the economy as a whole should be able to maintain its competitive position in world market despite stringent environmental regulations. For the near future, the real issue concerns the effectiveness of environmental expenditures in terms of reduction of pollution emissions per unit of output.

A number of issues relevant to this central concern are presented as follows:

1. **Implementing Ecologically Sustainable Industrial Development Strategies:**

   Agenda 21 for achieving sustainable development in the 21st century calls on Governments to adopt National strategies for sustainable development (NS) that "build on and harmonize the various sectoral, social and environmental policies that are operating in the country."

   Being prepared (NS) focuses almost exclusively on development issues and do not integrate industrial and environmental concerns. It does not consider industrial - specific environmental objectives nor time frames for achieving them. Moreover it does not specify how specific industrial sub-sectors and plants will meet environmental objectives.

   Moreover it is formulated with minimal involvement of industrial institutions and private sector associations.

   To bring together industrial development and environmental objectives it is necessary to:
   - Establish environmental goals and action plans for the industrial sector.
   - Develop an appropriate mix of policy instruments that support the goals of those plans.
   - Design appropriate monitoring and enforcement measures to realize those goals.

2. **Applying Cleaner Production Processes and Techniques:**

   Traditional approaches to pollution reduction have been based on the application and end-of-pipe technologies in order to meet discharge standards. However, the growing recognition that reduction at source is a potentially more cost - effective method of abatement is resulting in replacing end-of-pipe technologies with cleaner production processes.

   Major constraints in adopting cleaner production methods relate to:
♦ Lack of awareness about the environmental and financial benefits of cleaner production activities.
♦ Lack of information about techniques and technologies.
♦ Inadequate financial resources to purchase imported technologies.

A coordinated effort by industry, government and international organization can go a long way in overcoming these constraints.

In this context key questions that need to be addressed are as follows:

(a) Need for local capacity building, information dissemination, training and education.
(b) Need for sub-sectoral demonstration projects.
(c) Need for increased cooperation with environmental market sectors in developed countries.
(d) Need for life-cycle analysis and research on environmentally compatible products.

3. Implementing Environmental Management Systems:

Environmental Management Systems (EMS) are necessary to enable plant to achieve and demonstrate sound environmental performance by controlling the environmental impact of their activities, products and services.

The basic tools to ensure compliance with national and/or international requirements (such as ISO 14000) and continually improve its environmental performance include:

♦ Environmental auditing.
♦ Environmental reporting and
♦ Environmental impact assessments.

In addition, the adoption of EMS may require extensive training of corporate staff. A practical and effective means of doing this is through the design and support of joint capacity strengthening programmes by industry association and bilateral and multilateral agencies.

4. Managing and conserving Water Resources:

It is estimated that by 2025 AD there will be global crises in water resources. Accelerated growth of industry will lead to increase in industrial water use. Moreover, major industrial water pollutant load are expected to increase considerably in the near future. Therefore, to better manage water resources by industry, there is a real need for integrating demand trend and use patterns.

The main elements of an industrial water management strategy can be identified as follows:

♦ Analytical services.
5. Using Market-Based Instruments (MBIs) To Internalize environmental Costs:

As complements to command and control measures for resource conservation and pollution prevention in industry. MBIs represent a useful and efficient cost-effective policy measures that internalize environmental costs.

A plant's decision to invest in clean production depends primarily on the following factors:

1. Relative costs of pollution control in overall production costs.
2. Price elasticities of supply and demand for intermediary and final goods, and
3. Competitive position of plant in a particular industrial sector.

6. Addressing Concerns of Small-Scale and Medium-Scale Industry (SMI):

Small and medium-scale enterprises not only contribute to productivity growth and employment but are also important as collective sources of localized pollution loading such as organic wastes in water effluent, as well as hazardous wastes - heavy metal sludge, solvents, waste oils, acidic and alkaline wastes, photo wastes, etc.

Often these wastes are disposed of in an unsafe manner and are extremely difficult to monitor. These problems are further compounded by the fact that for many of the SMIs the costs of control in relation to output may be too high, so even a modest increase in the costs (of environmental regulations) may threaten their viability. Even though the technological solutions for pollution prevention and control may be well known and easily available, there is no guarantee that they will be adopted. Moreover even when policy measure are in place, their enforcement and monitoring is a real problem for SMI sector on account of their large numbers and diversity. It is clear that the environment problems of SMIs require special attention and special measures to address their particular problems.

7. Counteracting threats from increased Eco-labeling Requirements:

The increase export orientation of production makes it necessary to maintain competitive position in world markets. The emergency of a wide variety of eco-labeling requirements and lack of timely information on the multitude of schemes may adversely affect certain export sectors.

Needed initiatives to counteracting perceived threats can be presented as follows:
Information dissemination.
- Life cycle analysis.
- Establishing certification centers.
- Infrastructure support.

8. Implementing the United Nations Conventions affecting sustainable development:

Sudan signed and ratified the Vienna Convention and its Montreal Protocol on substances that deplete the ozone layer in January 1993. The country programme to phase-out Ozone Depleting Substances (ODS) was compiled and approved in March 1994. The country programme has served as a general guideline for the government and environmental authorities in developing phase-out actions and measures supporting them. The phase-out of ODS has started in the industry and 50 per cent of ODS has been phased out in refrigeration, aerosol and foam sectors. Sudan also ratified the United Nations Frameworks Convention on Climate change (UNFCCC) in November 1993, committing itself to active cooperation with the global community to address the problem of climate change. To comply with the requirements of the UNFCCC, the national inventory of Greenhouse Gas (GHG) in Sudan was conducted using the standardized methodology. GHG emissions have been calculated for most of the source/sink categories identified in different sectors, including industry. The Stockholm Convention on persistent organic pollutants was signed by Sudan in 2001.

V. Policies Directed at Technology Transfer, Particularly Environmentally sound Technology (EST):

Sudan intends to adopt industrialization increasingly as the prime mover of social and economic development. This is reflected in several policy documents including, Development Plans, especially the current Comprehensive National Strategy (CNS).

Industrialization for sustainable development depends on the effective application of scientific knowledge and skills for the commercial production of goods and services. Industrial technology is highly commercialized, protected and exploited by the few who develop it.

Technology capacity refers to the ability to assess, use, assimilate, adapt, improve and develop technologies that are appropriate to changing circumstance. Such capacity is embodies in human resources and institutions.

Although technology was used in Sudan many years ago, there was not any clear, approved and known technology policy to assist the decision-makers at all levels.

Generally, technology transfer and development was characterized by:
Inadequate identification of potential industries.

Poor information system to identify technology sources.

Acquisition of technology in a package form without proper evaluation.

Low level of utilization of technology institutions to improve indigenous capacity.

Weak technology diffusion.

In the early 1970s, technical and technological researches were initiated within the Sudanese R&D units and institutions.

Various institutions which are directly or indirectly related to technology transfer and development exist in Sudan to mention a few:

- **The Ministry of Industry and Investment (MOII)**
  
  The (MOII) is responsible for the industrial sector, including the overall policy formulation, implementation, monitoring, planning and development.

- **The Sudanese Chamber of Industries Association (SCIA)**
  
  The SCIA is the official body representing the industrial private sector in the Sudan. It is an association of sub-sectoral industry chambers such as Food Industries Chamber, Leather and Footwear Chamber, etc.

- **The Industrial Research and Consultancy Center (IRCC)**
  
  The IRCC is a national center for promoting and developing industry in the Sudan. Its functions include preparation of industrial studies, research, consultancy and industrial services.

- **National Leather Technology Center (NLTC)**
  
  The NLTC is charged with the responsibility of upgrading skills for both technicians and artisanal labour in tanneries and leather goods sectors.

- **National Food Research Centre (FRC)**
  
  The FRC has the responsibility to provide services to the food processing industries in the private sector.

- **National Textile Industry Support Centre (NTISC)**
  
  The NTISC provides the government with advice on policies to promote the development of the textile industry sector, as well as to the enterprises in production, marketing of textile products.

  The newly formed Ministry of Scientific Research & Technology (MSRT) is the official body charged with policy making responsibility on R&D and technology transfer issues. The IRCC, which is now part of the (MSRT) is thus further positioned to be able to integrate its role within the technology transfer network that is developing in Sudan.

Sudan is now exercising a new economic policy geared towards free-market economy. Agricultural - development - led - industrialization strategy is set.
This is to be attained through promotion of labour intensive technology and utilization of domestically available raw-materials.

Recently, a technology transfer policy is also pronounced. This would allow evaluation and monitoring of foreign technologies based on the strategy of the country.

A national science and technology policy is also initiated with the aim of building science and technology capabilities as an instrument for economic development. The policy contains the aims and purposes of science and technology. Guidelines and strategies towards increasing science and technology capabilities, sectors and programmes to which priority is given, organization and structural set up of institutions source of support and cooperation.

Technology-related programmes and undertakings continue to be crucial to Sudan. There is the urgent need to improve productivity, expand and range of alternatives and choice for technology users and facilitate the acquisition process.

It is essential for a country to attract and make optimum use of investment and technology flows for growth and development. The opportunities depend on the existence of an enabling environment. To create such an environment it needs capacity in terms of professional skills, to promote investment and to management technology transfer and innovation, and the relevant institutions.

Towards this end, there is a need for capacity building for institutional development including provision of assistance in the establishment and upgrading of Investment Promotion Agencies, definition of their legal status, organization or restructuring of the Investment Promotion Agency and assistance in formulating the operational plan. The investment promotion staff need training in feasibility analysis, reporting, technology transfer, negotiating techniques, aimed at developing skills related to assessment of technology options and most importantly ensuring that the technology being acquired meets the technical and economic needs of the recipients and drafting appropriate contacts etc. Training is also needed in the preparation; negotiation and implementation of industrial partnerships such as joint ventures and strategy alliances.

There is a need for capacity building and institutional strengthening in the Ministry of Industry and Investment in its restructuring, particularly in the areas of investment policy, investment promotion, technology transfer negotiation, techniques networking and Internet connectivity.

The capabilities of the staff need to be strengthened in the above-mentioned areas namely, investment promotion, technology, networking and Internet connectivity; operation, negotiation and implementation of industrial partnerships such as joint ventures; in industrial project identification, appraisal and promotion to ensure proper investment decisions; and in formulation of promotion strategies and techniques based on the specific strengths and advantages Sudan has to offer. The strategies would include the aspects of foreign investment, techniques to investment and technology promotion and targeted promotion strategies.
The investment promotion department also needs to be trained in the development and preparation of investment guides, portfolio of business opportunities, formulation of business plans.

The departments are also in need of various software programmes and systems as required in carrying out the above functions.

It has already been stated that Sudan does not have a clear-cut policy on technology transfer and acquisition. It is also important to point out that socio-economic development in Sudan has to be science and technology driven. Economic aid though loans has already proved a burden through debt accumulation and servicing. This situation calls for a deliberate change towards adoption of a development approach which will have minimal dependence. In this context, Sudan through the ministry of Industry and Investment, is in the process of rolling both human and financial resources for developing an "Industrial Technology Policy". No doubt the Alliance for Africa industrialization will become a major resource.

It is also expected that UNIDO will play a key role in facilitating the formulation of the policy.

VI. Experience with Integrated Policies and Programmes:

Foreign trade and increased integration with the world economy through Foreign Direct Investment (FDI), joint venture and non-equity cooperation are the main forces that drive industrialization. Those countries that have globalized the most by opening up their counties to foreign trade, investment and non-equity external, links have also achieved the fastest industrial and GDP growth. Some stagnation experienced by countries and regions that have not yet participated significantly in the globalization process, is explained by their failure or inability to integrate more fully with world economy by increasing and diversifying their export, and mobilizing investments including portfolios and FDI.

Sudan with its rich resources base in agriculture and minerals has the opportunity to follow a source-based industrialization strategy, developing the capacity to process and beneficiate raw materials, thereby adding value and enhancing its bargaining power in the world market.

The Government of Sudan (GOS) has been undertaking economic reform programmes within the framework of the National Comprehensive Strategy (NCS) (1992 - 2002). The objectives of these programmes were essentially to lay the foundations for sustained growth and development. In 1997, the GOS had embarked on an IMF-monitored comprehensive stabilization programme, with the objective of reducing inflation and external deficit, to stimulate economic growth so as to alleviate deregulation, trade liberalization, fiscal and financial sector reforms, tax reforms and privatization. These reform programmes, although they had achieved initial successes, had become increasingly unsustainable due to the lack of international support. More importantly, for the economic reforms to succeed, it is essential to strengthen capabilities in the productive sectors along with capacity to manage the transition. The macro-economic performance in 1997 exceeded government expectations. Through these economic reforms, the Sudan has
been moving away from traditional interventionist policies and moving towards a free market economy characterized by liberalization of prices, reduction of subsidies, and deregulation of foreign trade. The reforms have also implemented a privatization programme. These reforms have been gradually transforming the economy from a public sector led economy, heralding a new era with lead role for the private sector in the industrialization process of the country.

The public and private sectors, however, need to gear themselves up for management of industrial development in the context of the liberalized environment. The private sector needs to upgrade skills, technology and management capabilities to take advantage of the enabling environment created by the economic reform and become competitive in order to enjoy the opportunities offered by the increasing globalization of the world economy.

The economy has extensive natural resources. It has a great potential to develop agriculture, improve its productivity, rapidly develop agro-industries and expand its exports. In order to realize this potential, it has to overcome the constraints and build its capabilities to enhance its industrial competitiveness.

The UNIDO inter-disciplinary team during its programming mission to the Sudan in December 1998, had extensive consultations with the Government departments, public and private institutions and industrial enterprises and agreed, although the problems of industrial development are multifaceted and so are their solutions, that the UNIDO integrated technical assistance programme should be focussed and should address selected critical areas related to the following, falling within the framework of the new UNIDO Service Modules, namely:

(a) Industrial Policy Formulation and Implementation;
(b) SME Policy Framework;
(c) Investment and Technology Promotion;
(d) Industrial Statistics and Information Networking;
(e) Upgrading Technical Skills in Agro-industries;
(f) Pollution Control and Waste Management.

VII. Reflection and Future Direction of the Country:

The economic policies pursued during the past five years, have succeed in setting the economy in the appropriate path. Inflation rates have been greatly reduced following control of the major flaws in the public budget and curbing the increase in money supply and the velocity of its circulation. Petroleum production and its exports in the year 2000 had influenced a positive structural change in economic base and enhanced economic stability. Meanwhile, the review process of laws and regulatory framework protracting private sector initiative and innovative skills had been completed and approved. Production and investment were induced with economic environment rebound. Such achievements were accompanied by scrupulous monitory and in depth studies that revealed the nature, magnitude and dimensions of the problems and draw backs, and the cost born by the society as a result of the implementation of rigorous structural adjustment and economic reform.
polices. Taking this background on board, it seems that the Sudan is delving into next decade, with a programme for economic growth and human development, set on the following basis:

♦ The restructuring of the Sudanese economy, the diversification of productive base, mobilization of sustainable development potentials in the various sectors, and widening of knowledge and technological base of the economy.
♦ The continuation of economic reform programmes with the aim of establishing a free economy dependent on market forces which entail retrenchment of the role of the state in economic activity and implementation of the designed programme of privatization.
♦ Pursuance of macro-economic policies which avail wider chances for both local and foreign capital to participate in economic activity and widen employment opportunities and provide for the removal of all constraints which may obstruct such capital.
♦ Removal of infrastructure bottlenecks, and pursuit of policy of enhancing capacities and development of infrastructures to effectively facilities the achievements of targeted growth rates.
♦ Pursuing arduously the task of alleviating poverty, arrest the factors behind and eminent sources of poverty and reduce it to 50% by the year 2015 in the framework of the strategy designed for this purpose.
♦ Giving adequate attention to social development, through transcending its indicators. Development of human capital, and administrative institutional and professional capacities are essential elements for socio-economic health.
♦ Empowering and encouraging women to increase their contribution in economic and social activities.
♦ Maintaining environmental and ecological balance through rational utilization, protection and development of natural resources.
♦ Preparing the economy and enabling it to cope with globalization, through gradual opening of markets for international trade and investment.
♦ Allowing popular participation in the preparation of plans, programmes and decision making through civil society organizations, trade unions, and the planning councils at the national, state and local levels.
♦ Reactivating the role of national research centers and prepare a plan for scientific research based on the needs of the economy and society.

The Objectives of the Action plan for the next decade aim at:

1. Realizing an annual growth rate of GDP ranging from 7% to 7.5% and transcending it to higher sustained levels.
2. Reducing the annual rate of inflation from 10% to less than 5% by the end of the decade.
3. Increasing productivity as well as expanding and diversifying the production base.
4. Increasing export earnings as a percent of GDP and effect a marked structural change in exports and market diversification.
5. Increasing the average public revenues to 32% of GDP and decreasing expenditure to realize surpluses in the general budget by the end of the programme period.
6. Increasing domestic saving to 20% of GDP by the end of the period.
7. Increasing the annual average investment rate to 33% of GDP. The private sector is to contribute with 68% of this increase.

The following industrial sector priorities and future actions are envisaged:

♦ Effecting a qualitative change in current industrial activities in view of impending globalization process through shifting from import substitution – based industry to industry based on knowledge and free competition in open markets.
♦ Maximizing the use of competitive advantages in the fields of agriculture and animal wealth in the process of expanding agriculture-led-industries.
♦ Maximizing the use of utilization of idle capacities through provision of production requirements and removal of production constrains.
♦ Developing the petroleum and mining industries.
♦ Reinforcing intra and inter-industrial linkages.
♦ Paying more attention to the development and dissemination of small and medium-sized enterprises (SMEs) and solicit financial and technical support for this purpose in addition to reforming and developing systems for SMEs.
♦ Building the private sector capacities with respect to human, administrative, institutional and productive aspects and taking advantage of the opportunities offered by globalize economics especially in the areas of trade and investments.
♦ Building physical, technical and information infrastructure in addition to the basic needs of modern industry, rehabilitating the exiting industrial areas and expanding of free zones.
♦ Encouraging industries of strategic priorities in terms of value added and investing in specific fields of advantages accrued to Sudan: to enforcing forward and backward linkages in industry.

Paying attention to the research centers and linking them with the industrial sector. These centers are supposed to develop Sudanese quality standard products and build close relations with international and regional research centers with the aim of introducing total quality systems of international standard along with their applications in the industry.

The government of Sudan is currently in the process of adjusting national policies in line with sustainable development objectives and goals, the government recognizes that this undertaking not only places heavy demands on national government ministries and organizations, but must actively include local governments, the private sector, the NGO communities and other major groups.
### Annex

**Industry – Related sustainable Development Indicators**

**Table 1 (A): GDP Contribution of Various Sectors (%):**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>43</td>
<td>45</td>
<td>47,6</td>
<td>48,7</td>
<td>49,8</td>
<td>46,4</td>
</tr>
<tr>
<td>Industry</td>
<td>15,8</td>
<td>14,5</td>
<td>15,1</td>
<td>15,0</td>
<td>15,8</td>
<td>21,4</td>
</tr>
<tr>
<td>Mining</td>
<td>0,1</td>
<td>0,9</td>
<td>0,9</td>
<td>0,1</td>
<td>1,9</td>
<td>7,6</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>8,6</td>
<td>6,5</td>
<td>7,4</td>
<td>8</td>
<td>7,2</td>
<td>7,4</td>
</tr>
<tr>
<td>Electricity &amp; Water</td>
<td>2,2</td>
<td>1,9</td>
<td>1,9</td>
<td>1,8</td>
<td>1,8</td>
<td>1,7</td>
</tr>
<tr>
<td>Construction</td>
<td>4,9</td>
<td>5,2</td>
<td>4,9</td>
<td>5,1</td>
<td>4,9</td>
<td>4,7</td>
</tr>
<tr>
<td>Services</td>
<td>41,2</td>
<td>40,5</td>
<td>37,3</td>
<td>36,3</td>
<td>34,4</td>
<td>32,2</td>
</tr>
</tbody>
</table>

Source: Ministry of Finance & National Economy

**Table 1 (B): GDP growth rate (%):**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>9,7</td>
<td>12,3</td>
<td>8,3</td>
<td>8,5</td>
<td>0,8</td>
</tr>
<tr>
<td>Industry</td>
<td>7,2</td>
<td>10,6</td>
<td>5,7</td>
<td>11,4</td>
<td>77,4</td>
</tr>
<tr>
<td>Mining</td>
<td>-</td>
<td>16,7</td>
<td>0,0</td>
<td>125,0</td>
<td>327,8</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>4,4</td>
<td>19,8</td>
<td>4,1</td>
<td>6,0</td>
<td>11,5</td>
</tr>
<tr>
<td>Electricity &amp; Water</td>
<td>3,1</td>
<td>4</td>
<td>3,9</td>
<td>2,0</td>
<td>5,9</td>
</tr>
<tr>
<td>Construction</td>
<td>-1,8</td>
<td>0,4</td>
<td>10</td>
<td>2,3</td>
<td>3,3</td>
</tr>
<tr>
<td>Services</td>
<td>-1</td>
<td>-2,5</td>
<td>3</td>
<td>0,4</td>
<td>1,6</td>
</tr>
</tbody>
</table>

Source: Ministry of Finance & National Economy
Table 2: Foreign Capital Inflows (1990 -1999):

<table>
<thead>
<tr>
<th>Type of economic Activity</th>
<th>Sudanese Currency (Millions S.D)</th>
<th>US Dollars (Millions)</th>
<th>Saudia Riayals (Million)</th>
<th>French Franks (Millions)</th>
<th>German Marks (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Agriculture and agriculture Processing</td>
<td>1.3661</td>
<td>53.9</td>
<td>28</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Industry</td>
<td>1.0901</td>
<td>5.9</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- Milling &amp; Oil Explorations</td>
<td>-</td>
<td>3.513</td>
<td>-</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>- Transport</td>
<td>0.9900</td>
<td>105.4</td>
<td>500.6</td>
<td>-</td>
<td>45.5</td>
</tr>
<tr>
<td>Total</td>
<td>3.4462</td>
<td>3723.2</td>
<td>528.6</td>
<td>10</td>
<td>45.5</td>
</tr>
</tbody>
</table>

Source: Ministry of Finance and National Economy

Table 3: The Projected Investments During the Programme Period Years (2001 – 2010)
(In Million US$)

<table>
<thead>
<tr>
<th>Year</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Services and Basic infrastructure</th>
<th>Post War Programme</th>
<th>Investments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>127</td>
<td>139</td>
<td>919</td>
<td>-</td>
<td>1185</td>
</tr>
<tr>
<td>2002</td>
<td>156</td>
<td>241</td>
<td>1030</td>
<td>-</td>
<td>1427</td>
</tr>
<tr>
<td>2003</td>
<td>203</td>
<td>204</td>
<td>1537</td>
<td>-</td>
<td>1944</td>
</tr>
<tr>
<td>2004</td>
<td>258</td>
<td>613</td>
<td>1017</td>
<td>-</td>
<td>1888</td>
</tr>
<tr>
<td>2005</td>
<td>291</td>
<td>364</td>
<td>2314</td>
<td>-</td>
<td>2969</td>
</tr>
<tr>
<td>2006</td>
<td>592</td>
<td>852</td>
<td>1747</td>
<td>-</td>
<td>3191</td>
</tr>
<tr>
<td>2007</td>
<td>466</td>
<td>946</td>
<td>2825</td>
<td>-</td>
<td>4137</td>
</tr>
<tr>
<td>2008</td>
<td>820</td>
<td>1770</td>
<td>1245</td>
<td>-</td>
<td>3835</td>
</tr>
<tr>
<td>2009</td>
<td>1004</td>
<td>1491</td>
<td>2293</td>
<td>-</td>
<td>4788</td>
</tr>
<tr>
<td>2010</td>
<td>917</td>
<td>1200</td>
<td>4071</td>
<td>-</td>
<td>6188</td>
</tr>
<tr>
<td>Total</td>
<td>4834</td>
<td>7820</td>
<td>18998</td>
<td>55348</td>
<td>87000</td>
</tr>
<tr>
<td>Annual Average</td>
<td>483</td>
<td>782</td>
<td>1900</td>
<td>5535</td>
<td>8700</td>
</tr>
</tbody>
</table>

Source: Ministry of Finance and National Economy
Table 4: The Status of Manufacturing Activities Khartoum State by Industrial Sub-Sector in 1998

<table>
<thead>
<tr>
<th>Sub-Sector</th>
<th>Operating</th>
<th>Out of Operation</th>
<th>Under Construct.</th>
<th>Licensed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Industry</td>
<td>227</td>
<td>128</td>
<td>36</td>
<td>40</td>
<td>431</td>
</tr>
<tr>
<td>Textile Industry</td>
<td>52</td>
<td>72</td>
<td>9</td>
<td>219</td>
<td>252</td>
</tr>
<tr>
<td>Wood Products</td>
<td>73</td>
<td>24</td>
<td>6</td>
<td>46</td>
<td>149</td>
</tr>
<tr>
<td>Paper products</td>
<td>50</td>
<td>11</td>
<td>3</td>
<td>21</td>
<td>85</td>
</tr>
<tr>
<td>Chemicals</td>
<td>166</td>
<td>71</td>
<td>10</td>
<td>157</td>
<td>404</td>
</tr>
<tr>
<td>Non-metallic Minerals</td>
<td>75</td>
<td>35</td>
<td>3</td>
<td>6</td>
<td>119</td>
</tr>
<tr>
<td>Basic Metals</td>
<td>20</td>
<td>19</td>
<td>3</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>Metal products, Machinery and equipment</td>
<td>11</td>
<td>9</td>
<td>2</td>
<td>6</td>
<td>28</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>674</strong></td>
<td><strong>369</strong></td>
<td><strong>72</strong></td>
<td><strong>498</strong></td>
<td><strong>1513</strong></td>
</tr>
</tbody>
</table>

Source: Ministry of Industry & Investment

Table 5: Economically Active Population in Manufacturing (10 years and over, Population census of Sudan, 1993)

<table>
<thead>
<tr>
<th></th>
<th>Manufacturing</th>
<th>Total Employ.</th>
<th>Manufact./ Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers, Professionals</td>
<td>5 050</td>
<td>199 670</td>
<td>2.5%</td>
</tr>
<tr>
<td>Technicians, Assoc. Professionals</td>
<td>7 220</td>
<td>507 970</td>
<td>1.4%</td>
</tr>
<tr>
<td>Clerks, sales, workers</td>
<td>20 990</td>
<td>321 720</td>
<td>6.5%</td>
</tr>
<tr>
<td>Craft Workers</td>
<td>271 560</td>
<td>485 600</td>
<td>44.8%</td>
</tr>
<tr>
<td>Skilled Agricultural Workers</td>
<td>3 610</td>
<td>3 093 240</td>
<td>0.1%</td>
</tr>
<tr>
<td>Plant and Machine Operators</td>
<td>34 110</td>
<td>230 800</td>
<td>14.8%</td>
</tr>
<tr>
<td>Elementary Occupations</td>
<td>33 570</td>
<td>843 870</td>
<td>4.0%</td>
</tr>
<tr>
<td>Others</td>
<td>1 120</td>
<td>201 370</td>
<td>0.6%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>323 340</strong></td>
<td><strong>5 884 200</strong></td>
<td><strong>5.5%</strong></td>
</tr>
</tbody>
</table>

Source: 1993 Census
Table 6: Industrial Production of Selected sub-sectors, (19996 – 2000):

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar</td>
<td>Thousand Tons</td>
<td>459</td>
<td>500</td>
<td>557</td>
<td>610</td>
<td>664</td>
</tr>
<tr>
<td>Spinning</td>
<td>Million Metric Tons</td>
<td>2.0</td>
<td>1.1</td>
<td>1</td>
<td>1.2</td>
<td>0.7</td>
</tr>
<tr>
<td>Weaving</td>
<td>Million Yards</td>
<td>18.1</td>
<td>26</td>
<td>9.4</td>
<td>10.6</td>
<td>8.1</td>
</tr>
<tr>
<td>Cement</td>
<td>Thousand Metric Tons</td>
<td>239</td>
<td>295.6</td>
<td>197.8</td>
<td>230.6</td>
<td>145.8</td>
</tr>
<tr>
<td>Tobacco</td>
<td>Billion Unit</td>
<td>2.1</td>
<td>2.6</td>
<td>2.9</td>
<td>5.1</td>
<td>2.6</td>
</tr>
<tr>
<td>Tires</td>
<td>Thousand Unit</td>
<td>456</td>
<td>183</td>
<td>207</td>
<td>173</td>
<td>176</td>
</tr>
</tbody>
</table>

Source: Ministry of Industry & Investment
Figure 1: Contribution of productive and services sectors to GDP

Source: Ministry of Finance and National Economy

Figure 2: National Savings (1987-1997)

Source: Ministry of Finance and National Economy
Figure 3: Development Expenditures

Source: Ministry of Finance and National Economy

Figure 4: Total Export 1983 - 2000

Source: Ministry of Finance and National Economy