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Draft

ETHIOPIA

COUNTRY REPORT

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T A B L E O F C O N T E N T S

ETHIOPIA

COUNTRY REPORT

1. Brief Introduction:

Ethiopia, one of the oldest nations of the world, is situated in the Horn of Africa. It is located between latitudes 3^0 and 15^0 N and 30^0 and 48^0 E longitude. Its total land area is 1.098,000 km^2, of which 60% is suitable for agriculture, and 15% of this is estimated to be currently under cultivation.

Ethiopia has a population of about 54.9 million, which makes her to be the 3rd largest country in the Continent of Africa, with an annual growth rate of 3.1 percent per annum.

Over 70 languages are spoken in the country. The three major languages are Amharic, Oromigna and Tigrigna. Amaharic is the official national language of Ethiopia. English language serves as a medium of instruction in secondary schools and universities.

Coptic christianity and Islam are the two major Religions in Ethiopia.

The country now is divided into ten Region states under the Federal Democratic Republic of Ethiopia. These are: - Tigray (Reg. 1), Afar (Reg. 2), Amhara (Reg. 3), Oromia (Reg. 4), Somalia (Reg. 5) Gambella (Reg. 6) and Southern Ethiopia Peoples' Regional Administration (SEPRA) which constitutes Regions 7-11, Benshangul (Reg. 12), Harari (Reg. 13) and Addis Ababa, the Capital (Reg. 14).

Of the total 1994/95 budget, amounting to 9635.8 million, (of which recurrent expenditure makes up 52.3 percent) 6,297,3 million was allocated to the central government while 3668.4 million or

about 37 percent was allotted to the regional administrations. From the total regional administrations' expenditure the share of recurrent and capital budget amount to 38.5 and 35 percent, respectively. Moreover, the share of regional governments is expected to increase along with the process of devolution of power to the regions.

Agriculture is the mainstay of Ethiopia's economy. It accounts for about 45 percent of GDP over 80 percent of total employment and 85 percent of the country's export earnings.

Of the total land area in Ethiopia 60% is potentially arable. The potentially irrigable land of the country is estimated to be around 2.4 million hectares of which only about 4 percent is cultivated. Ethiopia has also aboundant water resources. The total annual runn-off through its major river basins is about 100,000 million cubic meters.

Livestock is also an untapped huge resource. Ethiopia's Livestock population puts it in the first place in Africa and tenth largest in the world.

Because of the low industrial base of Ethiopia, the share of intermediate and capital goods is very small. Manufacturing industry including small scale industry and handicrafts contributed on an average about 11 percent of GDP. Besides, only 9.5 percent of total employment is engaged in manufacturing industry.

Ethiopia has an abundant sustainable energy resources of which very little has been utilized. It is endowed with hydro-power, geothermal, natural gas etc., that can be used to generate adequate power. The country's hydro-electric potential, for instance, has been estimated in the range of 100-165 billion KWh/a. But the

amount tapped so far is insignificant. It is also believed that a wide range of possibilities exist for oil deposits since Ethiopia has ecological formations similar to that of Middle Eastern countries.

Traces of several minerals, have been found in many parts of the country. Exploitation of gold, platinum, tantalum, salt, marble and other industrial minerals are underway. Although presently mineral's contribution to GDP is only to the tune of 2 percent, it is expected to emerge in the future as a major and critical sector of the economy.

The condition of social services in Ethiopia leaves much to be desired. The education system is characterized by low enrolment ratio of 20 percent for primary and 12 percent for secondary education as well as by high rate of drop outs. The gender disparities are glaring and tend to be even more so as one moves up the education ladder.

The situation in the health sector is not better either. The high infant mortality rate of 110 and the lowlife expectancy of about 53 years demonstrate the dire conditions. Ethiopia's health problems are further exacerbated by its unfavorable demographic dynamics as it is a country with very high fertility and very low contraceptive use.

In spite of the fact that Ethiopia is endowed with both human and natural resources, it still remains one of the poorest of the least developed countries in the world, with an estimated per capita income of about US$ 120 (1994).

Though a variety of reasons could be attributed to its backwardness, Ethiopia's economy has suffered for more than two decades from internal war, recurrent drought and famine as well as

inappropriate socio-economic Policy of the past regime. Now the country is moving from war to pease, from a centralized command economy to a market oriented economy and from a highly centralized administration where power was concentrated at the center to regional administration with the devolution of power to the regions.

In the sphere of economic development the policy framework paper of the transitional period clearly states that the overriding objective is to promote private sector development and limit the role of the state to that of promoter of economic development by way of formulating appropriate policy and strategy. Thus, after a thorough negotiation with the World Bank and IMF, an Economic Reform Program was introduced, primarily aimed at stabilization and structural reform. The following are the most significant measures taken by way of implementing the Economic Reform Program.

- Devaluation of the Birr and the introduction of foreign exchange auction system
- Public enterprise reform aimed at greater autonomy
- Promulgation of Investment Code to attract domestic and foreign investors
- Promulgation of labor law
- Guaranteeing minimum producer price for Coffee
- Upward revision of interest rates
- Deregulation of transport tariff and elimination of Government assignment of Vehicles.
- Decentralization of administration by creating regional governments.
- Upward revision of the price of fuel, and related products to reduce subsidies.
- Licensing of private banks and insurance companies.

As a result of the policy measure taken and the prevailing peace and stability, GDP grew by 12 percent in 1992/93 because of improved performance exhibited in the Agriculture Industry and Service sectors.

Nonetheless, the pace of economic reform and recovery has not been as desired due to the deep rooted structural constraints. Hence, the GDP growth during 1993/94 fiscal year was only 1.3 percent owing to unfavorable weather. As a result the Agricultural GDP growth was negative 6.5 percent while the corresponding growth for industry and services sectors was positive 1.7 and 7.1 percent respectively.

By the end of 1994/95, over all GDP is expected to grow at the rate of 5.6 percent. Likewise the Agriculture service and industry sectors are estimated to register an annual growth rate of 4.8, 5.8 and 8.8 percent, respectively as shown below in Table 1.

TABLE 1.

Growth of real GDP by Major Economic Activity

1989/90		1990/91	1991/92	1992/93	1993/94	1994/95
GDP (Total)	3.3	-6.7	-8.5	12.3	1.3	5.6
Agriculture	5.2	2.8	-4.6	6.4	-5.4	4.8
Industry	-4.0	-22.1	-17.5	27.1	7.6	8.8
Distributive Sector	1.7	-24.4	-13.1	23.8	8.8	6.2
Other Services	5.2	-5.5	-10.6	13.0	22.2	5.6

Source - Ministry of Economic Development and Cooperation

As shown in the Table 1 agricultural GDP for 1994/95 fiscal year is lower than its 1992/93 level by 2.1 percent indicating that the performance of the sector leaves much to be desired.

Today, the overall development strategy of Ethiopia is agriculture-led industrialization which puts greater emphasis on the interdependence of agriculture and industry and provides long term perspective and framework for future socio-economic development. A rapid economic growth is expected through improving the small holder agriculture and building export oriented labor intensive agro-industrial sector which relies on domestic raw materials and labor.

In this country report an attempt is made to briefly outline/assess the various sectors of the national economy which encompasses a wide range of areas from agriculture and industry to mining and energy and from education and health to science and technology.

The raison deter of the report, therefore, is to give a bird's eye of the over-all Ethiopian economy and help the reader not only acquire basic and factual information but also have a better insight into the problems and prospects of Ethiopia's development.

2. The Ethiopian Economy

2.1 Agriculture

Ethiopia is well endowed with natural resources with close to 60 percent of its total land mass being potentially arable. Owing to the variation in its climate, terrain, etc and comprising most major ecological systems, it possesses one of the largest and most diverse genetic resources in the world. Ethiopia's highlands are also known to be one of the six hearths of primary plant domestication in the world.

The basic characteristics of the Ethiopian economy is the dominance of agriculture in terms of employment, output and exports. With the bulk of the population living in rural areas agriculture remains to be the backbone of the economy. Thus agriculture accounts for about 45 percent of GDP, over 80 percent of total employment and 85 percent of the country's export earnings.

Ethiopia's large livestock population puts it in the first place in Africa and tenth in the world. The livestock population is estimated to include 27 million Cattle, 24 million sheep, 18 million goats, 7 million equine, 1 million Camels and more than 52 million poultry. It is estimated that about 63.7 million hectares of open grazing land is available for pasturing the livestock population. The contribution of the livestock sub-sector to GDP, however is very low because of its low level of development. This sub-sector holds considerable promise, particularly for exports.

It should be noted that in addition to the extensive land area of reasonably good soils, favorable climate over large areas, untapped huge livestock population, Ethiopia's rich agricultural

resources and big potential for development include a hardworking farming work force.

According to FAO land use planning study, Ethiopia exhibits 12 geo-morphological units, 18 soil associations, 6 climatic and edaphic vegetation association, 6 distinct rainfall patterns, 10 thermal Zones, 14 length of growing period Zones and 15 main production regions.

In terms of current land use, livestock rearing takes over 63 million, (or 51 percent) hectares while about 18 million, (or 14.8 percent) hectares are used for cultivation as per the estimate of central statistics office. However, only 6 million hectares is used for crop cultivation. Forest areas account for 4.5 million hectares which is a little bit over than 3 percent of the total land area. Details of the various types of land cover and corresponding land areas are shown in the table here below.

Table 2

Land Use Area

No.	Land Use	Land Area (ha)	(%)
1	Cultivated Land	18,487,190	14.8
	1.1. Cereal Crops	16,413,140	13.1
	1.2. Plants	20,740,500	1.7
2	Grazing Land	63,725,700	51.0
3	Vegetation Forest	14,608,990	11.7
4	Marshy Land	729,000	0.6
5	Water Area	683,000	0.6
6	Others	26,600,620	21.3
	Total	124,834,000	100

Thirty eight percent of the aggregate value in agriculture comes from grain crops and another 38 percent from livestock. The remainder of the aggregate value of agriculture output originates from other commercial crop, fruits and vegetables. Cereals, pulses and oil seeds constitutes up to 80 percent of the total crop production of the country. Presently, despite food crops output estimate at by 6.2 percent over the 1993/94 level, the performance of the sub-sector is not encouraging. Based on FAO's forecast on the production of food grain crops, the 1994/95 output is estimated to fall between the 1993/94 and 1992/93 level as shown below.

Table 3

Food Grain Crops Production (1000 tons)

Season	1991/92	1992/93	1993/94	1994/95	Growth 94/95/93/94
Main Season	6,588	7,479	7,151	7,203	0.7
Belg Season	471	450	485	500	3.1
Total Production	7,059	7,949	7,636	7,703	0.9

Comparison of this year's harvest with that of the previous year production shows an increase of nearly 1 percent. If viewed from the increased area cultivated over the previous year i.e. 9.2 percent increase from 1993/94 level, the incremental production is marginal. Thus the per capita food grain production fell from 131 kg in 1993/ 94 to 128 kg. in 1994/95. Again, comparison of 1994/95 with 1992/93 shows that the 1994/95 harvest is expected to be less by 3.1 percent.

The major causes for the reduced output are:- late Belg rains during the first half of the year, heavy rains during July and August that led to flooding and water logging, early termination of

useful rains in the first half of September which resulted in moisture stress during the maturing stage and army worm infestation in some areas.

Based on the information obtained from FAO/WFP, RRC, EGTE, and CSA the balance between production and consumption shows a deficit of just over a million tons. Taking into account carryover stock, the 1995 import requirement is estimated to the tune of 860,000 tons. Thus a large number of rural population, estimated at about 4 million, will continue to depend on food assistance in 1995. In particular, South and north Wollo, Tigray and Hararghe would be vulnerable to food shortage in 1995.

In spite of improvement in the supply of inputs and grain marketing, the performance of the crop sub-sector has been poor, mainly because of drought and uneven distribution of rains.

In what follows an attempt would be made to further identify the major bottlenecks that hamper the development of agriculture in Ethiopia and the strategy drawn to resolve the problems.

- Land tenure system still appears to be one of the cardinal issues in bringing about development in the agricultural sector, there is the need for legislation guaranteeing security of tenure.

- In the past, government taxation and pricing policy had adversely affected small scale agriculture, now this has been changed with the institution of free market prices and other ad hoc taxes levied on the peasantry. But the absence of cooperative marketing mechanisms and other support services have hindered the peasants from getting appropriate returns from their output and fair prices for inputs which is bound to arrest the initiative, creativity and incentive of the farmers.

- Extension service availability is very limited and unbalanced. It also lacks trained manpower both in quality and quantity to effectively cater services.

- The linkage between agricultural research and agricultural production and productivity is not up to the desired level so much so that it has resulted in inadequate generation and application of new and appropriate technologies for the peasant.

- The fact that agricultural development is viewed in isolation and not within the context of integrated rural development and the absence of inter-sectoral coordination among government institutions has resulted in inadequate provision of infrastructural services such as roads, schools, water supply, etc.

- Another constraints for agricultural production is the lack of effective linkage between industry and agriculture. Industrial development aimed at processing products of small scale agriculture was poorly developed and industry's contribution to the provision of modern inputs was very minimal.

- Mention should also be made that agricultural production has suffered from inefficient state farms that replaced large scale private farms.

- The virtual absence of a wide system of provision of credit to the farmer has negatively affected the development agriculture, which, inter alia, is restricting the use of modern inputs and technologies.

To come to grips with various issues and problems pertaining to the development of agricultural sector, the following strategies have been drawn:

- To strengthen all relevant institutions to develop and sustainabl increase the productivity of small scale and also commercial agriculture by way of:

(i) Improving agricultural research facilities and forging close links between agricultural research and extension service;

(ii) Providing continual training to extension agents and eventually improve extension agent to farmer ratio;

(iii) Promoting the creation of marketing cooperatives on a voluntary basis and assisting them in obtaining managerial and other relevant training;

(iv) Promoting the establishment of rural or agricultural development banks aimed at rendering credit service.

- To provide economically optimum package of production techniques suited to the various agro-climatic zones through:

(i) The development of crop varieties with increased drought tolerance and early maturity;

(ii) Conducting epidemiological studies on the improvement of livestock production with due attention to nutritional and cross breeding research programs;

(iii) Strengthen the capacity for coffee research so as to develop, through selection, breeding and bio-technology, higher quality Coffee and with natural resistance against pests and diseases (thanks to the prevalence in Ethiopia of the widest genetic base of Arabic Coffee in the world);

(iv) Research would also be carried out in high value exportable crops for diversification;

(v) The development of irrigation research capacity for the efficient use of water.

Furthermore, the extension services shall create conducive atmosphere for the improved performance of both crops and animals through the use of fertilizers, and improved seeds, soil conservation and water management techniques and improved veterinary services.

- To undertake conservation based integrated approach to rural development with greater emphasis on:

(i) Afforestation and reforestation programs, water and soil conservation and appropriate watershed management and catchment development;

(ii) Coordination of various sectors with a view to develop economic and social infrastructural services such as roads, schools, clinics and water supply systems.

- To secure a supportive policy environment that will:

(i) Ensure security of tenure and land use for the farmer;

(ii) Maintain the policy of market determination prices of agricultural inputs and out puts and;

(iii) Promote marketing cooperatives.

- To promote the participation of the community in rural development by:

(i) Encouraging them to get involved in the decision making process right from the grass-root level and;

(ii) Mobilizing the community to build infrastructual services through labor and local material contribution.

- To promote the creation of rural industries by way of:

(i) Encouraging the development of small and medium agro-industries engaged in the processing of agricultural products for both local and export markets;

(ii) Promoting industries engaged in agricultural inputs such as farm implements, field processing plants, organic fertilizers, etc.;

(iii) Developing infrastructures and facilities required for marketing export products such as coffee, livestock, livestock products and by-products, spices, fruits, vegetables, etc.

- To promote private commercial farming by developing, in the short and long term, extensive mechanized agriculture under rain-fed conditions and also by using major rivers for increased agro-industrial production though large scale irrigation schemes.

2.2 Industry

Ethiopia has a very low industrial base. The share of intermediate and capital goods industry is very insignificant. Manufacturing industry including small scale industry and handicrafts contributed on average about 11 percent of GDP. Furthermore, only about 9.5 percent of total employment is engaged in manufacturing industry.

The manufacturing sub-sector is largely dominated by agro-based consumer goods producing industries such as food, beverages, textiles, leather and shoes, which accounted for at least 70% of the total value of industrial production. The textile branch alone contributed about a third of the total value of manufacturing output. The industrial sector accounts for 21.2 percent of export earnings.

Even though Industrial Public Enterprises (IPES) enjoyed preferential access to foreign exchange, credit facilitate and skilled manpower, their performance have been sluggish manly due to control on their output prices, and acute shortage of foreign exchange limiting the availability of raw materials and spare parts.

The inadequate performance of the agricultural sector in the supply of raw materials and the required foreign exchange to meet the import demand had also negative impact on the manufacturing sector.

After the Public Enterprises act of August 1992, which allowed for management autonomy, each IPE was made to compete

in an economic environment where prices and markets are deregulated, currency being devalued, foreign exchange provided on the principles of market operations, and interest rate and import duties are adjusted. These policy measures are expected to initiate the spirit of entrepreneurship and competition among all economic establishments in the country.

Privatization programme has also been launched as part and parcel of the overall economic reform programme by the Ethiopia Privatization Agency (EPA). Accordingly 11 small and medium manufacturing and five agro-industrial enterprises shall be divested.

Owing to the conducive policy environment and provision of foreign exchange to ease IPEs raw materials and spare part shortages, public manufacturing output has increased from Birr 1097.5 million in 1991/92 to Birr 1223.7 million in 1992/93 and to Birr 1600.4 million in 1993/94 growing at an annual rates of 11 and 31 percent respectively.

As indicated in Tables 4 and 5 below, the value of output of 28 IPEs in the first half of 1994/95 amounted to Birr 344.2 million which shows a 4.4 percent increase as compared to the first half of 1993/94; whereas sales increased by 21.7 percent in the same period. If one looks at table 4 all enterprises do not show similar performance. Food, beverage, and non-metal have made real increase in output. Whereas a decline in output was observed in the textile, chemical and metal sub-sectors. As seen in table 5, sales performance by sub-sectors shows that most the IPEs have done well except in the cases of textile, chemical and metal sub-sectors where value of sales had declined in the 1st half of 1994/95.

Table 4

Manufacturing output of 28 IPEs In the 1st half of the 1993/94 and 1994/95 FYs ('000 Birr)

No.		1993/94	1994/95	%Change
1	Food	18,352	23,049	25.59
2	Beverage	44,761	53,525	19.58
3	Tobacco	30,416	31,518	3.6
4	Textile	79,337	75,514	(4.8)
5	Lather & shoe	22,695	23,950	5.5
6	Printing & Paper	19,684	20,455	3.9
7	Non-metal	43,683	56,240	28.7
8	Chemical	32,622	29,279	(10.2)
9	Metal	38,283	30,688	(19.8)
	Total	329,833	344,218	4.4

Source: Ministry of Industry

Table 5

Sales Performance of the 28 IPEs In the 1st half of the 1993/94 ('000 Birr)

No.		1993/94	1994/95	Percentage Change
1	Food	50,001	90,976	81.9
2	Beverage	114,556	139,918	22.1
3	Tobacco	79,716	98,339	23.3
4	Textile	108,512	106,484	(1.8)
5	Lather & Shoe	43,776	65,583	49.8
6	Printing & Paper	32,571	33,968	4.3
7	Non-metal	69,178	90,161	30.3
8	Chemical	73,785	72,796	(1.3)
9	Metal	91,178	109,378	(19.9)
	Total	663,273	807,603	21.7

Source - Ministry of Industry

In what follows an attempt is made to identify the major constraints and draw an industrial development strategy that would solve the problems.

- The industry sector is characterized by its dependence on foreign sources for machinery and equipment, spare parts and other inputs, thereby inhibiting the process of self-sustained industrialization; minimal contribution to rural/agricultural development, inability to generate the expected level of employment.

- The development of the industry sector has been hampered by inadequate infrastructure such as road, energy, water supply and other facilities.

- Lack of utilization of the country's rich agricultural & mineral potential has definitely thwarted the development of industries based on these resources. Low level of technology and productivity in agriculture could not cope with the demand for industrial raw materials and foreign exchange requirements. Likewise, the low level of exploration and exploitation of a wide variety of minerals has constrained the development of industries based on such resources.

- The lack of emphasis given to small and medium scale industries, as well as handicrafts and rural industries has adversely affected the expansion of these industries and adequate supply of consumer goods. It has also affected not only the development of domestic entrepreneurship but also the creation of employment.

- Another major constraint for industrial development is the inadequacy of institutions dealing with the selection, transfer, adaptation and development of technology, as well as manpower development for the sector.

- To overcome such constraints the following major industrial development strategies have been drawn:

- To develop institutions that:

  (i) Promote the efficient utilization of existing capacities;
  (ii) Upgrade the quality of vocational education and training;
  (iii) Establish extension services to SMIs and rural industries as well as informal and micro-enterprises; and
  (iv) Encourage the participation of private investors and the development of cooperatives through various policy measures and incentive mechanisms.

- To promote inter-and intra-sectoral linkages by:

  (i) Establishing a close coordination between industry, agriculture and mining and other relevant sectors of the economy mainly for the production of industrial raw materials;
  (ii) Promoting efficiency in industries that have inputs for other industries.

- To create a conducive environment for industrial development by, inter-alia:

  (i) Encouraging private investment;
  (ii) Implementing the privatization of public enterprises;
  (iii) Promoting, the diversification of industrial structure.

- To create an appropriate financial environment to:

  (i) Make an effective use of the Agricultural and Industrial Development Bank (AIDB) and thereby encourage investment in the sector;
  (ii) Enhance the sector's efficiency, profitability and competitiveness;
  (iii) Encourage the establishment of financial institutions that can address the needs of rural cottage industries, informal and Micro-enterprises in various parts of the country.

- To develop social and economic infrastructure by:

  (i) Improving the efficiency of existing ones;
  (ii) Encouraging both public & private investment in the sector and also;
  (iii) Promoting community participation for the development of basic rural infrastructure.

- To promote industrial exports by way of:

  (i) Diversifying industrial exports;
  (ii) Maximizing foreign exchange earnings;

(iii) Ensuring the sector's international competitiveness, particularly in areas of comparative advantages; and

(iv) Promoting private investment in export-oriented industries.

- To enhance the national technological capability through:

(i) The transfer, innovation and adaptation of technology; and

(ii) The development of research especially in institutions of higher learning.

2.3 Energy:

Ethiopia has an abundant sustainable energy resources very little of which has been utilized because of the low level of economic development.

A large portion of rural energy in Ethiopia comes from fuel wood, charcoal and agri-residue. As shown in table 6 below, over 80% of the energy comes from fuel wood. Here, it is alarming to note that about 200 hectares of woodland are cut annually, and the effect has been loss of one billion tons of productive soil through erosion, per annum. Today; only about 3.0 percent of the country's territory is under forest cover, which used to be around 40 percent at the turn of the century.

The next source of energy is charcoal which has a very high rate of demand over the coming years which means a huge amount of wastage of fuel wood. As the scarcity of fuel-wood increased, rural households have resorted to dung and crop residue as energy source. Agricultural residue and dung account for about 17% of the country's total energy consumption.

Table 6

Energy Consumption of Rural Household

1989/90 by source

Energy Source	Quantity (KTOE)	Percentage of Total (%)
Fuel wood	9,749.00	81.80
Agriculture residue	1,001.00	8.40
Charcoal	1,116.00	9.40
Dung	51.00	0.40
Bio-gas	0.02	0.00
Kerosene	4.00	0.03
Total	11,921.00	100.00

As can be seen above, the only modern source of energy currently being used in the country side is Kerosene. As the demand for energy increases because of increase in population and rural incomes, there is a great need to find alternative sources of energy.

Even for the larger urban centers traditional energy remains to be the principal energy source, generating over 80% of the total urban supply. As Table 7 indicates fire-wood is the primary source of energy for urban households. Modern energy forms are used basically for lighting and for productive purposes. Even in the capital city, fuel wood accounts for 43% of all cooking fuel requirement. In other cities the share is much higher. Considering the detrimental environmental effect of fuel wood use, an immediate solution to the problem is absolutely essential.

Table 7

Urban Household Consumption of Energy- 1989/90

Energy Type	Quantity (KTOE)	Percentage of Total (%)
Fuel-Wood	591.00	65.52
Agri-residue	58.00	6.33
Dung	72.00	7.86
Charcoal	98.00	10.70
Bio-gas	0.01	0.00
Electricity	27.00	2.29
Kerosine	70.00	7.64
LPG	6.00	0.66
Total	916.01	100.00

Ethiopia is well endowed with substantial potential of hydroelectric and thermal power. The former's potential has been estimated in the range of 100-165 billion KWh/a. But the amount of electricity tapped so far is insignificant even by African standards.

Modern energy sources i.e. electricity and petroleum are used primarily for the productive purposes though a large proportion is used by households (see Table 8).

Table 8
Consumption of Energy in the Urban Sector.

Sector	Traditional (KTOE)	Modern KTOE	Total	Percentage of Total (%)
Household	819.01	97.00	916.01	41.39
Industrial	485.00	195.60	680.60	30.75
Construction	3.13	32.29	35.42	1.60
Services	455.69	125.30	550.99	26.25
Total	1,719.59	847.89	2,567.48	100.00

With the depletion of fuel wood and the demand for energy growing at a rate 2.7% per annum; and with a very sluggish rate of development of other forms of energy, the situation in the energy sector is undoubtedly very critical. It is even more so, when one thinks that energy is an important input for the development of all sectors of the national economy. To ease the acute problem encountered, the following measures shall be undertaken.

- To meet the demand for fuel wood, the development of large- scale agro-forestry industry will be encouraged at all levels i.e Central, Regional and Zonal. An encouragement shall also be given to the farming communities and private investors to undertake such activities. In this endeavor, afforestation with sustainability and with due care to ecological degradation will be underlined. Moreover, studies and research of various tree species will be undertaken so as to identify those that are genetically suitable for diverse weather and soil conditions of the country.

- To improve efficiency of end-use technology: since fuel wood supply cannot be met in short period of time, improving the efficiency of existing technologies, such as new kind's of stoves would be given priorities. Research and its dissemination on the subject would also be actively encouraged.

- To introduce alternative energy sources such as crop residue and dung for the rural areas shall be actively pursued. Briquettes and bagasse are efficient ways using agricultural residue, Dung can be used for producing biogas - which is used for cooking and lighting. It is estimated that in one day 71,500 tons of dung cake can be available from 18 million cattle (No.of cattle in Ethiopia is 27.5 million) which could replace 19,800 tons of fuel wood or about 3.3 million liters of Kerosene per day.

Presently, the adoption of this technology is limited to 120 digester where only 55 of them are operational. Creating frameworks where communal digester can be built through the provision of credit shall also supported. It could even more be attractive to farmers, asides from cooking and lighting, to use the new technology for income generation purpose such as small scale mills and bakeries.

- To develop modern energy resources in order to bridge the gap between demand and supply through improving efficiency, and increasing generating capacity. Accordingly to the Ethiopian Electric Light and Power Authority (EELPA) there is an immediate need to add 60.90 MW of electricity to the interconnected system (ICS). For all purposes the urgent task for the electric sub-sector is to prepare an Electricity Master Plan.

According to demand forecast there will be a power shortage with the next 3-5 years. As mentioned above 60-90 MW of new generating capacity needs to be added to ICS . Costly exercise as it is, the idea is to cover the new capacity through diesel generations. An important consideration in introducing new electricity generation capacity is cost and sustainability of energy resource. Ethiopia is endowed with hydro-power, geothermal, natural gas, etc, resources that could be used to generate electricity. In the Ethiopia context, hydro-power, replenishable source of energy as it is, shall play a prominent role. Thus building small scale integrated hydro-power projects would be essential. Large scale plants have to be also considered even though they have adverse environmental consequences, very long gestation period and often financially costly.

Another abundantly available resource is geothermal energy. It is estimated that in excess of 7000 MW of geothermal energy is available in Ethiopia. Rift valley, Lake Langano and Tendaho areas have already been identified as prime locations of geothermal plants. The developments of this energy resources will be given priority in the short term.

Ethiopia is thought to have significant supplies of oil since it has an ecological formation similar to that of middle eastern countries. Hence, wide range of possibilities exist for oil and

gas deposits. Oil exploration activities underway will continue to be encouraged by the government in order to develop petroleum resources in the country. There is a proven natural gas reserve of over 76 billion cubic meters. Exploitation will begin through a pilot project at the Calub site shortly.

Other alternative sources with which electricity can be produced are Coal, wind and solar energy. Significant coal deposits are found in Ethiopia, with the potential to supply coal-fired generating plants. Wind and solar energy are also flexible sources of generating electricity although on a small scale than hydro-power and seem more suited to serving remote communities.

2.4 Natural Resources and Environment

Ethiopia has a vast land resource base amounting to nearly 1.1 million hectares much of which is endowed with relatively fertile and deep soils, and reasonably well temperature and moisture regimes conducive to both plant growth and animal husbandry. The highlands consisting of 44 percent of the country's land mass, comprise over 90 percent of the economic activity, 88 percent of the population and 65 percent of livestock. With over 1000 millimeters rainfall, adequate for 80 percent of the highlands; 75 percent of the same enjoy growing periods up to 180 days.

According to land use study (1990) 18 major and 62 minor agro-ecological Zones have been recognized. These varied ecological diversities have enabled Ethiopia to grow a large variety of crops, support livestock types and have a substantial number of endemic species of flora and fauna.

Ethiopia is also well endowed with water resources, with a total run off of over 100,000 million cubic meters, 50 percent of which finds its way through the Blue Nile system and the rest with the other major system of Omo, Baro, Wabi-Shabele, Awash and Genale rivers. There is an estimated potential irrigable area of some 2.4 million hectares of which only 4 percent has been cultivated.

The country's forest resources has dwindled over the years due to land cleaning for cultivation, fuel wood, commercial timber harvesting and grazing. The annual rate of deforestation is estimated between 150,000 to 200,000 hectares. Available records of estimate of the forest resources put the total land area covered by forest at about 3 percent, which was estimated at 40 percent at the turn of the century.

Likewise the extent of damage to wild life resources has been alarming . According to quarterly wildlife population counts by Ethiopian Wildlife Conservation Organization, size of the major wild life species has been on a continual decline over the past 4 years.

Nonetheless, owing to variation in climate, terrain etc and comprising most ecological systems, Ethiopia; as mentioned earlier, possesses one of the largest and most diverse plant genetic and wild life resources in the world.

In general, deforestation, land degradation, soil erosion and loss of soil fertility, over-use of grazing areas, water resources degradation are bio-diversity losses are major stumbling blocks in the attempt to conserve and develop natural resources and environment in Ethiopia; and these obviously have adversely affect agricultural production and over all economic growth potentials.

To encounter the challenge for sustainable natural resources conservation and development and environmental protection the following strategies are deemed necessary:

- To create supportive policies for conservation based natural resources development by:

(i) Issuing and enforcing land-use right legislation that would ensure security of tenure and land use for the peasantry;

(ii) Issuing and enforcing forest, wildlife and bio-diversity policies;

(iii) Formulating a national water policy guideline to regulate water use for various purpose.

- To provide institutional support by:

  (i) Strengthening the existing research, educational and training institutions to be able to produce technical Manpower;

  (ii) Developing and disseminating technologies that are related to renewable natural resources conservation and development;

  (iii) Instituting land use planning units at central and regional levels;

  (iv) Giving appropriate orientation to the community to participate in all aspects of conservation, development and management of natural resources.

- To combat land degradation through integrated physical and biological soil conservation by way of:

  (i) Effective integration of crops, ruminant animals, and agro-forestry;

  (ii) Restoring the productivity of degraded lands through closure and introduction of water harvesting/retention techniques and enrichment planting;

  (iii) Developing scientific capacities both at the central and regional levels for land resource assessment, preparation of land use plans and designs;

  (iv) Instituting, at both central and regional levels, laws, regulations and enforcement procedures in order to support sustainable land use systems and ensure proper conservation, development, and utilization of land resources of the country.

- To prepare an integrated master plan for effective country wide water development programs and thereby:

  (i) Complete the already initiated master plans of Tekeze, Abay, Baro/Akobo and Omo river basins;
  (ii) Install integrated data base systems for hydrological, hydro-meteorological and hydro-geological data;
  (iii) Carry out inventory for small scale irrigation sites;
  (iv) Encourage the private sector, through sufficient incentives, to develop large scale irrigated commercial farms.

- To increase water supply and sanitation coverage levels through the development of ponds and other water harvesting technologies to alleviate water supply problems of rural and urban households and industries.

- To protect the environment through the enhancement and restoration of water quality and the abatement of water pollution.

- To strengthen regional and international cooperation in order to keep the mutual benefits from the watershed management of the trans-boundary river basins.

- To enhance the protection, conservation and sustainable development of natural forests and wood lands by:

  (i) Promoting research on farm forestry, improved multi-purpose tree species (with emphasis on indigenous ones), crop, forage and livestock genotypes;

(ii) Developing management plans for the protection and development of forest areas and national parks;

(iii) Encouraging the peasants and the private sector to participate in developing buffer zone tree plantations for fuel and industrial needs;

(iv) Promoting community planning and implementation of systems of grazing and natural woodland management through a mechanism of incentives for the local communities and individuals in the agro-pastoral and pastoral zones;

(v) Utilizing forest resources on a sustainable basis, minimizing further reduction of the remaining area of natural forest by enhancing the use of alternative source of energy such as dung and crop residues; and also prohibiting the utilization of endangered tree species.

- To strengthen capacity building and create public awareness through:

(i) Training of skilled manpower;

(ii) Environmental education aimed at the enhancing peoples participation in the development and conservation of forest resources;

(iii) Initiate partnership between institutions dealing with forestry and farmer and private investors interested in conservation and development.

- To promote forestry research and develop forestry data base at the central and regional levels for the purpose of planning and implementation as well as for the proper accounting of forestry's contribution to the national economy and protection of the environment.

- To properly manage crop and other plant resources by:

(i) Producing a national crop priority list based on the level of vulnerability to genetic erosion, nutritional quality, industrial and environmental potential etc, to be followed by immediate collection;

(ii) Supporting crop germ plasm conservation by seed multiplication of important species though the Plant Genetic Resource Center (PGRC) for distribution to farming communities. This would be coupled with the mechanism of encouraging farmers by PGRC to multiply seeds and exchange among themselves;

(iii) Strengthening and expanding genetic resources conservation programs on medicinal, forage and microbial plants.

- To handle through scientific management, the animal genetic resource of the country by:

(i) Taking inventories of wildlife;

(ii) Conserving and restocking wild animals threatened with extinction;

(iii) Carrying out applied research to enhance preservation of wild and domestic animal species; and

(iv) Issuing laws and regulation in relation to conservation and management of wildlife.

- To protect the environment by controlling pollutants resulting from various industries such as manufacturing, mining, construction and energy; and agricultural activities as for instance, increased

use of fertilizers herbicides, pesticide, through the introduction of laws, regulations and standards and through the use of non - polluting - production technologies's and efficient waste treatment devises.

2.5 Mining

The important role of mining in the economic development strategy of Ethiopia is well recognized as the sector is envisaged to contribute to the expansion of export trade, and also to the objectives of agricultural and industrial development through the provision of primary and intermediate inputs.

Ethiopia is well endowed with a wide variety of minerals including all classes of metals as well as industrial and energy minerals. Nonetheless, because of the low level development of the economy and technical know-how, only a limited exploration and development activities had been carried out. It was recently that a modern industrial scale mining of gold stared. Oil exploration began quite sometime back but with a low intensity.

To date, the contribution of minerals to GDP is to the tune of 2 percent, but with its vast potential mineral development is expected to emerge as a major and critical sector of the national economy as outlined below:

With regard to modern prospecting and exploration of Metallic Minerals, a number of prospects of gold associated with base Metal sulphide mineralization and an Iron ore deposits of magmatic segregation origin have been identified in the Wellega, Assosa and Sidamo areas. A systematic exploration for primary gold in Adola, over 40 prospects were located. Among these Lege-Dembi and Kinticha were selected respectively for gold and tantalite development. Exploration in the Bulbul, Hagere-Mariam and Moyale area have variously shown gold, rare metal and rare earth metal mineralization.

In the sphere of Non-Metallic Minerals, Dallol Potash deposit in the Danakil Depression, is the most significant industrial mineral in Ethiopia. Other non-metallic minerals in the country include; quarts, soda ash, gemstones, sulphur, diatomic, bentonitie, phosphate rock, gypsum, dolomite, limestone , marble, granite, graphite, mica, etc.

The country's potential for the exploration and development of energy minerals is also vital. Although these has not, as yet been a significant commercial oil discovery, there has been occurrences of oil seeps in the Ogaden area and north-western highlands. Natural gas deposit has already been discovered at Calub in the Ogaden, estimated at 2.7 trillion cubic feet (tcf); the development of which is underway. Geothermal resources exploration has also taken place in the rift system south of Dessie - Assab road, Langano, Corbitti and Abaya in the south and Tendaho in the north-east. Of these exploration drilling of the Langano field has proven viable and is awaiting development.

Coal and lignite exploration has resulted in the definition of the 19 million ton of lignite deposit in Chilga, Gondar, and in the definition of other prospects and deposits in Wellega, Shewa, Wello, Wolliata and Illubabur. Delbi-Moye's (South of Jimma) coal and oil shale deposits is the most important discovery whose reserves are estimated at a total of 65.120 million tons of coal with about 112 million tons of oil shale.

Mineral production in the country has been limited both in size and in scope. The 1991/2 value of production was estimated at about Birr 210 million and constitutes about 38 percent gold, 36 percent cement and lime 13 percent mineral water, 6 percent salt, 5 percent bricks 1 percent Marble and another 1 percent soda ash

and rare metals. With the introduction of modern technology and involvement of the private sector, mining is expected to evolve from a static traditional artisanal industry into a modern one.

Currently, the emphasis on mineral development is to expand area of coverage, increase in the density of work and reorientation of polices towards private participation. Thus, the focus now is on the development of gold and natural gas. Moreover, development of selected non-metallic minerals with a view to satisfy raw material needs for industry, agriculture and construction, as well as development of geothermal and coal aimed at easing the energy demand; are given due emphasis.

In the following section attempt would be made to identify the major constraints and the strategies envisaged for the successful mineral development in Ethiopia.

It is obvious to observe that the country's low level of industrial development coupled with subsistence peasant agriculture has deprived mining of an indigenous market. Furthermore, the weak state of international mineral trade and the under-developed state of infrastructure has had severe limitations on the production and marketing of most minerals.

Another problem is the paucity of the mineral resource data base. The required volume of mineral data all over the country is not known in sufficient detail and coverage. This insufficiency of information hinders the extent to which the resource and its development potential can be illustrated and its investment promoted.

Since the level of domestic capital formation is low, it has not been possible to raise indigenously the capital investment

needed for the sector. Neither was it possible to attract foreign investment for the development of mining because of policy and legislative reasons. Lack of public awareness, especially by the business community of the mineral resources and their potential use is also a problem that deserves mention.

The development of mining industry is highly dependent on the availability of extensive transport and communications infrastructure. Other than those minerals of high value and low bulk such as gold and platinum, the development of mineral deposits will be constrained by the low level of development of infrastructure.

The rural communities in Ethiopia are important producers and users of minerals in the formal and informal sectors. Women, for instance, produce virtually all the pottery in the country. Lack of adequate encouragement for this cottage industry has deprived it of the possibility of realizing its potential to attain higher standards of production. This requires the industry to be provided with technical assistance to improve mineral raw material and production technology use. The same holds true to rural population engaged in artisanal gold mining and salt mining as well.

The following strategies will be used to ameliorate the problem faced by the sector:

- To improve the organization and dissemination of mineral information and thereby provide a basis for longer term mineral exploration and development by way of:

(i) Systematic compilation of resource data;
(ii) Carrying out systematic mineral exploration;
(iii) Greater availability of laboratory analysis;

(iv) Greater use of exploration core drilling;
(v) Increase of regional prospecting; and
(vi) Greater use of computerized data analysis and bases.

- To increase mineral development information base by making mineral production and deposit information available for the planning and execution of mineral development through:

(i) Enforcing a system of reporting on mineral production, and on the generation and submission of other mineral information;
(ii) Instituting a public domain mineral information system and Minerals Yearbook;
(iii) Giving priority to the compilation of exploration information on precious metals, energy and industrial minerals;
(iv) Strengthening the provision of technological tests and use technology in-fill data for selected non-metallic minerals; and
(v) Exchange of experiences with other mineral development regulation agencies in the developed and developing world.

- To discover and develop oil and gas deposits in the country for the provision of commercial industrial and domestic fuels by:

(i) Increasing the volume of information available on natural gas development;
(ii) Generating data that can be used in promoting virgin prospect areas for oil exploration; and
(iii) Unifying the existing petroleum information system.

- To support private sector mining, mineral processing and mineral based manufacturing by:

  (i) Increasing awareness regarding opportunities in mining through public education;
  (ii) Promoting sustainable mineral development by insuring internal integration within mining and external linkages with other economic sectors;
  (iii) Enabling artisinal mining by rural communities in order to improve mining methods and contribute to rural development.

- To support small scale mining by way of:

  (i) Promoting indigenous mineral use as an integral and contributory element in over all economic development;
  (ii) Granting infant industry status and protection to small scale mining and mineral based manufacturing;
  (iii) Remedy lack of information on mineral development opportunities and technologies;
  (iv) Making mining attractive for investment; and
  (v) Support private sector researches and development (R&D).

- To support artisinal mining sector to be able to operate profitably and contribute to economic output through:

  (i) The provision of assistance in extraction efficiency; and
  (ii) Encouraging handicrafts that use minerals

- To support mining service industries by:

(i) Encouraging local private ownership of mining, support industries in equipment making, and professional service;

(ii) Fostering linkages between mining activities and support services;

(iii) Maintain, R & D, design, demonstration and training capacities in mining methods and equipment.

- To encourage investment to improve the productive capacity of the sector and thereby increase the contribution of mining to the diversification and expansion of the economy and export earnings by:

(i) Applying maximum efforts to the development and production of minerals selected on the basis of their local use and being exportable;

(ii) Maximizing investment resource availability and adopting mechanisms for venture capital investment in mineral development; and

(iii) Attracting foreign investment in large scale mining in order to facilitate the acquisition of technology, investment capital and access to export markets for minerals.

- To raise the level of consciousness of the people and industry about the need for and commitment to sound environmental management through a continuous program of education, and provision of technical advise and assistance.

2.6 Education

The changing political and economic situations over the last few decades in Ethiopia have had tremendous impact both on the quantitative and qualitative evolution of the educational processes. Thus Ethiopian educational under development can be attributed, by and large, to its economic backwardness.

The quality of education has declined over the years mainly because of shortage of qualified teachers, instructional materials and other facilities vital to the learning teaching process. The weak link exhibited between theory and practice in the content of the curriculum has raised questions of relevance of education in addressing societal pressing needs and problems.

Even in quantitative terms Ethiopia has one of the lowest school enrolment ratios in Africa. The figure for elementary schools is only 20 percent and that of high school 12 percent of the eligible age group. Female participation rate stands at about 46 percent. The literary rate of the population is about 62.5 percent

The capacity of technical and vocational schools is also very limited with only 17 schools. The number, type and area of specialization are considered to be below the manpower requirement of the country.

Higher education in Ethiopia is not developed as other developing countries. These are only two national Universities and 14 Colleges and specialized institutes in the areas of Agriculture, Pedagogy, natural and social sciences, engineering and medicine.

Research in higher educational establishments has also not yet developed up to the expected level primarily due to lack of staff or high ratio of teaching to research and shortage of fund.

There are specialized supportive institutions that have to be further strengthened to improve the education system. Theses are Educational Mass Media Agency (EMMA) with 12 radio stations; Educational Materials Production and Distribution Agency (EMPDA) which has production facilities for textbooks, science kits, furniture etc; and with a capacity to meet 30% of the current demand.

The other most important establishment is the Institute of Curriculum Development and Research (ICDR) aimed at improving the content of the curriculum developing scientific methodology and overall improving the quality and relevance of education through studies and pedagogic research.

Besides, the internal efficiency of the educational system leaves much to be desired as demonstrated by the rate of drop outs at all levels of education. Thus about a third of the students enrolled in grade 1 drop out. The drop out rate for junior, and senior secondary schools is 10 percent and 17 percent respectively. At higher institutions of learning the drop out rate is around 10 percent.

The structure of education has also been changed with the aim of improving the quality of education. The new structure constitutes 4-6 years of kindergarten, 1-8 grades of primary education, (with 1-4 basic and 5-8 general education) general secondary education 9-10 and a preparatory senior secondary education of 2 years as well as a system of vocational technical education and higher education.

In general, Ethiopian education, although satisfactory by international standard, did not focus much on the objective socio-economic realities of the rural people. Besides the issues of appropriateness of educational objectives and relevance of the content of the curriculum, the low student participation rate from primary to tertiary levels remains a problem to be attended. In addition, the inadequacy of the education and training of teachers both in terms of quality and quantity, the insufficiency of educational materials, the rather weak state of sustainable support system such as supply of text books, mass media, research etc. are main constraints that have adversely affected the system of education and training.

To overcome the above mentioned bottlenecks the following educational strategies have been adopted.

- To revise the curriculum in such a way that it address the needs of the community by:

(i) Devising relevant curriculum that depicts the realities of the country;
(ii) Strengthening the teaching of science and mathematics;
(iii) Giving greater emphasis to problem solving approach in the teaching learning process;
(iv) Integrating research and education and establishing linkages between education and work;
(v) Developing an evaluation system to be able to test scholastic achievement and the education system as a whole.

- To upgrade expand and build new technical schools in accordance with the national manpower demand of the country.

- To decentralize the administration of education in line with the on going regionalization process; and establish a strong link between the schools and the community

- To upgrade the professional qualification and competence of teachers so as to improve the quality and standard of education through:

(i) Pre-services and in-service training; and
(ii) Instituting career structure and improve the working conditions of teachers in order to enhance their motivation and commitment.

- To improve the supply of educational materials through:

(i) Raising the level of production of EMPDA to full capacity;
(ii) Improving the efficiency of international procurement;
(iii) Promoting the participation of the private sector in the production of educational material; and
(iv) Mobilization of international assistance.

- To provide more educational services by expanding elementary and secondary education; as well as vocational training and higher education on the basis of trained manpower requirement of the national economy.

- To encourage research into curriculum development, methods of instruction and evaluation techniques and strengthen the link between academic research and production.

- To encourage the participation of the community in building schools, provision of furniture, enhancing involvement of the private sector, and introducing cost-saving mechanisms particularly for the beneficiaries of higher learning.

2.7. Health

Owing to the backwardness of the economy, the health status of the Ethiopian population is very low by any standards. This situation has been aggravated by an increasing growth in population, internal strife and natural calamities. As can be observed in the table below the high infant mortality rate of 110 and the low life expectancy of about 53 years of age illustrate the low level of development of the health sector.

Table 7: Selected Health Indicators

Infant Mortality Rate (IMR)	110/1000 LB
Child Mortality Rate (CMR)	99/1000 C
Maternal Mortality Rate (MMR)	5.6/1000 LB
Life Expectancy at Birth (LEB)	53.4 Yrs.
Fertility Rate (FR)	7.5 C/W
Crude Birth Rate (CBR)	46.7/1000
Crude Death Rate (CDR)	17.9/1000

Source: Health Sector Strategy

Nearly 75% of the endemic diseases in Ethiopia are communicable and essentially preventable. Malaria is now number one killer diseases followed by Tuberculosis. Although the trend for in AIDS is threatening, it is not yet a major health problem in Ethiopia, in relative terms. Nutritional disorders are also

important causes for morbidity and mortality. The average per capita intake of energy is estimated at 1750 cal. which is less than the daily average requirement.

The health service system in Ethiopia has the following specialized programmes.

- Malaria and other vector borne diseases
- Tuberculosis prevention and control
- Leprosy control
- Aids and other sexually transmitted diseases control
- Immunization programme
- Control of diarrhoeal diseases control
- Acute respiratory diseases control and prevention, and
- Control of Micronutrient deficiency diseases.

With 3 Medical and 7 Nursing and about 7 Paramedical schools, it is difficult if not impossible to meet the manpower demand of the health sector. The number of health research institutions is also negligible. Accordingly to information of the Ministry of Health (1994) the ratio of medical doctors and nurses per population is 1:24,841 and 1:11,000 respectively.

Inadequate infrastructure is another major constraint to the development of health services. Health care facilities are very low, maldistributed and ill equipped; and a considerable number of them need either major repair or replacement. It is also worth mentioning that only 12% of the rural and 70% the urban population have access to safe water and the national sanitation coverage is only 7%.

To sum up, the main problems of the health sector in Ethiopia, among other things, are poor and low health care facilities, ineffective and centralized health care delivery system, acute shortage of human and material resources and lack of participation of the private sector.

- To come to grips with these problems the new health sector strategy focuses on the preventive and promotive aspect of health care giving due emphasis, at the same time, to essential curative service. The principal elements of the strategy are:

- To strengthen preventive and promotive health services by:

(i) Establishing primary health care units that would provide a comprehensive and integrated health service incompassing health education, preventive activities and the treatment and control of common communicable and epidemic diseases;

(ii) Giving emphasis to material and child care, family planning and service, nutrition education and communication; and

(iii) Giving advise to all concerned on safe disposal of waste, environmental pollution and incorporating health and safety standards in housing and work premises.

- To provide on a regular basis adequate supply of drugs by:

(i) Preparing a list of essential drugs and medical supplies for all levels of the health services;

(ii) Increasing the efficiency of the system of procurement, distribution, storage and utilization of drugs and medical supplies;

(iii) Building production capacity of basic drugs and instituting quality control mechanisms; and

(iv) Encouraging the private sector to participate in the procurement, distribution and production of drugs and supplies.

- To carry out the process of decentralization through:

(i) Establishing health council with strong community participation;

(ii) Transferring health care organization, planning and implementation to the regions.

- To strengthen health education through:

(i) The mass media;

(ii) Community & Religious leaders;

(iii) Professional associations;

(iv) Schools and other social organizations.

- To improve the human resource development of the health sector by:

(i) Increasing the necessary health manpower, with an appropriate mix of skill through training and upgrading;

(ii) Rationalizing the ratio of deployment;

(iii) Developing a career structure with an acceptable incentive system.

- To strengthen research and development activities through

(i) Identifying priority areas of the health sector;

(ii) Expanding applied research on major health problems and health service systems;

(iii) Coordinating and encouraging research on traditional medicine including its linkage with modern medicine;

(iii) Strengthening research capabilities of national institutions.

- To improve financing of the health care delivery system by:

(i) Allocating a realistic and sustainable budget and ensuring efficiency of utilization;

(ii) Improving the existing cost-sharing mechanism for hospital services and instituting other cost sharing means such as user fees, insurance systems etc.;

(iii) Mobilizing the community to contribute in kind for local health care services;

(iv) Creating an enabling environment for the participation of the private sector, Non-Government Organizations (NGO's), bilateral and multilateral agencies to assist community and government efforts in strengthening the health sector.

3. Investment

The polices of the past regime namely, extensive nationalization; central planning framework, issuing of legislation which barred private investment, resulted in a very low level of investment. To change the structure of the economy, policy reforms and measures have been taking by the government. Now the private sector is encouraged to play a prominent role in the socio-economic development of Ethiopia. Thus the private investor can invest in most of the various sectors of the national economy, except the following:

(i) Defense industry;
(ii) Large-scale production and supply of electrical energy;
(iii) Postal and telecommunication service;
(iv) Large-scale air, rail and marine transport services;
(v) Large scale insurance, banking and financial institutions;
(vi) Imports of petroleum and armaments.

Foreign investors can have up to 100% equity ownership in new investment. They are also encouraged to invest jointly with domestic investors. The main criteria used for determining the approval of agreements are:

(i) The level of priority of the investment area;
(ii) The amount of foreign equity participation;
(iii) Degree of technology, technical skill, and know-how to be transferred;
(iv) Foreign exchange earnings anticipated from the investment;

(v) The degree of utilization of local raw material and services;

(vi) Contribution to local employment generation;

(vii) The degree of linkage effects to be created;

(viii) Technical assistance, skill-training and applied research and development to be undertaken;

(ix) Access to world markets and access to foreign partner's marketing facilities.

With the aim of encouraging private investment and thereby promote the inflow of foreign capital and technology both domestic and foreign investors are granted the following major incentives:

- Exemptions from payment of import customs duties:

(i) One hundred percent exemption from the payment of import customs duties and other taxes levied on imports is granted to capital goods and equipment as well as spare parts to 15% of the value of the capital invested. Such goods may be transferred to another investor having similar privileges.

(ii) Exemptions from import duties and taxes levied on imports shall be granted for raw materials necessary for the production of the goods for export market.

- Exemptions from payment of export customs duties. With the exception of coffee, Ethiopian products are services destined for export are exempted from the payment of any export tax and other taxes levied on exports.

Income Tax Holiday.

(i) Any income tax derived from an approved new investment shall be exempt from the payment of income tax for periods ranging from 3-8 years depending on priority area and location.

(ii) Income derived from an expansion whose invested capital is at least 50% of the registered capital is also exempt from the payment of income tax for a period of two years.

(iii) Profits earned from new investments and expansions are exempt from the payment of income tax for 3 and 2 years respectively.

- Exemption from the payment of taxes on remittance of capital. A foreign investor may make the following remittance, at the prevailing rate of exchange on the date of remittance.

(i) Profits and dividends accruing from investment;

(ii) Principal and interest on an approval foreign loan;

(iii) Fees, royalties or any other payments accruing from a technology or management agreement;

(iv) Proceeds obtained from a foreign investor from the sale or transfer of shares or assets of an enterprise in part or whole to a domestic investor;

(v) Proceeds obtained from sales of assets upon the liquidation or winding up of the business of foreign investor or enterprise due to bankruptcy.

- Investment guarantee and protection:

Ethiopia has ratified the Convention establishing the Multilateral Investment Guarantee Agency (MIGA), which provides protection

against political and non-commercial political risks, such as currency transfer risk, expropriation and nationalization, wars and civil disturbances and breach of contracts.

According to the Investment Office of Ethiopia, (IOE) from July 1992 up to the 1st half of 1994/95 fiscal year, 1368 projects with estimated cost of 10612.0 million Birr have been given investment certificates. As can be seen in the table below, of the total estimated capital cost of the projects, manufacturing accounts for 39 percent, agriculture 14 percent, real estate 14 percent, construction 10 percent and transport 10 percent.

Table 9

Summary of Projects Which Have Been Given Investment Certificate

'000,000

	1992/93		1993/94		1st half of 1994/95		Cumulative	
	No. of Projects	Capital Cost	No. of Projects	Capital Cost	No. of Projects	Capital Cost	No. of Projects	Capital Cost
Manufacturing	230	1883.3	249	1547.2	97	724.3	576	4155.6
Agriculture	47	125.4	154	1083.6	96	270.9	297	1479.9
Real estate	130	801.8	78	452.9	14	121.0	222	1374.9
Hotel & tourism	56	302.9	47	183.6	22	392.4	125	858.9
Social services	11	14.1	18	100.6	4	10.7	33	125.4
Construction	4	72.5	12	370.5	11	626.8	27	1069.9
Trade	10	23.3	33	162.2	9	69.7	52	255.2
Transport	3	137.0	14	47.4	3	848.9	25	1083.3
Mining & Quarrying	3	172.7	2	12.9	5	23.4	10	209.0
T O T A L	509	3533.0	607	3940.9	251	3082.1	1368	10612.0

Source: Investment Office of Ethiopia (IOE)

Out of the 1368 licensed projects 500 were issued in 1992/93, 607 in 1993/94 and 261 in the first half 1994/95. There appears to be a slight down turn in seeking licenses.

On the other hand, it can be observed that only 70 projects with a capital cost of Birr 347.6 million have been operational in the past two fiscal years - 45 of which were manufacturing and 15 agricultural projects. In 1994/95 additional 45 projects with estimated cost of Birr 407.8 million were entering the operation stage of which 26 are agricultural and 13 manufacturing projects.

4. Science and Technology

It is quite obvious that science and technology plays a crucial role in the social and economic development of a country. Unfortunately, the level of development of science and technology (S&T) in Ethiopia remained very low.

The gap between the indigenous technology and the imported technology has been widening, without a significant development of domestic science and technology capacity. Thus to build the country's science and technology capability and contribute to national economic development the government has issued science and technology policy, whose, broad objectives are stated hereunder:

(i) To build national capability to generate, select, import develop, disseminate and apply appropriate technologies.

(ii) To develop the knowledge, culture and the scientific and technological awareness of the people of Ethiopia, and promote the development of traditional, new and emerging technologies.

(iii) To ensure that science and technology activities are efficient, effective and development oriented.

In order to realize these above mentioned objectives, the following major strategies are set:

(i) To improve and further strengthen quality of science and technology education at all levels of the educational system of the country.

(ii) To establish close linkages between S & T education, research and development and production.

(iii) To establish a national S & T information network capable of acquiring relevant information to national development needs.

(iv) To ensure that the technologies transferred are appropriate and towards this end develop capacities to modify/alter and adapt the technologies.

(v) To encourage and support the publication of books, research results, journal and periodicals of science and technology.

(vi) To build the capability and methodology to identify the scientific content of traditional technologies and disseminate those that are found useful.

(vii) To establish an efficient national patent and technology transfer system to promote and support local technological innovations and creative achievements.

(viii) To encourage the private sector and its capital to participate in S & T development activities through the provision of tax and other incentive mechanisms.

(ix) To mobilize resource for S & T development through strengthening international cooperation.

5. Population

High birth rate and a declining mortality rate has resulted in a very high growth rate of Ethiopia's population. In 1984 the population growth is estimated to be 54.9 million with a growth rate 3.1 percent per annum. At present total fertility rate stands at 7.7 children per woman.

If one looks at the age structure, most Ethiopians are young with a mean age of about 17 years. According to the 1984 census, the proportion of total population under the age of 15 was 48.0%. Such population structure coupled with rapid population growth, high fertility rate definitely aggravates population pressure on available resources and exacerbates the severe state of under-developments.

Thus the whole situation leads to the depletion of natural resources including land fertility and environmental degradation, low productivity, high rates of unemployment, limited access to social services such as education, health and housing, food insecurity, high prevalence of maternal, infant and child morbidity and mortality, and low life expectancy at birth.

The government therefore has placed population programme high on its agenda and has established the National Office of Population in the Office of the Prime Minister. The office is responsible for the overall coordination of population programmes, and has recently adopted population policy whose major objectives are as follows:

(i) To close the gap between high population growth and low economic development.

(ii) To expedite economic and social development processes through wholistic integrated development programmes.

(iii) To maintain and improve the carrying capacity of the environment.

(iv) To raise the economic and social status of women.

- To be able to translate these objectives the following strategies inter-alia, have been drawn:

(i) Provision of contraceptives by mobilizing private and public resources.

(ii) Come up with a policy that would create the conditions for the integration of women in the national economy.

(iii) Provision of technical and credit support for those who would like to engage in small sized private enterprises.

(iv) Giving population education through formal and informal media, including the distribution of low cost radic receivers and information materials.

(v) Establishing research programme and teen-age and youth counselling center in reproductive health.

MINISTRIES & OTHER IMPORTANT OFFICES

1. MINISTRY OF FOREIGN AFFAIRS
   P.O.BOX 393
   ADDIS ABABA

2. MINISTRY OF JUSTICE
   P.O.BOX 1370
   ADDIS ABABA

3. MINISTRY OF FINANCE
   P.O.BOX 1905
   ADDIS ABABA

4. MINISTRY OF ECONOMIC DEVELOPMENT AND COOPERATION
   P.O.BOX 2428
   ADDIS ABABA

5. MINISTRY OF TRADE AND INDUSTRY
   P.O.BOX 704
   ADDIS ABABA

6. MINISTRY OF AGRICULTURE
   P.O.BOX 62347
   ADDIS ABABA

7. MINISTRY OF WATER AND RESOURCES DEVELOPMENT
   P.O.BOX 1034
   ADDIS ABABA

8. MINISTRY OF PUBLIC WORKS AND URBAN DEVELOPMENT
   P.O.BOX 3386
   ADDIS ABABA

9. MINISTRY OF TRANSPORT AND COMMUNICATIONS
   P.O.BOX 1238
   ADDIS ABABA

10. MINISTRY OF MINES AND ENERGY
P.O.BOX 486
ADDIS ABABA

11. MINISTRY OF EDUCATION
P.O.BOX 1367
ADDIS ABABA

12. MINISTRY OF HEALTH
P.O.BOX 1234
ADDIS ABABA

13. MINISTRY OF INFORMATION AND CULTURE
P.O.BOX 1364
ADDIS ABABA

14. MINISTRY OF LABOR AND SOCIAL AFFAIRS
P.O.BOX 2056
ADDIS ABABA

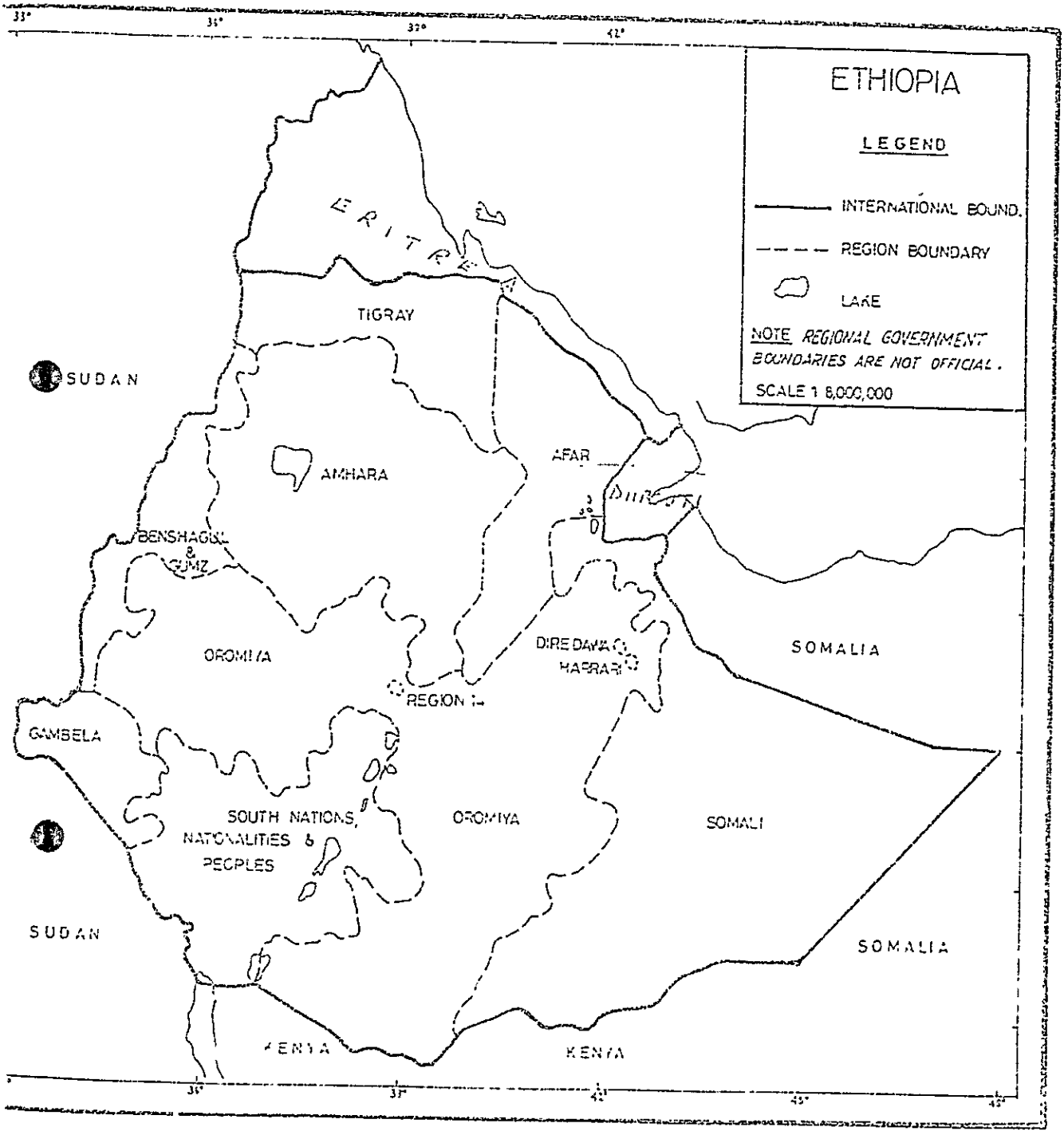
15. BOARD FOR THE ADMINISTRATION OF FEDERAL REVENUE

16. INVESTMENT OFFICE OF ETHIOPIA
P.O.BOX 2313
ADDIS ABABA

17. ETHIOPIAN TOURISM COMMISSION
P.O.BOX 2381
ADDIS ABABA

18. ETHIOPIAN SCIENCE AND TECHNOLOGY COMMISSION
P.O.BOX 2490
ADDIS ABABA

REGIONAL GOVERNMENTS



REFERENCES

Ethiopian Science and Technology Commission, *ANNUAL REPORT, 1994*

_____, *National Science and Technology Policy.*

Investment Office of Ethiopia, *A Guide to Investment.*

Ministry of Planning and Economic Development,

An Economic Development Strategy for Ethiopia: A Comprehensive guidance and Development Strategy for the future, Addis Ababa, September, 1993.

_____, *Survey of Current Economic Condition in Ethiopia, Vol iii, No 1. Policy Analysis Unit, A.A. June, 1995.*

_____, *Social Development in Ethiopia, Prepared for the World Summit for Social Development, Copenhagen, Denmark, 6-12 March, 1995.*

Transitional Government of Ethiopia,

Education Sector Strategy, April, 1993

_____, *Health Sector Strategy*, April, 1994
National Population policy of Ethiopia, Office of the Prime Minister, A.A April, 1993.

_____, *Sectors' Strategies*, Addis Ababa, May, 1994.

UNDP, Country Program Brief, *Orientation paper for Industrial Sector Program*, Review Mission, 6-17 November, 1995.

_____ , Program Support Document, *Mineral Development*, Annex iii, A.A March, 1994