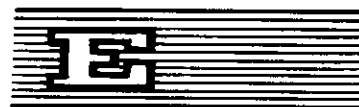


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ECONOMIC COMMISSION FOR AFRICA

Fifteenth session of the Commission/
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Ministers

Addis Ababa, 9-12 April 1980

**BACKGROUND PAPER TO THE THREE-YEAR PLAN AND PROGRAMME OF ACTION
FOR INDUSTRIAL COLLECTIVE SELF-RELIANCE FOR DEVELOPMENT**

I. Introduction and background

1. In recent decades, most African countries accepted the fundamental role of industrialization in raising the standards of living, alleviating poverty in the economic development process and, to this end, adopted industrialization policies aimed at creating industries to produce consumer goods in order to replace imports and create employment. This policy was often essentially dictated inter alia by the following factors: (i) the limited size of domestic markets in terms of the purchasing power of the population; (ii) limited financial resources to undertake large capital intensive projects; (iii) scarcity of indigenous managerial and technical expertise to undertake and manage major industries; (iv) lack of indigenous capability and experience of international markets and market development required in the establishment of basic industries; (v) preference by private entrepreneurs both indigenous and foreign for quick returns on invested capital leading to a concentration on commerce and short-term investments with short recovery periods and limited risks.
2. In those economies where private enterprise predominated the strategies followed to implement the import substitute policies were of an indirect character and included the following:
 - (a) Encouragement of private investment, especially foreign investment;
 - (b) Joint ventures between foreign investors and local companies, including parastatal or State corporations;
 - (c) Provision of legal and financial incentives and physical infrastructures and supply of guidelines, pre-feasibility information and investment promotion.
3. In other systems in which the role of the State was more direct, the above measures were supplemented by greater State intervention in direct industrial investment through various organs of the State and management agreements with foreign enterprises.
4. Owing to the small industrial base prevailing in most African countries at the time of independence, the industrial sector has, on the whole, made an impressive impact in transforming economic production in the region on the basis of import substitution. The magnitude of the contribution of the industrial sector is partly reflected in the rise of the contribution of manufacturing sector to GDP, which reflects savings in foreign exchange, the growth rates of the sector as well as the expansion of employment in manufacturing (see table 1).

Table 1. Growth manufacturing value added by subregion of Africa (in percentage)

Subregion	1970-1977	Annual average 1970-1977
North Africa	56.1	6.6
West Africa	69.6	7.8
East Africa	30.9	3.9
Central Africa	26.6	3.4
Developing Africa	51.3	6.1

Source: ECA Statistics Division, based on GDP value added at 1970 prices.

5. While these rates conceal a great deal of differences among countries it seems from the table that West Africa has been almost able to attain the yearly growth target of 8 per cent required to meet the Lima Target while the rates for East and Central Africa are much below that target. Among the individual countries, table 2 shows the countries with a growth rate of 8 per cent or over.

Table 2. Countries which achieved or/exceeded the minimum rate of growth of 8 per cent of manufacturing value added, 1970-1977

Country	Growth rates (percentage)
Algeria	11.09
Botswana	14.94
Congo	15.20
Gabon	28.65
Ivory Coast	9.65
Kenya	8.39
Libyan Arab Jamahiriya	21.22
Mauritania	10.95
Mauritius	14.41
Nigeria	15.78
Swaziland	19.56
Tunisia	12.74

Source: ECA Statistics Division.

6. These countries are not likely to maintain these high growth rates on the basis of import substitute industries or on the basis of their domestic markets.

7. During the same period nine countries experienced negative growth rates of manufacturing value added, namely: Angola, the Central African Republic, Equatorial Guinea, the Gambia, Ghana, Mozambique, Southern Rhodesia, Togo and Uganda.

8. The growth of employment follows more or less similar patterns where the annual growth of employment in manufacturing rose by 5.8 per cent in North Africa, 5.6 per cent in West Africa, and 2.7 per cent in East Africa; the figures for Central Africa are not available.

9. The relatively tragic backward position of African countries in the industrial sector, which is almost synonymous with development, is brought home sharply in table 3 which shows recent performance in different regions of the world. In 1963, Japan alone produced six and a half times more manufacturing value added than all African countries and about nine times in 1975. Between 1963 and 1975, the African region recorded the smallest relative increase in its share of value added of 0.01 per cent while Latin America increased its share from 1963 to 1975 with the result that while the share of Latin America was five and a half times that of Africa in 1963 it was six times that of the African region by 1975.

Table 3. Share of all regions in world manufacturing value added, 1963-1975 and 2000
(in percentage)

	1963	1969	1975	2000
Africa	0.7	0.7	0.8	2.0
Latin America	3.9	4.0	4.8	13.0
South and East Asia	2.0	2.0	2.5	7.0
Western Asia	0.3	0.4	0.5	3.0
Japan	4.6	6.9	7.1	75.0
Centrally planned economies	19.5	21.6	27.7	
North America	36.7	33.5	27.0	
Western Europe	30.5	29.1	27.8	

Source: UNIDO, World industry since 1960, Progress and prospects,
Sales No. E.79 II.B3, July 1979, tables II.2 and II.3, p.37.

10. Although successful in terms of replacing wide range of imports, the import-substitution policies and strategies used for implementing them have raised a range of economic and structural problems which include increasing dependence on imported inputs, low value added, limited industrial employment, inability to export manufactures, high prices of manufactures, low utilization of productive capacities, non-decreasing control of the industrial sector by expatriates, and greater demand for foreign exchange to keep industrial plants in operation.

11. In the light of the import substitution policies and strategies both public and private entrepreneurs have tended to concentrate new investment in light industries such as food processing, beverages, textiles, garments, wool and leather products, cement, paper and printing to the exclusion of heavy and basic industries. In some countries especially where the Government has played an active part through intervention and/or participation, industrialization has also covered some fertilizers, metal products, petroleum refining, iron and steel foundries, rubber, electrical products, etc.

12. With the absence of intermediate goods industries, African industry depends on imported raw or semi-finished materials, spare parts, machinery and equipment. It also depends on imported foreign technology and know-how all of which require increasing allocations of scarce foreign exchange. Owing to the extensive use of imported raw materials and intermediate inputs to African industries, the industrial sector is generally characterized by low-value added as a result of the high import content and low domestic input content. Among the major effects of this phenomenon are limited domestic backward linkages and loss of employment, and benefits which accrue to the advanced countries which produce these goods.

Table 4. Share of imported inputs of raw materials as percentage of total raw materials in selected industries in Africa, 1971 and 1972

Sector	(percentage)
Chemicals	
Basic chemicals	37.30
Fertilizers and pesticides	43.50
Drugs and medicines	45.40
Other chemicals	61.05
Metals/engineering	
Cutlery, handtools and general hardware	37.25
Metal furniture and fixtures	25.30
Structural metal products	63.80
Fabricated metal products	37.20
Agricultural machinery	92.30
Radio and television communications equipment	52.10
Household electrical apparatus	50.25
Other electrical supplies	48.55

Source: Country industrial development profile of the Federal Republic of Nigeria, ICIS, UNIDO, Vienna, UNIDO/ICIS 78 of 25 July 1979.

13. By far the most serious constraint has been the scarcity of foreign exchange to purchase industrial inputs. This shortage may be attributed to the unfavourable terms of trade for manufactures and primary products exported by most of the African countries, as well as the leakages of the invisibles such as freight and insurance.

14. Because of this heavy dependence on imported inputs, when foreign exchange earnings fall or fluctuate, the industrial sector becomes a liability on agriculture and mining rather than an asset. The need for greater use of local raw materials cannot be overstressed.

15. Low utilization of installed plant capacity is another phenomenon which is partly the result of the limited size of the domestic market of each country compared with plant size and the scarcity of foreign exchange to procure inputs. This phenomenon has a series of effects including low employment, loss of government revenues, low profits and dividends, shortages of consumer goods, and instability of exports of manufactures and loss of markets. The effect of protection, low capacity utilization and unfavourable prices of imported inputs on prices of African manufactures together with the lack of effective marketing institutions rule out effective expansion of intra-African trade in manufactures at a time when the markets of advanced countries are becoming inaccessible by virtue of high competition and rising protectionism.

16. A major characteristic of the African industrial scene is the dominant role of the foreign entrepreneurs and foreign finance. Although in some African countries some of the major industries are owned and operated by the State and others jointly by the State and foreign private investors, the foreign interests are on the whole dominant in most African industrial sectors. Among the major consequences of this are: preference

for short-term investment and rapid recovery of capital which raise prices; tendency of foreign firms, especially the transnational corporations which have global operations, to maximize imports of inputs as part of their foreign sales and thus discourage local production; the tendency to stifle the growth of indigenous enterprises through unequal competition, and annual transfer of profits and dividends abroad, thus worsening balance of payments problems.

II. Reorientation of industrial policies and strategies and restructuring of instruments for action

17. As agreed on by the Symposium on Industrial Policies and Strategies for Internally Self-sustaining Industrialization and Collective Self-reliance and endorsed by the fifth Conference of African Ministers of Industry ^{1/} in many countries of the region, import-substitution industries had been accepted as a starting point on the path towards industrialization in that they were meant to satisfy an existing domestic market based on imported goods. The expansion of import-substitution ran up against the limited size of domestic markets, and planners in a number of countries shifted their emphasis from import-substitution to export-oriented industries. The new export industries would undoubtedly require aggressive export promotion action and industrial restructuring. However, a number of questions concerning access to markets and domestic technology remains unanswered.

18. For the purpose of creating a pattern of self-sustaining industrialization, not only should local raw materials be increasingly processed domestically, but it is also essential that many of the intermediate and capital goods should be entirely or partially locally manufactured. Furthermore, mobilization of local resources should be increased to ensure a high level of industrial investment. African countries should therefore ensure that appropriate technologies are imported or developed and that known and potential local resources are used effectively.

Priority areas

19. The following areas were given as priorities in the strategies of various countries:

- (a) Agro-industries in general, but more particularly those based on agricultural raw materials, which are either already available locally or could be developed in time by backward integration and research;
- (b) Industries catering for the basic needs of the people, even those based on raw materials which are not available locally;
- (c) Labour intensive industries (several decentralized small-scale and handicraft industries dispersed throughout a country could help to meet this requirement while at the same time satisfying basic needs);

^{1/} Report of the Symposium on Industrial Policies and Strategies for Internally Self-sustaining Development and Diversification and Collective Self-reliance during the period 1978-2000 (E/CN.14/INR/227), Report of the sixth meeting of the Follow-up Committee on Industrialization in Africa, (E/CN.14/INR/228 paragraphs 46 to 49); Report of the fifth Conference of African Ministers of Industry (E/CN.14/INR/229, paragraphs 42 to 48, 54&55).

- (d) Engineering industries (such as metal-working, metallurgical, mechanical, electrical and electronic) for the manufacture of basic equipment and machine tools because such industries not only provide effective linkages but also served as vehicles for the transfer and development of technology;
- (e) Other local resource-based industries producing for both domestic and export markets;
- (f) Integrated rural development supported by programmes related to water supply, electricity and other infrastructures that not only provide the basis for agricultural development but also enhance industrialization.

20. The pattern of industrialization that the implementation of the basic needs strategy seemed to imply was likely to be one in which (a) industrialization was based on internal resources; and (b) attention was focused on the production both of goods for individual consumption to meet basic needs and of intermediate capital goods which were needed if economies were to generate a self-sustaining process of development within each country and throughout the region as a whole. It also emphasized that the capital and intermediate goods produced should be those which facilitated the production of basic goods such as food and goods used for shelter, clothing, education and health care. The importance of considering the 'production-processing-marketing' of food and agricultural products processing as an integrated and inter-dependent system whenever considering the development of food industries was endorsed. Thus the Symposium underscored the need to design a rational policy which would encourage the development of industries satisfying basic needs, creating higher employment and providing value added and industries linked with other sectors of the economy and located in rural areas with a view to stimulating development in these areas arresting the general trend toward rural emigration.

21. As in the past, participants at the Symposium emphasized the development of agriculture as a strong support for industrialization and expressed the view that agriculture and industry must be accorded equal priority. It was felt that a national development plan should, as far as practicable, clearly state what industrial policies and strategies it was intended to pursue. 2/

2/ The reorientation of the industrial policies and strategies proposed by the Symposium were made within the framework of the Strategy for the African Region in the International Development Strategy for the Third United Nations Development Decade adopted by the African Heads of State and Government in Monrovia in resolution CM/Res.722 (XXIII) which, *inter alia*, underlines as priorities for the region, self-sufficiency in food, creation of a sound industrial base, physical integration of Africa and sovereignty over natural resources.

III. Target project areas and priorities for collective self-reliance in industry

22. It is evident that there is a core of integrated packages of operational project areas which simultaneously covers the wide range of objectives specified by the Symposium and endorsed by the fifth Conference of African Ministers of Industry. For example, the provision of goods and services required to satisfy basic needs such as food, shelter, clothing, health, stable supply of clean water, cheap transport and communications, generates secondary demand for the development of such basic industries as engineering to produce agricultural inputs, water supply pumps, medical equipment, spare parts, and transport and communications equipment. Demand is also generated for the development of building materials for the construction of dwelling houses, and of fertilizer and pharmaceutical industries for use as inputs for food production and drugs.

23. Moreover, the development of the final consumer goods and equipment requires simultaneous growth of the intermediate goods industries which provide the inputs such as the basic chemicals, iron and steel and other metals which in turn depend on the exploitation of Africa's natural resources. Furthermore, it is well known that both indigenous technology and skills can be only generated, not in the final assembly of products, but only through effective participation in the design and production intermediate goods and final consumer and equipment goods. It is therefore necessary to review the supply and demand of a number of specific areas which exert considerable linkages from and/or to other sectors, and which are also given priority in the Monrovia Declaration and directly or indirectly serve to satisfy basic needs. These areas are the chemical, metal, building materials, food and engineering industries.

Demand for major chemical products in the African region

24. The final products of the chemical industry may be classified into the following: inputs to agricultural livestock and food processing; fertilizers, pesticides, insecticides, animal dips, plastic pipes for irrigation, food processing, medicinal and related health inputs, inputs for pharmaceuticals, detergents, water purifiers, clothing, household and education (synthetics, soaps, pulp and paper, bleaches, dyes and paints), and those used in iron and steel and related industries. Most of these goods are directly related to the satisfaction of basic needs (food, health and clothing) of which the most essential ones are food and health, thereby making pharmaceuticals and fertilizers high priority product groups.

25. The order of magnitude of the demand for chemical products and basic chemicals in the African region is reflected in the fact that total imports which stood at \$US 1.3 billion in 1970 rose to \$US 3.5 billion by 1974 and by 1977 had increased to \$US 4.9 billion.

Between 1970 and 1977, imports of chemicals in North Africa had increased six fold, in West Africa about six and a half times and in Eastern Africa about four times (see table 5).

Table 5. Imports of chemical products (millions of United States dollars)

	1971	1973	1975	1977
North	397.5	611.4	1536.6	1807
West	345.7	432.5	910.4	1538.8
Central Africa	150.5	227.4	354.3	352.8
East	246.0	322.0	539.7	558.1
Other developing Africa	61.2	87.4	110.2	713.4
Total developing	1200.9	1680.7	3451.2	4970.1

Source: ECA Statistics Division.

26. The demand for pharmaceutical products in African countries is largely determined by the incidence of disease. The most common ones transmitted by human beings are intestinal parasitic and infectious diarrhoeal, air-borne diseases including tuberculosis, pneumonia, diphtheria, bronchitis, pertussis, meningitis, influenza, measles and chicken pox. The most widespread vector-borne diseases include: malaria, trypanosomiasis (sleeping sickness), bilharzia and river blindness. Poverty and malnutrition and unsanitary and congested living conditions are the most important root causes of the health problem in Africa. In spite of this, because of poverty and lack of facilities, the consumption of pharmaceutical products in Africa is the lowest in the world at 1.36 per cent while Africa's population is 9.5 per cent of the world total.

Table 6. Consumption of Pharmaceuticals (millions of United States dollars)

	Pharmaceutical consumption Millions of United States dollars	Million Population	Per capita consumption United States dollars
World	40 000	3 970	10.0
Western Europe	12 338	367	35.0
North America	8 080	237	35.0
North Africa	340	78	4.4
Rest of developing Africa	360	298	1.21
Developing Africa	700	376	1.86

Source: ECA: Report of the First ECA/UNIDO Chemical Industry Development Programme Mission, M79-757, table IV-7, para. 456.

27. The increasing demand for pharmaceuticals in Africa is thwarted by the lack of productive capacity as reflected in the fact that over 90 per cent of the needs are filled by imports with the possible exception of Egypt where the level is about 70 per cent. While developing countries as a whole produced \$US 4.2 billion of pharmaceuticals, equivalent to only 11.6 per cent of the world production, Africa's share at \$US 200 million was only 0.55 per cent of world production. 3/

28. During the last decade, perhaps the most serious feature of the African region has been the slow growth of agricultural production, especially food production, although over four fifth of Africa's entire population derive their living from agriculture. The failure in food production leads to increasing resources being diverted to food imports at high prices and raises the threat of possible use of food as a weapon in the future, increasing poverty and malnutrition and worsening the precarious balance-of-payments position of most African countries. This gloomy picture is only partly reflected in the following table which shows the deterioration in food production in the region from 1970 to 1977 when per capita food production declined by 1.4 per cent, with the West and Central African regions sustaining greatest declines at 1.5 and 1.3 per cent respectively.

Table 7. Food production in Africa (average annual growth rates) 1970-1977
 (percentage)

Subregion	Total food production	Per capita production
Northern Africa	2.1	-0.7
Western Africa	1.1	-1.5
Central Africa	1.0	-1.3
Eastern and Southern Africa	1.9	-0.9
Africa	1.3	-1.4

Source: FAO, Regional Food Plan; Tenth FAO Regional Conference for Africa, ARC/78/5, July 1978, para. 10, page 3, Table 1.

29. Among the key factors which have led to Africa's decreasing capacity to feed itself, the following may be cited: low productivity in agriculture, lack of effective food and nutrition policies, poor organization of land use, marketing and distribution, and food prices. Inputs which raise agricultural productivity are often categorized as infrastructure (transport, communications and storage), capital inputs (irrigation, research and mechanization) and biological inputs (fertilizers, seed improvement etc). Fertilizers, agricultural tools and implements as well as transport and communications all play a fundamental role in over-all economic development, even beyond agriculture.

3/ ECA: Report of the First ECA/UNIDO Chemical Industry Development Programme Mission, M79-757, table IV.5, para 475.

30. While differences in soils and rainfall are important, the utilization of agricultural inputs such as fertilizers undoubtedly has come to be recognized as essential in raising productivity in food production. The limited use of fertilizers in Africa relative to the rest of the world is reflected in table 8, which puts the region at the bottom of the list.

Table 8. Comparative consumption of fertilizers in different regions, 1975
(total consumption in 100 grammes)

Region	Per Hm. of agricultural land	Per capita
Developed countries	327	552
Centrally planned	290	262
Developing countries	62	68
Africa	24	60

Source: ECA Report of the First ECA/UNIDO Chemical Industry Development Programme Mission, M79-757, table II.4, para. 112.

31. Within the African region, the North African subregion followed by the Eastern African subregion are the subregions which imported more fertilizers, both of which experienced relatively small declines in food production (see table 9), and the Sahel subregions ranging from 78 and 83 per cent respectively. ^{4/} This greater use of fertilizers is reflected in the relatively higher yields per hectare for wheat, rice, maize, millet and pulses. ^{5/}

Supply of chemical products in the African region

32. Among the natural resources available in the African region for the production of of basic chemicals are: coal, natural gas, petroleum, salt, pyrite, sulphur, limestone, rock phosphate, ilmenite, fluorspar, bauxite, etc. These natural resources are transformed initially to produce basic chemicals, the most important of which are benzene, ammonia, ethylene, propylene, butylene, soda ash, chlorine, sulphuric acid, super phosphate, fluorocarbon, alumina, and calcium carbide. The different end-uses of these basic chemicals (for details see annex II) include fertilizers, pesticides, dye-stuffs, plastic materials, pharmaceuticals, sheep and cattle dips, glass, pulp and paper bleaches, detergents and so on.

^{4/} Op.cit. Table 5, para. 33.

^{5/} Op.cit. See tables B-4, 8, 10 and 12, FAO Regional Food Plan.

Table 9. Demand of fertilizers (thousands of metric tons).

	1973/1974	1975	1985	1990
North Demand	845	1 006	2 104	2 882
West Demand	93	210	1 048	1 603
Central Demand	36	14	126	191
Eastern Demand	410	423	1,199	1 787
Total	1389	1 653	4 457	6 463

Source: Regional Food Plan for Africa, Tenth FAO Regional Conference for Africa, 10-29 September 1978, Table E-2, and FAO Annual Fertilizer Review for 1973/1974.

33. In both the production of basic chemicals and the final uses of chemical products, the African region is highly deficient in productive capacity despite abundant natural resources, and most of the requirements are therefore met from imports. There is some production of basic chemicals such as sulphuric acid and caustic soda but this is primarily for the captive use of the few phosphate fertilizers plants ^{6/} and pulp and paper plants in the region. A basic chemicals manufacturing industry as an independent industry supplying the plants producing end-use chemical products has yet to be established but the production of fertilizers is often one of the first major areas in the development of the chemical industry because of the demand, especially that generated by large-scale farming.

34. The basic requirements for the development of the chemical industry in Africa include: availability of (a) the existence of markets to justify production at minimum economically viable levels; (b) the availability of complementary raw materials at reasonable prices; (c) the availability of fuel, electricity, water and transport facilities essential for the development of the industry in addition to skilled manpower and finance. Besides the lack of skilled management and operators, personnel is needed to plan, formulate projects, undertake contract negotiations for equipment and processes to reduce the current exploitation by unscrupulous foreign firms.

^{6/} Others include nitrogenous (N) and potash fertilizers (K_2O).

35. Besides a high degree of specialization, the international chemical industry is dominated by a few transnational corporations and some major oil companies which have integrated forward while other final product companies have integrated backwards to the production of raw materials by taking over old plants or through new investments. Among the major features of the industry are (i) the various sources of economies of scale for chemical plants, (ii) the significance of transport costs, (iii) mergers, (iv) multi-plant complexes, and (v) the significance of the size of orders, research and development and vertical integration.

36. The sources of economies of scale for chemical plants include the following: the 0.6 rule which relates capital costs and labour to output, i.e. $C=AQ^{0.6}$ where C is the cost and Q is output. 7/ Capital costs can be reduced by as much as 70 per cent if two identical plants are built in sequence and lower design costs. Direct labour and supervision overheads are generally proportional to capital costs, the rough estimate being obtained using an exponent of about 0.4. Another feature is the relative significance of feedstock which varies with the process and the possible source of economies of scale lies in the use of utilities, water and electricity.

37. Transport costs are a potential source of adverse economies of scale in supplying markets further away from the plant although there are economies of scale in bulk transport. Co-operation among plants may assist in planning new plants to reduce transport costs with fuller use of experience. Advantage can be taken of locating plants where raw materials are, subcontracting, provision of adequate over-all management, size of the orders, reduction of the high but essential costs of R & D for final products, joint marketing, and greater vertical integration between industries producing basic chemicals and those using them to produce final products.

Iron and steel

38. Final products of metal and engineering goods are primarily electrical and non-electrical equipment, tractors, agricultural machinery, railway rolling stock, private passenger cars, commercial vehicles, spare parts and components for vehicles and household appliances which account for about 73 per cent of all uses while all other uses account for 24 to 27 per cent. 3/ For more detailed uses of different types of metals see annex I.

39. The main intermediate goods used in the production of the final engineering goods listed above are iron and steel, copper, aluminium, lead, tin and zinc. These are made in primary shapes (ingots, blooms, billets, etc.), bars, plates, and basic structural and wire products.

40. The basic raw materials include iron ores, copper ore, bauxite, gravel and sand, zinc ore, tin ore, lead ores and coal, chromites, nickel and cobalt, which are available in a large number of African countries.

7/ C.F. Patten: Economies of Scale in Manufacturing Industry, Cambridge University Press, Occasional Paper 23, 1971, pp. 37-52.

3/ Economic Commission for Europe: Long-term prospects for steel consumption until 1985 and outlook for 1990 and past trends in production and trade (ECE/STEEL/9), 1 October 1976.

41. It is sometimes said that the consumption of steel is an indicator of the level of economic development. By this measure, Africa figures at the bottom since per capita consumption of steel in Africa is one of the lowest in the world, estimated at about 8 kg. compared to 300-600 kg in developed countries. Moreover, consumption of steel in Africa is primarily restricted to model rods, bars, sections, wire rail, plates and sheets mostly used in the construction industry rather than in the production of final engineering goods. Some indicative figures on production and consumption of iron and steel in Africa by subregion are given in table 10.

Table 10. Consumption a/ of iron and steel in Africa, 1967-1973 (thousands of metric tons)

Subregion	1967	1969	1971	1973	1975	1977
North Africa						
Consumption	1255.4	1787.3	1787.8	(2133.0)		
Production	270.5	433.0	379.4	(395.3)		
West Africa						
Consumption	272.4	381.2	597.6	731.6		
Production	...	...	...	...
Central Africa						
Consumption	153.5	186.3	287.0	296.2		
Production	...	...	...	...
Eastern Africa						
Consumption	473.2	531.2	754.1	566.7		
Production	160.0	161.0	176.0	171.0		
Africa						
Consumption	2298.6	3121.0	3411.8	3819.1		
Production	....	....	....	....

a/ Steel section, railway tracks materials, wheels, axles, ingots and semi-heavy and light sections, wire rod, strip, plates, sheets, wire, tubes and fittings and tin plates.

Source: ECA Statistics Division.

42. The percentage of demand for iron and steel satisfied from domestic production in the last few years has been estimated as 73 per cent for Latin America, 56 per cent for Asia, 12 per cent for the Middle East and 7 per cent for the African region.

43. It has been estimated that in order to raise per capita steel consumption from the levels of 8 to 9 kg prevailing in the late 1970s to 20 kg per capita by the year 2000, which will be only about 3 to 5 per cent of the levels already reached in developed countries, Africa's consumption should be 130 million tons of steel to the consumption of 3.8 million tons in 1973.

Agricultural tools, implements and machinery

44. The demand for agricultural tools and implements is determined by the dominance of the food industry in developing countries and serves as a link between industry and agriculture. Besides fertilizers, seed multiplication and irrigation, agricultural tools and implements constitute the other major input. The demand for agricultural tools, implements and machinery depends on the growth of agriculture, farm size, crop selection, soils and employment requirements. The dynamic factors generating the demand for agricultural tools, implements and machinery include the need to raise agricultural productivity and food production together with the demand for the modernization of agricultural production techniques. Moreover, the demand for agricultural capital goods in developing countries, which now accounts for 25 to 33 9/ per cent of the world total, is increasing rapidly, although production of these goods is relatively small owing to the relative saturation of the domestic markets of developed countries.

45. The need for agricultural inputs is related to the rising demand for food in Africa. The relative decline in the capacity of the African region to feed itself is reflected in increasing food imports. As seen from table 11, with the best possible intra-African trade in food and maximum feasible production and demand, the African region will have to spend between \$US 15 and 17 billion on food imports from outside by 1990.

Table 11. Extra-African imports and requirements of major traded food commodities in Africa, 1972-1990 (Thousands of metric tons)

Quantities	1972-1974	Alternative I a/ 1990	Alternative II b/ 1990
1. Cereals			
Wheat	7 529	12 566	12 548
Barley	650	2 779	2 751
Rice	944	1 258	-
Maize	603	1 010	-
Millet-sorghum	-	852	-
2. Animal products			
Meat products	58	2 707	2 412
Milk products	1 303	8 093	8 044
3. Fish products			
Fish for food	243	1 447	354
Total cost (Millions of US dollars)	3 540	17 222	15 051

Source: FAO, Regional Food Plan for Africa, Tenth FAO Regional Conference for Africa, 1978, ARC/78/5, page 26, table 17.

a/ Assuming intra-African trade shares in total trade remain at the 1962-1972 trend;

b/ Assuming all food surpluses are efficiently traded in the region.

46. The necessity for local production of agricultural tools and implements is dictated partly by the need to develop technologies and design products which will meet the special social, cultural and agricultural practices of the African region bearing in mind such criteria as simplicity, after-sales services, capabilities for maintenance and local production of spare parts, income levels of rural farmers and credit facilities. National procurement and standardization policies would form the basis for the development of the engineering industries producing agricultural tools and equipment. Indeed, the African Regional Centre for Engineering Design and Manufacturing will, inter alia, concentrate on agricultural tools, implements and machinery, so that the development of national and subregional production capabilities can be significantly complemented.

Transport and communications equipment

47. Transport equipment covers inter alia, the following products: buses, trucks, vehicle parts, ship-building and repairs, railroads, rail tracks, rolling stock, locomotives, tractors. Communications equipment includes radios and related products, telephones and telegraph equipment.

48. Transport and communications are essential for investment in industry and to be profitable for the agriculture, physical integration of the African region as called for by Monrovia Declaration as well as for the expansion of regional/subregional markets. Historically, African economies have been open economies measured in terms of the share of trade in gross domestic product and this trade is primarily extra-African. The creation of transport and communications services to integrate individual African countries and the region as a whole will call for an increasing level of investment in transport equipment and construction industries. According to the programme of the United Nations Transport and Communications Decade for Africa, the first phase projects 1980-1983 will cost about \$US 9 billion. Even without the Decade, the demand for transport and communications equipment is the most dynamic among all engineering products and imports of this category constitute one of the largest in the African region as shown in table 15.

Table 12. First phase projects, 1980-1983 (in millions of United States dollars)

Subsector	Regional projects	National projects	Total
Transport	4 056.33	4 205.61	8 261.94
Communications	182.99	230.76	413.75
Total	4 239.32	4 436.37	8 675.69

Source: United Nations Transport and Communications Decade for Africa, 1978-1988; Global Strategy and Plan of Action - First Phase 1980-1983 - Summary of Volumes I and II, E/CN.14/726, table I.

Building materials

49. The significance of building materials and thus implicitly of dwelling houses is apparent from the fact that for all the economically active labour force, more than 75 per cent of income is spent on five elements: food, clothing, health, transport and dwelling houses. Besides education, these are also the measures of the level of "development" and standard of living in every society. Among the four elements of expenditure, food and shelter take the largest share of a worker's income followed by clothing, health and transport.

50. The demand for houses in general is determined by the pace of development since construction is part of capital formation but, more specifically, the demand for dwelling houses is determined by: (i) the increase of population and the rate of urbanization in regard to urban houses; (ii) increasing awareness of the close relationship between unsanitary congestion and squalour with various diseases; and (iii) the rate of the rise of the income of a society.

51. Building materials consist primarily of wall materials (bricks, cement blocks, stone, wood), roofing materials (galvanized corrugated iron sheets, bricks); structural materials (i.e. iron bars, iron rods, plates, sheets and tubes); glass and sanitary wares; electrical fittings and appliances. A large percentage of these materials is not produced in Africa and the orders of magnitude of imports are given in table 13.

Table 13. Net imports of selected building materials (millions of United States dollars)

Product categories	1971	1972	1973	1977
Glass and related products	42.1	48.5	63.9	87.3
Structural clay products	46.0	56.3	28.2	136.6
Paints and finishing products	53.3	60.3	16.7	159.2
Cement, lime and plasters	38.7	150.5	290.3	850.8
Iron and steel products	900.6	393.1	1 472.5	2 309.1
Total	1 131.2	1 200.7	1 871.6	3 543.0

Source: ECA report of field mission on building materials (ECA/CMI/FCIA.14/WP/5), p.10.

52. As regards the supply of building materials in Africa, table 14 reveals the most striking features of the breakdown of costs of construction.

Table 14. Percentage distribution of costs of building in Africa

Category of cost	Percentage
Plant, equipment and overhead	15 to 25
Labour	20 to 35
Materials	45 to 60

Source: ECA report of the first Team of Experts on the Construction Industry and Building Materials Industry Development Programme (ECA/CMI/FCIA.4/WP/5), 7 January 1977, para. 12.

53. Contrary to expectations and owing to the low productivity of labour arising from poor management and low technical skills, labour costs in the building industry in Africa are of the same order as in developed countries although in Africa the cost of materials is generally higher. The outstanding feature is, however, the relatively high proportion in the cost of building materials of imported materials. Other major characteristics of this subsector in Africa are the extensive dominance of foreign firms as contractors with "unlimited tender value"; the second category of contractors are also mainly foreign with a sprinkling of indigenous firms. The last category of contractors consists of disorganized, relatively small, indigenous firms.

54. Among the basic raw materials for the building materials industry are limestone, gypsum, clay, raw asbestos, white sand, soda ash, borax, fluorspar, quartz and iron and steel products. As is reflected in table 13 above, iron and steel products constitute the largest single category of building materials imports in the African region. Thus the priority areas of the building materials and construction industry are added to transport and communications and agricultural tools and implements as indirect sources of demand for iron and steel industry.

Engineering industries

55. The core of the engineering industries consists of machine tools, metal forming equipment and foundries. While machine tools fabricate parts and components by cutting and grinding metals, the metal fabricating equipment makes parts by forging, pressing, punching, bonding and shearing. The foundries are used for casting the process of melting metal and pouring it into a mould most engines are produced this way. Casting is used for both ferrous (iron and steel) and non-ferrous metals (e.g. copper, zinc, etc.).

56. As regards the supplies for engineering goods, in most African countries productive capability over the last decade has been based on import substitution and in most cases activities are limited and isolated. However, African Governments are attaching increasing priority to the development of intermediate and other engineering goods. There are foundries but these are generally small, and as regards transport and communications there are many assembly and sub-assembly activities owned by transnational corporations for the production of cars, lorries, trucks and buses with the local content concentrated in production of bodies. In a number of countries, there are also facilities for local production of automotive parts and components. Another major area of interest is the assembly and/or manufacture of agricultural tools, implements and equipment, including tractors; less emphasis has been given to electrical equipment and machinery such as household goods. Repair and maintenance facilities exist in some limited fashion but there is generally no organized approach to the manufacture of spare parts and components in a systematic way which inter alia, calls for smaller product mix, standardization and guidelines on procurement policies.

57. Basic constraints in supplies include in fact, that national markets are often too small since engineering products are affected by economies of scale; lack of experience in sectoral and project planning, identification, feasibility studies, purchase of technology, and contract negotiations for the purchase of equipment. This often leads to exploitation by unscrupulous machine vendors. National institutions for the development of this particular branch are poor and liable to excessive dependence on foreign advisers; lack of technical and management capability and organization for raw material procurement, support services and maintenance are some of the other major bottlenecks.

58. The demand for engineering products is one of the most dynamic at both the national and the international levels. For example, during the period 1965-1972, the average rates of growth of exports of engineering products was 15.5 per cent while trade in other manufactures and all other commodities was 13.7 and 12.0 per cent respectively. ^{10/} Moreover, it has been estimated that the demand for engineering goods in a developing economy tends to increase at least one and a half times the rate of per capita income with income elasticity of demand ranging from 1.5 to 2. ^{11/} As can be seen from the following tables, among the most dynamic in terms of the demand for engineering goods in Africa are transport and communications goods, agricultural and construction equipment. Between 1974 and 1977 imports of engineering goods in Africa more than doubled from \$US 11.4 billion to \$US 28 billion while during the same period imports of transport and communications equipment rose fast to \$US 11 billion; imports of agricultural and construction goods also doubled in the three years. Thus if that trend continues to 1980, imports of engineering goods may be around \$US 40 billion compared to \$US 56 billion of apparent consumption postulated in the Lima target by the year 2000 for the Africa region.

Table 15. Imports of engineering products (millions of United States dollars)

	1974	1976	1977
Total engineering products	11 400.9	19 100.5	23 012.2
Transport	6 213.9	10 161.3	11 331.0
Agricultural implements and machinery	587.2	886.9	1 149.5
Agricultural machinery	313.4	437.9	536.3
Tractors	209.2	323.5	382.8
Food processing equipment	64.6	125.5	224.4
Construction and mining	464.5	774.5	905.8
Metal working machinery	187.6	293.2	225.2

Source: ECA Statistics Division.

59. As shown in the above table, the major final outputs of the engineering industry are transport and communications equipment, agricultural tools, implements and machinery, construction and mining equipment, and metal working machinery. In general, it has been noted that during a period of rapid industrial development, the demand for the capital

^{10/} Economic Commission for Europe, Role and place of engineering industries in national and world economies, United Nations Sales No. 74, II, E/Min. 7 - ENGIN/AL.1/R.3/Add.1, page 2.

^{11/} Ibid., page 8.

goods tends to outstrip domestic production capacities. Moreover, industrialization is a function of skills, technology and capital formation to transform natural resources into semi-finished and finished goods and capital goods: technical skills and technology are primarily the product of effective participation in the growth of engineering industry.

Backward integration as a strategy for the development of chemical and metal-working industries

60. All African countries have recognized and are trying to increase upstream processing of their natural resources in order to raise the value added and break away from the tradition of exporting raw materials in order to import manufactures. Out of every ten feasibility studies on processing raw materials only a few usually result in viable projects primarily because of the limited character of domestic demand. This has led to the attractiveness of export-oriented resource-based industries often directed at markets of developed countries. The continuing tariff and non-tariff protectionism for semi-manufactures and manufactures to protect existing plants in developed countries even within vertically integrated transnationals is a source of major concern among developing countries. All this will dictate the pace of upstream processing of natural resources in the African countries.

61. Like basic chemicals, intermediate goods such as iron and steel and copper serve as inputs in the production of finished products. Thus with few exceptions such as the direct demand of the construction industry, the economic viability of iron and steel and copper industries in Africa where the domestic market is a major restraint is dependent on the size, growth, structure and management of the consuming industries, namely, the final products of the chemical and engineering industries. In other words, the demand for the final products of chemical and engineering industries constitute the principal determinants of the establishment of viable basic chemicals and iron and steel, copper and basic chemicals industries in Africa. Therefore, perhaps, one of the more viable strategies is backward integration from final chemical and engineering industries. This would probably call for the establishment of a few large chemical and engineering industries which would inter alia also be engaged in market development and act as the major investors in iron and steel, copper and basic chemicals. These national structures would also serve as the main instruments for industrial co-operation among African countries by pooling natural resources, finance and manpower as well as markets and marketing for production and distribution of priority product lines. 12/

12/ The fifth Conference of African Ministers of Industry adopted resolution 1(V) on the establishment of African multinational corporations (E/CN.14/INR/229).

ANNEX I

MAJOR CONSUMERS OF SELECTED METALS

Material	Code	Industry	Per centage of total consumption
Total steel	3717	Motor vehicles and parts	18.9
	3441	Structural and ornamental work	10.9
	3411	Tin cans and other tinware	8.2
	3463	Metal stampings	4.5
	3443	Boiler shop products	4.5
	3991	Iron and steel forgings	3.0
	3444	Sheet metal work	2.3
	3489	Wire work, n.e.c.	2.1
	3494	Bolts, nuts, washers, and rivets	2.1
	3522	Farm machinery (except tractors)	1.9
	3439	Heating and cooking equipment, n.e.c.	1.8
			<hr/> 60.2
Carbon steel, sheet and strip	3717	Motor vehicles and parts	37.4
	3463	Metal stampings	8.7
	3444	Sheet metal work	5.2
	3491	Metal barrels, drums, and pails	3.9
	3441	Structural and ornamental work	3.5
	3585	Refrigeration machinery	3.5
	3429	Hardware, n.e.c.	2.7
			<hr/> 64.9
Carbon steel, plate	3443	Boiler shop products	31.4
	3441	Structural and ornamental work	15.8
	3731	Ship building and repairing	6.1
	3531	Construction and mining machinery	5.6
	3742	Railroad and street cars	4.6
	3717	Motor vehicles and parts	4.5
			<hr/> 67.8
Carbon steel, bars and bar shapes	3717	Motor vehicles and parts	18.1
	3441	Structural and ornamental work	17.7
	3391	Iron and steel	9.7
	3522	Farm machinery (except tractors)	6.3
	3494	Bolts, nuts, washers, and rivets	4.7
	3495	Screw machine products	2.8
	3521	Tractors	2.6
	3531	Construction and mining machinery	1.8
			<hr/> 63.7

Material	Code	Industry	Per centage of total consumption
Carbon steel, structural shapes	3441	Structural and ornamental work	66.6
	3443	Boiler shop products	4.1
	3742	Railroad and street cars	3.3
	3731	Ship building and repairing	3.1
			<hr/> 77.1
Iron castings	3717	Motor vehicles and parts	51.1
	3521	Tractors	7.3
	3541	Machine tools	3.7
	3519	Internal combustion engines	3.3
	3522	Farm machinery (except tractors)	3.1
	3561	Pumps and compressors	2.9
	3585	Refrigeration machinery	2.5
	3614	Motors and generators	2.2
			<hr/> 76.1
Aluminum	3721	Aircraft	11.3
	3442	Metal doors, sash, and trim	13.3
	3497	Metal foil	10.5
	3463	Metal stampings	10.3
	3444	Sheet metal work	8.0
	3585	Refrigeration machinery	5.5
	3729	Aircraft equipment, n.e.c.	5.4
			<hr/> 64.3
Insulated wire (Cu)	3641	Engine electrical equipment	20.4
	3614	Motors and generators	19.7
	3615	Transformers	16.1
	3661	Radios and related products	10.3
	3664	Telephone and telegraph equipment	2.6
			<hr/> 69.1
Other copper	3717	Motor vehicles and parts	27.3
	3614	Motors and generators	11.6
	3431	Plumbing fixtures and fittings	11.1
	3585	Refrigeration machinery	10.5
	3463	Metal stampings	8.9
			<hr/> 69.4

Source: United States Census of Manufactures (1954), Vo. I, Table X.

ANNEX II

MAJOR END-USES OF BASIC CHEMICALS

Table 1: Relationship between natural resources and chemical products

Natural resource	Chemical	Final product (application)
Coal	Benzene	Dyestuffs, pesticides, pharmaceuticals
	Toluene	Explosives
	Xylene	Synthetic fibre
Natural gas	Methanol	Synthetic resin
	Ammonia	Fertilizers
Petroleum	Ethylene	Synthetic resin
	Propylene	Synthetic fibre
	Butylene	Synthetic rubber
	Benzene	Dyestuffs, pesticides, pharmaceuticals
	Toluene	
	Xylene	
Salt	Soda ash	Glass
	Caustic soda	Chemical fibre, pulp and paper, alumina
	Chlorine	Synthetic resin, pesticides, solvents
Pyrite	Sulphuric acid	Fertilizer, dyestuffs, pharmaceuticals
Sulphur		Explosives, chemical fibre
Limestone	Calcium carbide	Synthetic resin, fertilizer
Rock phosphate	Superphosphate	Fertilizers
	phosphoric acid	Detergent
Ilmenite	Titanium dioxide	Paint printing ink, chemical fibre, plastics
Fluorspar	Fluorocarbons	Aerosols
Bauxite	Alumina	Aluminium products

Table 2: End-use pattern of soda ash
 (percentage)

End-use	United States		China (Taiwan)		India		Japan		In- donesia	Rep. of Korea	World
	1959	1965	1961	1964	1961	1966	1961	1965	1956	1961	
Glass	38.1	43.5	45.5	50.0	28.8	28.9	28.9	48.0	53.0	31.0	35-40
Chemicals <u>a/</u>	34.3	26.0	9.2	9.0	20.1	16.7	21.6	24.3	-	8.6	25-30
Pulp and paper	7.1	8.5	22.3	18.2	2.7	3.3	2.8	2.8	4.1	-	20-30
Soap, detergent	5.4	6.2	11.5	11.4	28.7	29.6	2.9	1.4	8.5	1.7	20
Lime-soda caustic	-	-	-	-	11.0	14.2	27.7	7.0	-	-	
Metal, ore	3.3	4.1	-	-	-	-	1.9	2.3	-	22.3	
Seasoning	-	-	-	-	-	-	6.5	5.2	-	10.6	
Textiles	-	-	-	-	4.8	3.3	0.9	0.9	-	5.2	
Water treatment	3.2	3.2	-	-	-	-	-	-	-	-	
Miscellaneous	5.4	5.4	11.5	11.4	3.9	4.0	3.8	4.6	34.4	20.6	
Export	2.7	3.1	0	0	0	0	3.0	3.5	0	0	

Source: Oil, Paint and Drug Reporter, October 1962.

Development Prospects of Basic Chemical and Allied Industries in Asia and the Far East, E/CN.11/635.

a/ Chemical = Sodium tripolyphosphate,
 Sodium silicate,
 Sodium bicarbonate,
 Sodium chromate, etc.

Table 3: End-use pattern for caustic soda
 (percentage)

	<u>United States</u>		<u>Aus-</u>	<u>China</u>		<u>India</u>		<u>Japan</u>		<u>Rep. of Korea</u>		<u>In-</u>
	1963	1970	1963	1961	1966	1961	1965	1960	1965	1961	1964	1965
Chemicals <u>a/</u>	43.1	43.7	18	9.22	8.30	2.6	4.4	27	35	1.5	1.2	0
Pulp and paper	9.8	11.6	12	40.26	30.00	18.9	20.6	13	11	15.2	21.2	4.9
Rayon	9.3	7.5	7	9.75	17.70	29.0	30.3	34	26	0	14.4	0
Aluminium	5.5	7.1	15	5.26	7.17	2.2	7.3	3	4	0	0	0
Textiles	5.6	4.8	2	9.34	11.32	23.9	14.7	-	-	11.4	8.6	-
Petroleum	5.1	5.2	6	0.91	9.85	1.7	1.5	-	-	0	0	-
Soap, detergent	4.7	4.0	18	11.88	6.79	17.6	14.7	5	4	37.9	28.8	51.8
Cellophane	3.5	2.8	0	-	-	-	-	-	-	0	0	0
Export	3.6	4.5	-	3.44	2.83	-	-	3	-	0	0	0
Miscellaneous	9.8	8.8	22	9.94	6.04	4.1	6.5	15	20	34.0	25.8	33.3

Source: Oil, Paint and Drug Reporter, Oct. 1963. Document E/CN.11/635.

a/ Chemicals = Phenol, soda ash, dyestuffs,

Sodium hypochlorite,

Sodium phosphates,

Sodium glutamate, etc.

Table 4: Processes used for caustic soda production
 (percentage)

(1)

	<u>United States</u>		<u>West Germany</u>		<u>Japan</u>		<u>India</u>		<u>World</u>	
	1950	1960	1950	1960	1950	1964	1960	1965	1950	1959
Lime-soda	20.1	4.4	28.7	11.4	44.6	3.5	21.3	11.5	49.7	22
Electrolytic	79.9	95.6	71.3	88.6	55.4	96.5	78.2	88.5	50.3	78

(2) Electrolytic processes

Process	<u>United States</u>		<u>China(Taiwan)</u>	<u>Japan</u>	<u>Pakistan</u>
	1963	1965	1965	1964	1964
Mercury	30	40	35.5	85.5	82.3
Diaphragm	70	60	65.5	14.5	17.9

Source: Oil, Paint and Drug Reporter, 14 October 1963.
 Chemische Industrie, March 1961. Document E/CN.11/635.

Table 5: Chlorine consumption in the United States of America, 1968
 (tons)

Use	Chlorine quantity
Organic Chemicals	
Ethylene chlorhydrin	485,000
Carbon tetrachloride	253,000
Ethylene dichloride	212,000
Chlorobenzenes (except BHC)	171,600
Trichloroethylene	170,000
Perchloroethylene	150,000
Propylene chlorhydrin	115,000
Chloral	89,750
Methylene chloride	72,700
Allyl chloride	66,000
Chlorinated camphene	35,000
Chlorinated cyclopentadiene	15,850
Misc.chlorinated insecticides	6,000
Ethyl chloride	55,000
Chloroform	45,600
Chlorinated phenols	44,900
Vinylidene chloride	44,000
Monochloro-acetic acid	20,800
Chlorinated paraffins	18,000
1,4 - dichlorobutane	16,000
Methyl chloride	11,700
BHC (benzene hexachloride)	11,500
Chlorinated toluene deriv.	9,700
Chlorinated diphenyls	9,000
Amyl chloride	8,090
Chlorofluoro carbons	3,050
Chlorinated rubber	2,800
Fungicides	2,400
Herbicides	1,000
Chlorosulphonated polyethylene	700
Chlorinated naphthalene	500
Inorganic chemicals	
Hydrochloric acid	167,000
Methyl chlorides	103,800
Hydrochlorites	67,600
Bromine	47,500
Phosphorous chlorides	23,200
Sulphur chlorides	6,400
Phosgene	2,250
Cyanuric chloride	600
Elemental chlorine	
Pulp and paper bleaching	554,400
Water treatment	125,000
Textile bleaching	16,000
Total consumption	3,260,600

Table 6: Chlorine consumption in Japan, 1955-1963
 (Metric tons)

Use	1955	1960	1961	1962	1963
Paper and pulp	63,630	123,098	123,175	122,256	129,500
Polyvinyl chloride	29,713	164,582	189,963	190,975	225,900
Food seasoning	42,995	60,796	66,264	65,172	64,400
Chlorinated solvents	10,353	37,128	54,859	66,262	81,400
Chloromethane	1,465	2,592	10,502	11,396	14,600
Titanium metal	8,965	6,864	6,098	3,797	3,500
Insecticides	11,508	17,092	17,839	19,117	21,500
Pentachlorophenol	454	5,911	17,466	26,169	24,400
Propylene oxide der.	0	6,441	14,652	27,031	44,500
Chlorine dioxide	0	9,211	13,182	14,293	16,300
Sodium chlorite	2,095	4,350	6,892	9,818	15,800
Inorganic chemicals	11,521	23,707	28,286	29,479	37,800
Bromine and dichloroethane	1,231	2,003	4,697	4,098	2,100
Dyes and intermediates	17,925	28,607	35,377	38,478	41,200
Toluene Diisocyanate	0	31	569	3,682	14,500
Plasticizers	862	4,969	6,941	7,284	3,400
Diphenyl chloride	451	1,903	3,085	2,397	3,200
Monochloro-acetic acid	2,252	6,033	7,423	6,072	7,200
Chloroprene	0	0	0	861	4,400
Others	55,357	105,561	118,437	120,171	134,100
Total	265,785	616,886	725,737	768,708	889,700

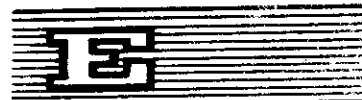
Source: Chemical Industries, Present and Future, March 1964, Tokyo.

Table 7: End-use pattern of sulphuric acid, 1961
(percentage)

	United States	West Germany	China (Taiwan)	India	Japan	
Fertilizers	26	37	35	58	59	
Viscose rayon	5	12	3	17	12	
Metallurgical	9	2	-	7	4	
Inorganic chemicals	37	-	-	7	-	
Petroleum	10	1	2	2	2	
Miscellaneous	13	48	10	9	23	18
Recent growth rate	2	1	6	10	5	4

Source: Document E/CM.11/635.

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ECONOMIC COMMISSION FOR AFRICA

First meeting of the Technical
Preparatory Committee of the Whole

Addis Ababa, 3-8 April 1980

ECONOMIC COMMISSION FOR AFRICA

Fifteenth session/sixth meeting of
the Conference of Ministers

Addis Ababa, 9-12 April 1980

NOTE ON THE REGIONAL PROGRAMME FOR AFRICA

1982-1986

Introduction

1. The UNDP second programme cycle will terminate at the end of 1981. The Regional Programme for Africa for the years 1977-1981 was approved by the UNDP Governing Council after thorough and extensive consultations not only with Governments of the region, through the UNDP Resident Representatives in Africa, but also with specialized agencies and other organs of the United Nations system as well as regional and subregional intergovernmental organizations of the Africa region, notably the Organization of African Unity (OAU) and the African Development Bank (ADB). In all, 40 intergovernmental organizations in addition to the Governments of the region and specialized agencies of the United Nations system were invited to submit their proposals to UNDP for the second regional programme.

2. At its 34th session, the General Assembly adopted a resolution 34/206 entitled "Implementation of section IV of the Annex to the General Assembly resolution 32/197 on the restructuring of the economic and social sectors of the United Nations system". This resolution requests the UNDP Administrator to "prepare, in cooperation with the executive secretaries of regional commissions, proposals for enhancing the collective involvement of the countries in each region in the identification and the initiation of regional projects and activities as well as in the determination of priorities for inter-country programmes". In the spirit of this resolution, this Note is being submitted to the ECA Conference of Ministers in order to seek the collective views of African Governments on the preparation of the Regional Programme for 1982-1986, especially on the strategy to be adopted and priority actions to be foreseen in this Programme.

II. Preparation of the 1982-1986 Regional Programme Document

3. The preliminary views of UNDP on both the strategy and on priority activities to be taken into consideration during the 1982-1986 programming cycle were presented to the UNDP Regional Meeting of Resident Representatives in Africa, held in Mbabane (Swaziland) from 7 to 17 January 1980 and attended by representatives from organizations of the United Nations system as well as by the OAU Secretary-General and the ECA Executive Secretary. A consensus was reached during this meeting on these preliminary views as well as on a work-plan for the preparation of the Regional Programme.

4. This work-plan, timed to take account of the dates of the forthcoming ECA Conference of Ministers and the UNDP Governing Council meeting, must permit appropriate consultations and elaboration of the final Regional Programme document in time for submission to the UNDP Governing Council in June 1981. The work-plan is presented as follows :

February 1980

- Receipt at UNDP Headquarters from the United Nations Specialized Agencies of any particular views on priority activities as proposed at the Mbabane meeting;

April 1980

- Submission of this Note to the ECA Conference of Ministers in order to seek the collective views of African Ministers;

After April 1980

- Consultations with African Governments, organizations of the United Nations system as well as with intergovernmental organizations in Africa;
- Preparation of the draft regional programme document;

April 1981

- Presentation of the draft Regional Programme to the ECA Conference of Ministers for comments;

June 1981

- Submission of the draft Regional Programme to the UNDP Governing Council for approval.

5. Thus, after having obtained the views of the current ECA Conference of Ministers and after having consulted the individual African Governments of the region, African intergovernmental organizations and organizations of the United Nations system, UNDP will prepare a draft document for the Regional Programme 1982-1986. This draft document will be submitted at the subsequent ECA Conference of Ministers in 1981 for comments, before being finalized and submitted for approval to the UNDP Governing Council at its June 1981 session or at such other session as the Governing Council may deem appropriate.

III. Strategy and priority activities of the Regional Programme

6. Since 1975-1976 when the second regional programme was prepared, important recommendations have been adopted at a series of inter-African and international meetings on development problems in Africa. Among these meetings, one could mention the Conference of Buenos Aires on Technical Co-operation among Developing Countries, the Conference of Mar del Plata on Water Resources Development, the World Conference on Agrarian Reform and Rural Development, the Vienna Conference on Science and Technology for Development, the Monrovia Symposium on the Future Development Prospects of Africa towards the Year 2000 (the report of which was adopted by the OAU Heads of State in July 1979), the ECA Conference of Ministers held in Rabat in 1979 and the Conference of African Ministers of Planning and Transport and Communications on the United Nations Transport and Communications Decade in Africa.

7. A certain number of development constraints in Africa were clearly identified on the occasion or in the course of these meetings, in particular those sponsored by the OAU and the ECA. Consequently, in order to respond to the African Governments' desires, there is no doubt that all international assistance, particularly that the UNDP Regional Programme, should be oriented and formulated so as to contribute to the solution of development problems related to these constraints.

8. The strategy to be adopted for the Regional Programme must take into account:

- (a) the proposed strategy for the third development decade of the United Nations;
- (b) the decisions already taken in the framework of the OAU summit meetings;
- (c) recommendations adopted at the afore-mentioned international and regional conferences.

Without going into details, we can note that the key elements of this strategy point out the necessity of greater national and collective autonomy of African States, the development of self-sufficiency in food production, the introduction of innovations in the development process, a greater command of tools required to accelerate development (for example, promotion of science and technology for development as well as implementation of technical co-operation among developing countries, etc.), the build-up of infrastructure, particularly in transport and communications, without which the development efforts risk being fruitless.

9. Most of the priority activities resulting from this global strategy, received due attention from UNDP and influenced its programme of assistance in the region during the 1977-1981 period. For the 1982-1986 regional programme, UNDP's objectives should be to put particular emphasis on those priority activities which may not have received the attention that they deserve.

10. The priority activities to be considered during the 1982-1986 programming cycle have been identified by UNDP as follows :

- (a) subregional and regional co-operation including assistance to African intergovernmental organizations, river and lake basin development schemes in the region and promotion of technical co-operation among African countries;

- (b) promotion of food self-sufficiency, through the implementation of the Regional Food Plan for Africa;
- (c) implementation of the Programme of the United Nations Decade for Transport and Communications in Africa;
- (d) programme for desertification control and protection of the African environment;
- (e) promotion of science and technology for development;
- (f) development of human resources through appropriate programmes in vocational training, employment promotion and major disease control;
- (g) development planning and management;
- (h) special development programmes for the least developed countries, land-locked countries and island countries.

11. It is not possible at this stage to allocate specific percentages of resources to the different activities outlined above. Such allocations will depend on the extent to which ongoing activities will have to continue. The number of new projects that we can accommodate will also depend on the importance of continuing projects as well as on the size of available global resources.

IV. Conclusion

12. The views of the current ECA Conference of Ministers on UNDP's preliminary intentions as presented above will be of paramount importance for the elaboration of the draft regional programme for 1982-1986.

13. While it is premature at this juncture to give a precise indication of the financial resources which will be allocated to the Regional Programme for Africa during this period, it should be noted that the expenditures of the ongoing Regional Programme will exceed allotted resources. Thus, the 1982-1986 programme must be selective and must concentrate on central issues. A preliminary indication by this Conference of Ministers on priorities to be given the different proposed activities will be most useful in this regard.