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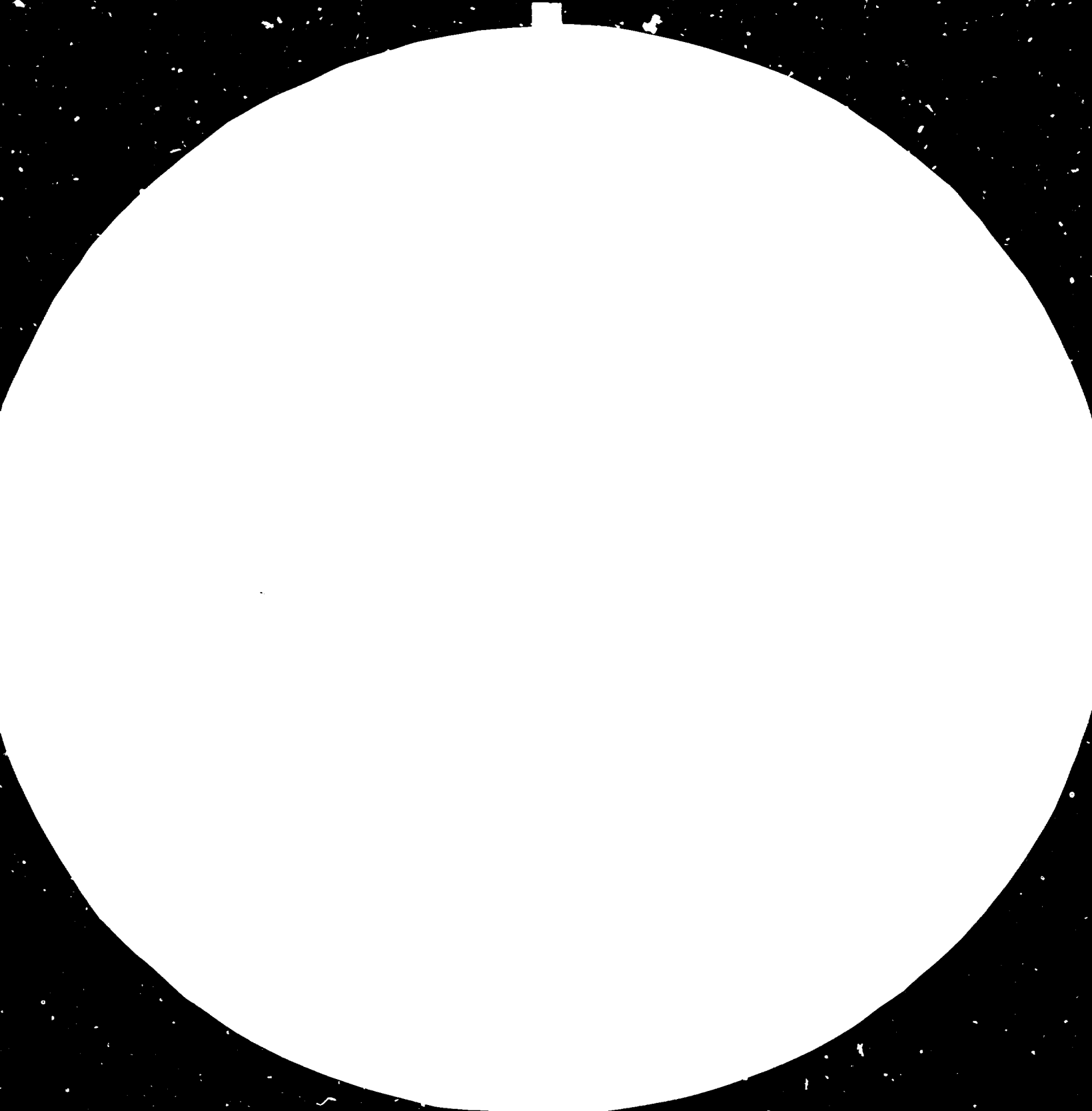

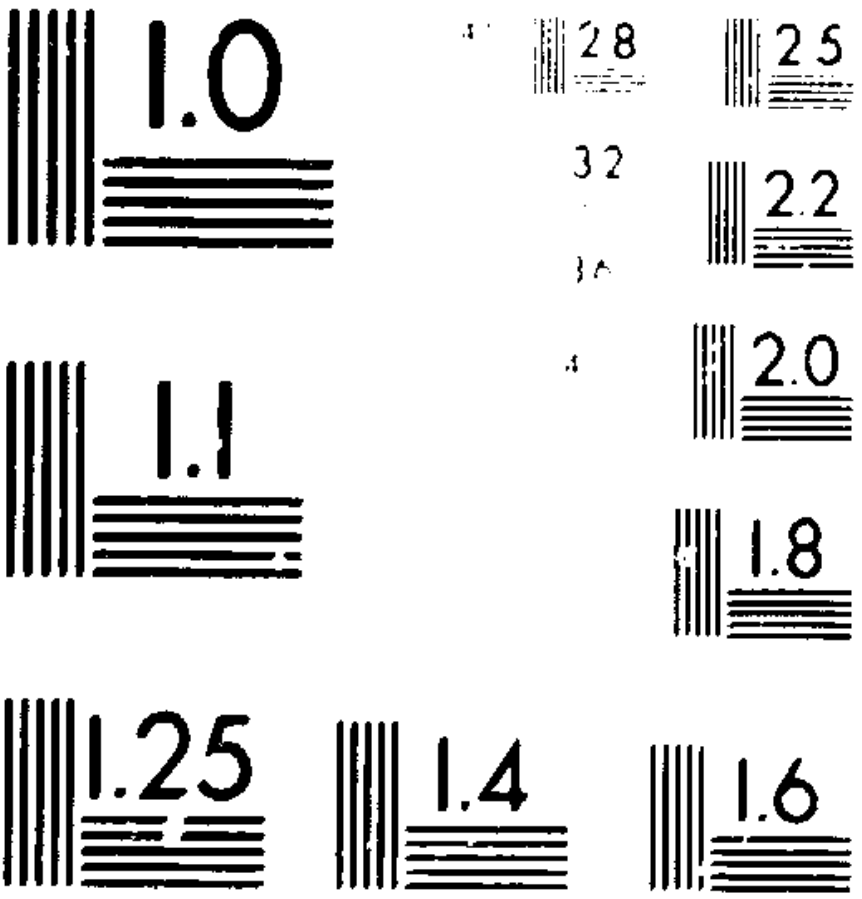

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Sub-regional Meeting on the Promotion of Intra-African Industrial Co-operation within the Framework of the Industrial Development Decade for Africa*

Addis Ababa, Ethiopia, 22-26 November 1983

INITIAL INTEGRATED INDUSTRIAL PROMOTION PROGRAMME FOR THE EASTERN AND SOUTHERN AFRICAN SUBREGION**

Prepared by

the secretariats of ECA, OAU and UNIDO

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* Organized jointly by ECA, OAU and UNIDO in co-operation with the Southern African Development Coordination Conference (SADCC) and the Preferential Trade Area for Eastern and Southern African States (PTA)

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INTRODUCTION

1. This paper, which has been prepared in connexion with the ECA/OAU/UNIDO ad hoc expert group meeting on intra-African industrial co-operation, comprises five chapters. It is designed to initiate a continuing process of discussion among Governments in the Eastern and Southern African subregion on priority areas and projects for multinational co-operation. The countries covered by this subregion are: Angola, Botswana, Burundi, Comoros, Djibouti, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Seychelles, Somalia, Swaziland, Tanzania, Uganda, Zaïre, Zambia and Zimbabwe. Certain countries outside the subregion, such as Burundi, Rwanda and Zaïre, have been included in view of their close connection with the subregion, although no projects from those countries have been included in this initial industrial promotion programme. The first chapter summarizes the economic situation in Africa and outlines the objectives of the Industrial Development Decade for Africa. The second chapter describes the industrial situation in the subregion, indicating the need for the reorientation of industrialization policies and strategies as well as the major institutional arrangements for economic co-operation in the subregion.

2. Proceeding from a definition of core industries, the third chapter identifies the strategic industrial subsectors in the subregion and describes those areas and services that support industrial development. The fourth chapter presents the integrated industrial promotion programme for the subregion. It introduces a series of core projects in priority subsectors and gives details of support projects supplementing the process of integration. Project profiles are used to provide data relating to raw materials, infrastructure, markets, demand and investment requirements. The fifth chapter proposes a plan for the implementation of the integrated programme. It is anticipated that the meeting will make recommendations in respect of both the integrated programme and the plan for its implementation.

I. ECONOMIC STATE OF THE REGION AND THE INDUSTRIAL DEVELOPMENT DECADE FOR AFRICA

The current economic situation

3. As pointed out in the preamble to the Lagos Plan of Action, Africa is unable to point to any significant growth rate or satisfactory index of general well-being in the past 20 years. Whatever socio-economic indicator is used - be it per capita income, the share of primary activities in total production, school enrolment ratios, access to safe water, mortality or health - most African countries can be seen to be lagging behind other developing countries. The number of African countries listed as "least developed" by the United Nations recently increased to 26 out of a world total of 36, while 20 out of 33 countries classified by the World Bank as "low-income" developing countries are located in Africa. The share of manufacturing in the region's GDP is still appreciably lower than the comparable average for all other

developing countries, while agricultural performance has dropped badly, bearing little comparison with the previous decade or with performance in other developing regions. Given the close link between agriculture and industry, poor performance in the agricultural sector has devolved negatively upon manufacturing.

4. These economic difficulties are compounded by the persistent balance of payment deficits faced by most countries in the region: the external debt of the region increased five-fold during the past decade while external reserves dropped to critically low levels. The expansion of manufacturing output in the region is also hampered by sluggish domestic markets, inadequate raw material supplies for key industries, the absence of skilled and experienced industrial manpower, and shortage of imported materials, spare parts and machinery. The situation is further aggravated by major difficulties stemming from the energy problems facing the region despite its substantial energy potential. The inadequacy of the region's transport and communications infrastructure coupled with the inefficiency of the services sector are also recognized as major obstacles to the socio-economic development of the region.[1/]

5. The generally stagnant nature of the domestic economies has inevitably depressed industrial investment and, in turn, future expansion. The fact that the typical African economy is still at an early stage of development means that certain 'structural' features come into play and condition the environment in which industry operates. Seen from a positive angle, the fact that these economies start from a small industrial base offers potential scope for industrialization, as does the rich natural resource endowment of many African countries. On the negative side, however, the small populations and low levels of income in most African countries mean that existing domestic markets for consumer goods are limited - far too small to permit the attainment of maximum economies of scale in many branches of industry.

6. With the effects of unfulfilled promises of global development strategies being more sharply felt than in other continents of the world, Africa took steps towards the basic restructuring of the economic base of the continent. Despite the varying structure of industrial ownership, the main objective of economic development in most African countries since independence has been to achieve a sustained increase in the standard of living for an increasing proportion of the population. In order to achieve this, the composition of output must shift from primary production to secondary activities, i.e. to industrialize. To this long-term strategy of industrialization can be added the shorter term goals of an accelerated growth in output and the creation of employment opportunities so as to reduce unemployment or under-employment and contribute to the elimination of mass poverty.

1/ For further details see Economic Commission for Africa, ECA and Africa's Development 1983-2008 (Addis Ababa, April 1983).

Lagos Plan of Action and the Industrial Development Decade for Africa

7. In more recent years, two new concepts - self-reliance and self-sustainment - have been incorporated in the long-term economic development strategies described above. Introduced into the Monrovia Declaration of Commitment of the Heads of State and Government of the OAU in July 1979, they were re-affirmed in the Lagos Plan of Action and the Final Act of Lagos in April 1980[2/] and have since become the key features of the Industrial Development Decade for Africa. In the Lagos Plan of Action, a major role is accorded to industry reflecting the commitment of the region to change the economic structure of Africa and to satisfy the basic needs of its peoples by exploiting local natural resources and establishing a base for the development of other economic sectors.

8. Quantitative and qualitative targets are also set in the Lagos Plan of Action for industrial integration at the subregional and regional level. A minimum share of at least 1.4 per cent in world industrial production is to be achieved by the year 1990, while African countries will do everything in their power to achieve self-sufficiency in the food, building materials, clothing and energy sectors. Furthermore, during the first half of the Decade, the countries in the region, individually and collectively, will endeavour to lay the foundation for phased development of the following basic industries essential to the achievement of self-reliance: food and agro-industries, mechanical industries, metallurgical industries, electrical and electronic industries, chemical industries, forestry industries and energy industry. Moreover, in the Final Act of Lagos the industrial sector was selected as one of the priority sectors for subregional and regional integration during the current decade.

9. Likewise derived from the Monrovia Declaration and incorporated in the Lagos Plan of Action, the proclamation of the Industrial Development Decade for Africa by the General Assembly of the United Nations is seen as a means of focusing greater attention and evoking greater political commitment and financial and technical support at the national, regional and international level for the industrialization of Africa. It also instigated the preparation of a programme for the Decade which was adopted by the African Ministers of Industry at their Sixth Conference in November 1981.[3/]

2/ Organization of African Unity, Lagos Plan of Action for the Economic Development of Africa 1980-2000 (Geneva, 1981)

3/ ECA/OAU/UNIDO, A Programme for the Industrial Development Decade for Africa, ID/287 (United Nations, New York, 1982).

10. The programme identifies the key requirements at both the national and subregional level. The essence of the programme lies in the fact that the stimulation of the economic growth of Africa comes, first and foremost, from within. It not only requires the effective exploitation, processing and utilization of domestic natural resources at the national and multinational level, but it is also based on an integrated development strategy linking industry with agriculture, energy, human and physical infrastructure, trade and other sectors.

11. The programme calls for a firm rejection of the isolated piecemeal planning of the past and a clear shift away from over-preoccupation with foreign exchange problems external to the region. The new approach is predicated upon a decisive move towards the integrated development of the human resources, institutional mechanisms and technological capabilities required to develop and utilize effectively the natural resources and material endowments of the region, expanding local markets, enlarging the range of complementarities and strengthening links between industry and other sectors of the economy.

12. The programme also emphasizes the importance of national, subregional and regional markets for the supply of such factor inputs as raw materials and machinery, technical as well as managerial, and project planning skills. It maps out actions for both the preparatory (1982-84) and implementation (1985-1990) phases at the national, subregional, regional and global level. Each country is urged to adopt a national strategy based on a set of carefully selected strategic "core" industries appropriate to its resources and raw materials (in particular, energy), complemented by strategic support projects. Although the key to the success of the Decade will depend, in the final analysis, on steps taken at the national level, intra-African co-operation is essential to the attainment of self-reliant and self-sustained development. In the programme for the Decade, emphasis is placed on the need to:

(a) Prepare sectoral policies and programmes within strategic industrial branches.

(b) Identify major industrial projects of interest to the countries in the subregion or region.

(c) Strengthen or establish institutions in the subregion or region aimed at promoting industrial integration.

13. African countries will thus have to strengthen or establish regional institutional arrangements for the preparation, promotion, implementation and monitoring of multinational industrial projects. They will also have to ensure complementarity of the raw materials and factor inputs needed for industrial development and take steps to facilitate intra-African trade in industrial raw materials and finished products while introducing suitable

mechanisms for promoting and financing multinational industrial projects. Carefully planned, this strategy of collective self-reliant and self-sustained development should lead to a mutually reinforcing system of production in the region in keeping with the objectives of the Lagos Plan of Action and the Final Act of Lagos.

II. INDUSTRIALIZATION IN THE EASTERN AND SOUTHERN AFRICAN SUBREGION

14. The population of the 18 countries in the subregion totalled 133.5 million (or 31.5 per cent of the total population of the OAU Member States) in 1980 with forecasts of some 180 million by 1990 and 240 million by the end of the century. Per capita incomes in the same year ranged between $130 and $1,060 per annum, the highest per capita incomes being in the island countries with populations of less than 1 million.

15. The countries' economies are predominantly agricultural, involving the production of coffee, sisal, meat, hides, sugar and timber and employing some 80 per cent of the labour force. Some countries rely on the export of one major cash crop, while others have a wider range. Still others, though predominantly agricultural, depend heavily on the export of minerals such as diamonds, gold and copper for foreign exchange revenue. Despite this abundance of agricultural and mineral resources, little progress has been made towards their local processing on an industrial scale. The countries depend on external sources for most factor inputs such as capital goods, intermediate goods, technology, finance and services. In summary, the subregion's economic vulnerability stems from its dependence not only on the export of a limited number of primary commodities whose prices are determined externally, but also on the import of increasingly costly industrial factor inputs.

Industrial structure

16. In general, the major thrust in industrialization has been limited to the production of consumer goods to meet demand formerly satisfied by imported goods (import substitution), although a few export-oriented industries have been established. The industrial sector is still small and largely agro-based. Though once viewed as the major instrument of economic transformation and economic independence, it has failed to grow sufficiently, remaining structurally unchanged and dominated by the manufacture of simple consumer goods. Based mainly on small production units, for the most part import-based with poor local linkages, industrial production has been geared to the demands of a comparatively small sector of the urban population: it has failed to integrate effectively the agricultural sector nor has any effective linkage been established with other sectors. Furthermore, the small production units themselves

are isolated and since they lack linkage with the major economic sectors, their impact on development is minimal.

17. As the manufacturing industry in the subregion is closely related to agriculture and mining which are dependent on external supplies, poor performance of the agricultural and mining sectors and the balance of payments difficulties experienced by most of the countries in the subregion combine to depress industrial output. Growth of manufacturing in the subregion dropped to 1.5 per cent in 1981 as against 2.2 per cent in 1980, while the growth rate for Africa as a whole dropped to 4 per cent in 1981, compared to 5.9 per cent in 1980. In addition to the poor agricultural performance and the unsuccessful development of mineral resources, the other constraints upon industry in the subregion are:

(a) Lack of critical raw material inputs for national industries working within limited domestic markets;

(b) Lack of foreign exchange restricting the procurement of external factor inputs, such as spare parts, raw materials, intermediate products, technology, know-how and services;

(c) Lack of manpower capable of handling complete project cycles, including project planning, implementation and operation, or negotiating the procurement of technology and finance;

(d) Lack of domestic financial resources and limited foreign investment in industry;

(e) Lack of infrastructural facilities, including energy;

(f) Difficulties in introducing operational measures supporting the political will to pool resources and establish basic industries at the national and subregional level.

18. The manufacturing industry in the subregion represents only a small part of total output : the overall share of manufacturing in the GDP of the subregion was around 10 per cent in 1980, without any clear upward trend. The spread of industry across the subregion, however, varied widely: Angola (2.6 per cent), Lesotho (4.7 per cent), Botswana (5.6 per cent), Comoros (5.4 per cent), Djibouti (8.8 per cent) Burundi (10.9 per cent), Malawi (15.2 per cent), Mauritius (15.5 per cent), Uganda (4.2 per cent), Zaire (2.5 per cent), Mozambique (8.8 per cent) Seychelles (6.6 per cent), Somalia (8.8 per cent), United Republic of Tanzania (9.0 per cent), Kenya (13.3 per cent), Madagascar (10.1 per cent), Rwanda (12.7 per cent), Swaziland (24.3 per cent), Zambia (15.8 per cent) and Zimbabwe (26.5 per cent).

19. The share of light industries in manufacturing output varies between 56 per cent in Zimbabwe and 100 per cent in Swaziland, while the share of

agricultural-based and consumer-oriented industries varies with the level of industrialization. In the case of Zimbabwe, for example, the high level of industrialization is due to the prominent role played by the chemical, petroleum and metallurgical industries, which accounted for about 40 per cent of gross manufacturing output in 1979.

20. The almost inevitable dependence on external factor inputs common to countries at an early stage of industrialization bears critical consequences for the countries of the subregion. In Tanzania, for example, failure to generate additional export revenue and thus pay for industrial inputs is one of the main reasons for the under-utilization of installed industrial capacities and production cutbacks. This is evidenced by the marked decline in that country's manufacturing industry in terms of value-added, a drop of 28.2 per cent in 1980-1981 and 16.3 per cent in 1979-1980.

21. Exports of manufactures from the subregion, excluding petroleum products, are very limited and mainly geared towards traditional markets outside Africa where they face fierce competition with exports from Asia and Latin America. Recently, some countries in the subregion have placed emphasis on the export of manufactured goods, as exemplified by Mauritius with its export processing zone. However, serious difficulties have arisen following the trade barriers raised by industrialized countries against imports of manufactured goods from developing countries.

Industrialization, strategies and policies in the subregion

22. Over the years, industrialization policies in the subregion have been limited to the promotion of import substitution and the manufacture of light consumer goods, for which the raw materials often have to be imported. The establishment of such industries has failed to support the development of the agricultural sector nor has it created any effective linkages between the different sectors of the economy. Instead, it has led to a more fragile national economy highly susceptible to fluctuations in the prices of foreign raw materials and/or finished products.

23. These policies have merely prolonged the dependence of the subregion on external sources, while the creation of capital-intensive import-substitution industries (with a high unit cost of investment and no relationship to the factor endowments of the subregion) has distorted cost structures. In many instances domestic production costs are higher in terms of foreign exchange than the cost of importing finished products. Furthermore, the economic situation of the subregion has deteriorated following the outflow of capital from the subregion to the developed countries in return for commodity and technology imports, repatriation of dividends and consultancy fees.

Industrial co-operation at the subregional level

24. The current economic situation calls for fundamental structural change and a rejection of the traditional fragmented approach to planning adopted in the past, which was dominated by import substitution strategies. Industrial co-operation at the subregional level would assist in overcoming these economic constraints upon industrialization that stem from limited markets and financial resources, and the fact that single countries cannot dispose of all the technological and manpower capabilities needed to establish certain industries. Since most of the countries in the subregion have neither all the raw material inputs needed to establish certain industries nor the markets to absorb the expected output, industrial co-operation would permit these countries to deploy their resources to the maximum possible advantage.

25. Similarly, industrial co-operation would also ensure raw material production in the subregion protected access to the larger subregional market, thus making for the optimal utilization of the agricultural, mineral and other natural resources and installed industrial capacities in the individual countries. It would also lead to subregional economic integration and the achievement of an increasing measure of self-sufficient and self-sustained development, key features of the programme for the Decade.

26. The steps to be taken by each country, ranging from the identification of core projects at the national and subregional level to the detailed assessment of financial requirements, are spelt out in detail in the programme for the Decade.[4/]

Institutional arrangements in the subregion

27. Of the multilateral and bilateral industrial co-operation mechanisms in the subregion, the two most important multilateral economic co-operation bodies are the Southern African Development Co-ordination Conference (SADCC) and the Preferential Trade Area for Eastern and Southern African States (PTA).

Southern African Development Co-ordination Conference.[5/]

28. Established in July 1981 with the main objectives of reducing dependence on South Africa and accelerating economic development, SADCC set up an industrial co-ordination unit to speed up the process of industrial co-operation and integration among the SADCC member states. In a regional plan

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4/ Ibid, Chapter III, pages 165-190

5/ The Member States are Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe.

of industrial co-operation finalized at a meeting of the SADCC Industry Sub-Committee in Dar-es-Salaam in September 1981, the main thrust lay on developing industries to meet the basic needs of the population in the areas of food, clothing, housing, health, water supply, power, transport and education, while the development of basic industries such as fertilizers, pharmaceuticals, pesticides, iron and steel, capital goods and engineering industries also formed part thereof. Based on the declared priorities, 55 projects were identified for implementation and 33 projects were selected for further study.

The Preferential Trade Area for Eastern and Southern African States.[6/]

29. Established in 1982 as a first step towards the creation of a common market and eventually an economic community, the PTA aims at promoting co-operation and development in all fields of economic activity. In respect of industry, the treaty provides for the promotion of collective self-reliance, complementary industrial development, the expansion of trade in industrial products and the provision or related training facilities. In an annex to the treaty, priority areas for industrial co-operation are identified, the establishment of multinational industrial enterprises advocated and the mechanisms for the promotion of industrial development described. Attention is also drawn to the necessity of industrial manpower development, training, management and consultancy services and to the need for a common approach to industrial research and development, and the exchange of industrial information.

30. The creation of SADCC and the signing of the PTA Treaty, whose objectives are fully in line with those of the Lagos Plan of Action and the Final Act of Lagos, not only reflect political commitment on the part of the Member States, but they have also laid the foundation for the integrated development of the subregion.

III. STRATEGIC CORE INDUSTRIAL SUBSECTORS AND AREAS IN THE SUBREGION

Core industries

31. The concept of a core industry is basic to the programme for the Decade. It is used to describe those industries which contribute to the achievement of self-sufficiency in the priority sectors and the satisfaction of basic needs, as well as to the creation of a self-sustained and self-reliant industrial base.

32. A distinction is made between resource-based and engineering-based core industries. The former are defined as those industries utilizing domestically

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6/ In addition to the nine SADCC Member Countries, the following countries are contracting parties : Burundi, Comoros, Djibouti, Ethiopia, Kenya, Madagascar, Mauritius, Rwanda, Somalia and Uganda.

available resources which constitute a nucleus providing basic inputs into industry and other priority sectors and/or producing goods and services to meet basic needs. The latter are defined as the minimum set of engineering industries which enable a country or group of countries to meet its most basic engineering requirements and make optimum use of available resources for the servicing of both industry and other priority sectors (agriculture, transport and communications and energy) in terms of equipment, spare parts and components.

33. Resource-based industries depend primarily on the exploitation and the complete vertical integration of the subregion's natural resources, including energy. Once established, they have significant up- and down-stream linkage effects not only in respect of other industries, but also other sectors of the economy. The engineering-based core industries provide inputs to resource-based industries and all economic activities. Whereas their development depends primarily on their own reproductive ability, it also depends, ultimately, on the products of the metallurgical and chemical (resource-based) industries for the production of tools, implements and capital goods. Some engineering-based core industries require mass production of parts and components. This usually exceeds the scope of a single country's capabilities and markets, and industries of this kind are well suited to subcontracting arrangements and hence to multinational co-operation.

Identification of strategic industrial subsectors and project areas

34. An efficient and balanced economy that satisfies national development needs, within the context of self-sufficiency and self-sustainment in the subregion, requires an industrial structure that ensures: (i) the exploitation, processing, utilization and other general development of natural resources; (ii) linkages between the different industrial subsectors, specifically those producing capital goods, intermediates and consumer goods; and (iii) linkage between national industrial productive capacity and other priority sectors. An industrial structure of this kind at the subregional level implies the establishment of core industries, the cost and productive capacity of which might exceed national financial and absorptive capacities. In the Eastern and Southern African subregion, the areas of metallurgical, engineering, chemical , agro- and agro-based and building material industries have been identified as strategic core subsectors by the Council of Ministers of the Preferential Trade Area at their second meeting in Lusaka, December 1982, in the SADCC industrial programme, and at successive meetings of the Council of Ministers of the Lusaka-based Multinational Programming and Operational Centre (MULPOC). These strategic subsectors were selected on account of their potential contribution to increased productivity in those areas accorded

priority in the Lagos Plan of Action.[7/]

Agro- and agro-based industries

35. The development of agro and agro-based industries is critical to the subregion's attainment of self-sufficiency in food production, a priority among the priorities in the Lagos Plan of Action. Their development would greatly help to reduce post-harvest losses, increase food availability and contribute to food security in the subregion. The development of this subsector would also help to reduce imports, increase the "value-added" of raw materials, augment export revenues, raise employment levels, and improve incomes. It would also increase opportunities for investment in agriculture (farming and stock-breeding) and associated processing industries as well as stimulate the development of the allied subsectors, such as engineering and energy.

Metallurgical industry

36. The metallurgical industry provides linkage upstream to industries processing raw materials (mining, energy, water), and downstream to metal-working and engineering subsectors, and it is basic to the industrialization process. The manufacture of metal consumer goods and equipment in the subregion requires accelerated growth of the intermediate industries providing such inputs as iron and steel, aluminium and other metallurgical products which, in turn, depend on the exploitation of the vast mineral resources of the subregion, in particular iron ore, coal and copper. At present, most of these minerals are exported to the developed countries as raw or semi-finished products. The development of metallurgical industries in the subregion would make for the creation of vertically integrated industries from mining through refining to fabrication.

Engineering industries

37. The integrated development of engineering industries in the subregion, such as the metalworking, mechanical, electrical and electronic branches, will ensure the manufacture of basic equipment and machine tools, as well as intermediate and capital goods for use in food production and in such priority subsectors as the agro-based, building materials and metallurgical industries. Engineering industries, through such facilities as foundries, forging and heat-treatment shops, tool rooms, metal fabrication shops, machine shops and metal-coating shops, ensure the supply of spare parts, components and

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7/ For supplementary details of the major industrial subsectors and areas see ECA/OAU/UNIDO, A Programme for the Industrial Development Decade for Africa, ID/287 (United Nations, 1982), Chapter II, pages 71-164.

accessories to all sectors of the economy and provide repair and maintenance services to other sectors of the economy. With the establishment of engineering industries in the subregion, natural resources (basic metals from ores) would be increasingly utilized, capital formation accelerated, and the production of essential components, parts, machinery and equipment (that are currently imported) promoted. Through this effective form of import substitution, foreign exchange would be saved for other economic activities, while development of the subsector would also foster science and technology, including research and development activities.

Chemical industry

38. Chemical industries provide products directly related to the satisfaction of basic needs, primarily food and health. As mentioned earlier, the decline in agricultural production in the subregion caused an increasing amount of resources to be diverted to food imports (especially cereals), thereby reducing the amount of foreign exchange available for the import of industrial inputs required to assure full utilization of installed capacities. Production in the subregion of essential chemicals such as fertilizers, pesticides, pharmaceuticals and petrochemicals based on domestic resources (natural gas, coal, phosphate, potash, electric energy, etc.) would stimulate the development of agriculture, industry and other sectors, whose viability could not be assured using imported chemical inputs. In this connexion, it should be noted that the more advanced the stage of economic development, the more critical the role of the chemical industries and the higher the degree of linkage with other key subsectors and sectors.

Building materials industry

39. Promotion of the building materials industry in the subregion would contribute to the satisfaction of one of the population's basic needs - housing. It would also contribute to the exploitation of local natural resources and create a solid base for self-sustained industrialization in the subregion. In addition to meeting the requirements of the other sectors and subsectors, the building materials industry also provides inputs to the construction industry which, for its part, is not confined to the construction of dwellings, but to the creation of major infrastructural works, such as dams, irrigation schemes, airports and harbours. The construction industry literally paves the way for the establishment of conditions conducive to socio-economic development. This it achieves not only by providing improved physical facilities, but also by employing a large labour force, thereby generating additional purchasing power and widening the subregional market for the products and services of other subsectors and sectors of the economy.

Areas and services supporting industrial development

Agriculture

40. Although agriculture still remains the major source of employment, food, industrial raw materials and foreign exchange for the majority of countries in the subregion, its recent decline has had to be offset by substantial imports of food which increase the drain on limited foreign exchange reserves. Fluctuating performance in the agricultural sector is due to the vagaries of weather, in particular drought, locust raids, poor farming methods and problems related to the procurement and distribution of agricultural inputs. Additional difficulties in the subregion are the loss of livestock and encroaching desertification, culminating in the alarming fact that the subregion is unable to feed itself. Total cereal imports in 1980 were close to 3.4 million tons costing $850 million, 15 per cent of which went to Zambia, followed by Ethiopia, Kenya, Mozambique and Tanzania. This alarming increase in the import of food grains into the subregion is contrary to the concept of self-reliance contained in the Lagos Plan of Action.

41. Furthermore the neglect of agriculture has led to foreign exchange shortages and a reduced investment surplus so that many industries now face difficulties in obtaining imported spare parts or finding adequate financing for investment. This situation must be corrected so as to allow a transformation of the present negative linkages between industry and agriculture into positive ones and for industry and agriculture to grow together in harmony.

Energy

42. Most countries in the subregion depend on oil to meet their energy needs, particularly in the transportation and industrial sectors. Some, especially those party to SADCC, are endowed with other important sources of energy, in particular hydroelectric power (though still underexploited), as well as new and renewable sources of energy, the development of which will require major investments far beyond the scope of individual countries. Given this situation, it is foreseen that the subregion will continue to depend on oil as a major source of energy and it will need to intensify co-operation in the development and utilization of its energy resources.

Water

43. Some countries in the subregion are experiencing severe droughts known before only to the Sahelian zone, the effects of which are felt not only in Ethiopia and Somalia but also in Botswana, Lesotho, Malawi, Mozambique, Zambia and Zimbabwe. The economic and social outcome is disastrous, including a decline in agricultural production, mass exodus of rural populations to

overburdened urban areas, despite the abundance of water in the form of Lake Victoria, Lake Nyasa, Lake Tana, Lake Tanganyika, numerous rivers and two oceans. Properly exploited, these water resources could provide suitable zones for the development of industrial complexes as well as irrigation schemes.

Trade

44. Trade between the countries in the subregion accounts for only 7 per cent of total trade in the subregion. The factors contributing to this low volume of trade include:

(i) Shortage of convertible currencies;
(ii) Inadequacy of communications;
(iii) Paucity and/or inadequacy of information on markets and manufactures available in the subregion;
(iv) Presence of tariff and non-tariff barriers aimed at protecting local markets; and
(v) Absence of institutions facilitating trade such as Chambers of Commerce and international fairs.

However, these obstacles can be overcome and economic interdependence between the countries in the subregion enhanced through the vehicle of such economic groupings as SADCC and the PTA.

Transport and communications

45. The transport and communications system in the subregion will have to be improved significantly in order to support adequately the sub-regional industrial promotion programme. Whereas the railway system provides the most efficient and cheapest means of transport in the subregion, being relatively well developed (especially in the southern part of the subregion), it presents a number of problems related to the operation and extent of the system. These are caused by the deterioration of the permanent way, shortage of manpower, lack of locomotives and rolling stock, the absence of links between main lines, inefficiency and sabotage. The road network is limited and generally in poor condition. Air transport, though greatly improved, is still inadequate. With regard to telecommunications, the majority of countries in the subregion are not linked with each other and most traffic from and to the subregion has to be routed via Europe and some countries outside the subregion.

46. Both the transport and communications systems need to be improved and the dependence on external countries reduced. The costly contruction of harbour facilities makes the joint development and utilization of strategic sea ports essential, and similar subregional initiatives are called for with respect to improving the road network, air transport services and the railway system and its rolling stock. A microwave communications system for the subregion also

needs to be established. All these improvements are among the priority activities contained in the programme for the United Nations Transport and Communications Decade for Africa.

Human resources

47. The implementation of the integrated industrial promotion programme, similar to that of the programme for the Decade, hinges on the development of human resources at various levels in the industrialization process, ranging from policy-makers and industrial entrepreneurs through technologists and technicians to skilled labourer. The subregion disposes of adequate human resources; their training and skills, however, are wanting. University courses and industrial needs are mismatched as are vocational training opportunities, there being only an infinitesimal number of courses aligned to the requirements of the priority subsectors, support areas and services. This merely perpetuates reliance on expatriate technicians.

48. Although the educational infrastructure must be expanded, more immediate improvements could be obtained by rationalizing current programmes and strengthening their links with industry. New forms of education involving the rural population and women, new teaching/learning processes and, above all, recognition of science and technology as fundamental components in self-reliant and self-sustained industrialization: all these are essential to the effective development of human resources.

49. One problem that impinges heavily upon the southern countries in the subregion is the migration of labour to South Africa. Countless skilled and unskilled workers are lost to the subregion and the long-term effects of this exodus upon the economies of the countries are significant. Human labour, intelligence and creativity are the principal productive forces in any economy.

Mobilization of financial resources

50. Implementing the projects retained in the subregional programme will call for major investments - a basic factor determining the complete production process, the transfer and choice of technology, product selection, corporate form and, above all, the negotiating position vis-à-vis the outside world. In most countries in the subregion, this problem is aggravated by the oft precarious state of the country's balance of payments, public finances and budgets, as well as the low level of transactions, particularly in the agricultural sector. It would therefore be advisable for Governments and financial institutions in the subregion to mobilize internal and external financial resources and optimize their use through a variety of measures, including fiscal and other policies designed to stimulate savings and investment. These should be matched by such institutional arrangements as the strengthening or establishment of national or subregional industrial development banks.

Technology

51. Establishing the core industries identified in the programme will call for major technological inputs. Consequently, three major considerations apply. First, linking technology to the industrial development of the subregion can only be successful if relevant measures are adopted by Governments: thus, technology policy and planning become important elements. Secondly, the development of technological capabilities in each country is a prerequisite for the selection, acquisition, adaptation, absorption or development of industrial technology. This involves, inter alia, the establishment of technological institutions and the training of industrial and technological manpower. Thirdly, the appropriate choice of technology is of crucial importance, since an inappropriate choice will not only incur unnecessary major expenditures, but it will also distort the pattern of development.

52. It should be noted that most countries in the subregion do not dispose of the personnel, in quantity or quality, to evaluate, acquire, adapt, diffuse and absorb foreign technologies, which is a highly technical and sophisticated discipline. Only very few countries have taken steps to develop the institutional machinery needed to promote the development and upgrading of local technology or the acquisition and regulation of foreign technologies. In many countries, Government agencies and private enterprises have been left to their own devices or given biased advice when deciding whether to invest in technology. As a result, they have purchased defective products or plant that were reconditioned or overpriced, technologies that were inappropriate in terms of labour, capital or resource endowments, or processes unsuited to local raw materials or environment. Action should thus be taken to control such deficiencies as: (i) inadequate purchasing and procurement policies; (ii) lack of information on sources and prices of major factor inputs and technologies; and (iii) disorganized negotiating and contractual practices. Consequently, particular emphasis must be placed on mastering the assessment, selection and transfer of technology and its acquisition through appropriate policies and practices.

Industrial institutional infrastructure

53. The successful implementation of the subregional programme will require the development of an effective industrial institutional infrastructure which, at present, is inadequate in most countries. Certain institutions exist at the national level, but they rarely suffice to cover all the critical functions essential to a major forward thrust. These functions are outlined in that section of the programme devoted to multinational support projects (see paragraph 85), and a distinction can be made between: (i) those institutions primarily responsible for such activities as the organization of raw material supplies, including energy, the development of factor inputs for production and marketing; and (ii) those performing supplementary services, such as information, banking and insurance, material and product testing, and project preparation.

IV. INITIAL INTEGRATED INDUSTRIAL PROMOTION PROGRAMME

54. The initial integrated industrial promotion programme presented in this chapter is derived from two sources: national projects requiring multinational co-operation submitted by countries in the subregion to UNIDO and ECA, and the subregional industrial programmes developed within the framework of the PTA, SADCC, the Lusaka-based MULPOC or the UNIDO investment promotion services. Following a careful and thorough review of those projects, project proposals and project concepts, at the subregional meeting held at Addis Ababa in November 1983, 18 strategic core projects together with nine support projects were selected to constitute the initial programme. The projects were selected on the basis of the criteria contained in annex 1: all of them are fully in accordance with the priorities of the subregion, the Lagos Plan of Action and the programme for the Decade.

55. It should be emphasized at this juncture that the aim of the programme is not to present core projects for each country in the subregion, but to present an integrated programme that promotes collective self-reliant and self-sustained development through joint efforts. It is envisaged that each country will benefit from the core projects, the impact of which will vary depending on the country's participation. Since the identification of these core projects is a continuous and permanent process, the programme will be revised at regular intervals and adjustments made appropriate to the current needs of the subregion and its level of development.

56. The projects are grouped under subsectoral headings, and subprogrammes comprising similar projects with comparable requirements are presented for specific branches, such as iron and steel, agricultural machinery and food processing. Most projects are still at the initial stage of preparation and require further elaboration. The implementation plan (see chapter V) makes due provision for this more detailed work and definition of the various tasks involved. Moreover, projects are not available for all priority subsectors. These gaps can be filled later, once suitable projects have been identified and developed.

Metallurgical industry

Iron and steel subprogramme

57. The short term component of a subregional development strategy for this industry comprises the upgrading and diversification of products from a major plant in one country. This initial step would enable other countries in the subregion to obtain inputs for their rolling mills in the longer term. Backward integration of iron and steel plants with existing rolling mills is envisaged in order to produce some 2 million tons of crude steel in 1990 and 4.5 million tons in 2000.

58. Iron ore deposits, estimated at 8,400 million tons and containing about 4,200 million tons of iron metal, have been located in 10 countries in the subregion. Coal deposits in the subregion are estimated at about 115,000 million tons, of which 778 million tons are of coking quality. Refractories, fluxes and additives, raw materials used in iron and steel production, are known to exist in adequate quantities in the subregion. Moreover, the subregion possesses adequate fossil fuel and hydroelectric resources.

59. The iron and steel industry in the subregion has an assured market. For the short-term option, countries unable to produce crude steel at present will import billets from Zimbabwe to feed their rolling mills. For the long-term option, market outlets will fall under the following categories:

(i) Countries with electric arc furnaces that may wish to import sponge iron to supplement locally available scrap;
(ii) Countries with rolling mills that may wish to import billets in order to achieve maximum output from their national rolling mills;
(iii) Countries with sufficiently high domestic consumption of iron and steel products to justify the establishment of integrated iron and steel complexes.

60. The iron and steel subprogramme will require a number of support projects such as training of manpower, research and development, design and project implementation capabilities, as well as repair and maintenance capacities.

61. Three projects are submitted for consideration:
(a) Upgrading and diversification of products from ZISCOSTEEL, Zimbabwe (Project profile No. 1;
(b) Expansion of iron and steel mill, Uganda (Project profile No. 2);
(c) Integrated iron and steel mill, Kenya (Project profile No. 3);

PROJECT PROFILE NO. 1

SUBSECTOR: Metallurgical industry (iron and steel)

SUBREGION: Eastern and Southern Africa

1. Project Title: Upgrading and diversification of products from ZISCOSTEEL, Zimbabwe

2. Objective: To upgrade and diversify products from ZISCOSTEEL, Redcliff, Zimbabwe so as to meet the present subregional requirements for iron and steel products.

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Zimbabwe as recommended at first and second meetings of the Easter. and Southern African Steel Development Committee; (8-11 November 1982; 24-28 October 1983) 4. Redcliff, Zimbabwe	5. Conceptual stage 6. Detailed market studies followed by feasibility studies	7. Iron ore: 3,680 million tons at 50% Fe 8. Coking coal: 480 million tons; Natural gas: 60 billion cubic metres; Hydro-electric potential: 4,570 MW. 9. A good network of railway roads and electricity supply available	10. (,000 tons) Domestic demand Bars, rods and sections: 1990 180, 2000 370 Strips, hoop and skelp: 1990 16, 2000 34 Plate, sheet: 1990 325, 2000 691 Total: 1990 521, 2000 1,095 Subregional demand 1990: 1,977; 2000: 4,520 11. Zimbabwe and the subregional market.	12. 0,96 million tons of crude steel (1990) 13. US$405 million in 1990 (1981 dollars)	14. This project was approved at the sixth meeting of the Council of Ministers of the Lusaka-based MULPOC held in Mbabane, Swaziland, 14-16 February 1983.

PROJECT PROFILE NO. 2

SUBSECTOR: Metallurgical industry (iron and steel)

SUBREGION: Eastern and Southern Africa

1. Project Title: Expansion of iron and steel mill in Uganda

2. Objective: To exploit known iron ore deposits for use in expanded steel plant.

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Ministry of Industry, Uganda 4. Uganda	5. Conceptual stage 6. Feasibility study to establish viability, including detailed study of market and future demand in terms of volume and product mix.	7. Existing steel plant utilizes imported billets/ ingots and local scrap at present, but expanded plant will utilize locally extracted iron. 8. Energy required is available. 9. (a) Steel plant in operation but requires expansion. (b) Primary metal facilities still to be developed. (c) Transport facilities between the iron ore beds and the steel/ iron plant still to be developed.	10. Information not available 11. Local market (70%), export to neighboring countries (30%).	12. (a) Present 25,000 tons p.a.: steel intermediates (rods, bars, sections and strips). (b) Expanded 100,000 tons p.a.: current steel intermediates and additional unspecified items. 13. Estimated at US$ 253 million, excluding costs of infrastructure.	14. (a) No collaboration arrangements entered into so far. Government welcomes economic co-operation with multilateral sources in the form of consultancy, foreign capital and technological know-how. (b) The Government and local private sources could provide up to 30% of the estimated total investment, the balance coming from multilateral sources: the structure of ownership flexible. (c) Terms of cooperation are subject to negotiation between Government and potential partners. (d) Information about manpower requirements not available, but training of local personnel necessary.

PROJECT PROFILE NO. 3

SUBSECTOR: Metallurgical industry (iron and steel)

SUBREGION: Eastern and Southern Africa

1. Project Title: Integrated iron and steel mill, Kenya

2. Objective: To establish a new enterprise for the manufacture of non-flat and flat steel products.

3. Promotor/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Ministry of Industry, Kenya 4. Mombasa, Kenya	5. The enterprise is expected to start production in 1990. A draft feasibility study is available. 6. No information available about immediate follow-up activities.	7. Iron ore, manganese ore and coking coal are to be imported, whereas charcoal, limestone, fluorspar and scrap are available locally. 8. To be imported. 9. Five steel plants exist in Kenya. No exact information is available concerning the new enterprise; however, Mombassa has adequate harbour facilities and related infrastructure.	10. 374,000 tons in 1985; 524,600 tons in 1990; 735,800 tons in 1995; and 1,031,500 tons in 2000. 11. Mainly geared to domestic market, but export opportunities to neighbouring countries exist.	12. Proposed production programme: (a) Non-flat products: 103,650 tons in 1995; and 241,250 tons in 2000. (b) Flat products: 316,400 tons in 1990; 445,000 tons in 1995; and 611,400 tons in 2000. 13. Estimated at some US$887 million for all the stages of the project.	14. (a) No information is available concerning any collaboration arrangements entered into in respect of this project. (b) No particular participation by countries in the subregion is sought, however, participation by countries outside the region is sought in terms of equity holding, supply of technology, know-how and loans and credit. (c) Total manpower requirements for all the stages of the project total 6,695 persons at all levels, but no information on training requirements is available. (d) Information derived from document submitted by Government to UNIDO Secretariat.

Engineering industry

Engine manufacturing subprogramme

62. The demand for transport and communications equipment and related items is one of the most dynamic in the engineering subsector. Trucks, lorries and tractors are assembled in Angola, Ethiopia, Kenya, Mauritius, Mozambique, Tanzania, Zambia and Zimbabwe. All these countries import complete, assembled engines which are then mounted on chassis which, for the most part, are imported completely assembled. In the majority of these projects the local value-added is minimal.

63. It has been estimated that over 100,000 diesel engines a year will be required by 1990 to be installed in trucks, buses, lorries and tractors in the subregion: this figure is estimated to rise to approximately 237,000 engines a year by 2000. This demand justifies the establishment of a plant manufacturing two types of diesel engines which would be supplied to existing and proposed assembly plants in the subregion. They would be mounted in agricultural machinery (tractors) and road transport equipment.

64. It should be recalled that the manufacture of machinery and equipment of this kind has been given the utmost priority in the Lagos Plan of Action and the programme for the Decade.

65. One project is submitted for consideration:

- Manufacture of diesel engines for tractors, trucks, lorries and buses, Zimbabwe or Kenya (Project profile No. 4)

PROJECT PROFILE NO. 4

SUBSECTOR: Engineering industry (engine manufacture) SUBREGION: Eastern and Southern Africa

1. Project Title: Manufacture of diesel engines for tractors, trucks lorries and buses, Zimbabwe or Kenya

2. Objective: To develop manufacture of road transport equipment and agricultural machinery

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Second meeting of Inter-governmental Committee of Experts on Engineering Industries for Eastern and Southern Africa following the recommendations of the sixth meeting of the Lusaka-based MULPOC Council of Ministers 4. Zimbabwe or Kenya	5. Conceptual stage 6. Pre-investment studies	7. Grey cast iron and forging quality steel will be available in the subregion. Quality steel to be imported initially. Aluminium ingots can be imported from outside the subregion. 8. Energy available. 9. Physical infrastructure adequate in both locations proposed	10. 100,000 units p.a. (1990) 237,000 units p.a. (2000) 11. Supplies to tractor factory and lorries/ trucks/buses chassis factories proposed for the subregion.	12. 30,000 p.a. on one-shift basis and 90,000 p.a. on three-shift basis 13. (a) Pre-investment studies: US$ 300,000 (b) Total basic investment: US$80 million	14. (a) 50% equity share and 50% loan financing (b) Supply arrangements will be required between ZISCO and the promoters of this project as well as with the proposed grey iron foundry in Kenya (see project profile No. 7). (c) Purchase arrangements will be required between the promoters of this project and the promoters of the proposed tractor project and chassis project (see project profile No. 9) (d) Ancillary industries have to be promoted at the national level to supply parts and components.

Road transport equipment subprogramme

66. The import of transport equipment accounts for a large proportion of the total imports of the African region. The Eastern and Southern African subregion is no exception: it has no manufacturing units for road transport equipment, although, as stated above, trucks, buses and lorries are assembled in various countries in the subregion. It is estimated that the subregion's annual demand for trucks, buses and lorries will be 85,000 in 1990 and 205,000 by the year 2000. These figures justify the establishment of manufacturing units in the subregion.

67. Hitherto, rural transport has received very little attention in the subregion. The rural areas continue to rely on traditional modes of transport which, in most cases, is human porterage. However, if the rural sector is to be developed, an essential prerequisite is the provision of a suitable transportation infrastructure in the rural areas for the movement of food, fertilizers and other goods and materials. It thus follows that an appropriate and cheap means of transport, tailored to the needs of the rural sector, is called for. It is estimated that the subregion's annual demand for low-cost standard multipurpose vehicles will be more than 1 million vehicles in 1990, rising to over 3 million by 2000.

68. Two projects are submitted for consideration:

(a) Manufacture of diesel engine-mounted chassis for lorries, trucks and buses, Ethiopia, Mozambique and Tanzania (Project profile No. 5);

(b) Manufacture of low-cost, standard multipurpose vehicles, Botswana, Madagascar, Mozambique, Uganda and Zambia (Project profile No. 6)

PROJECT PROFILE NO. 5

SUBSECTOR: Engineering industry (road transport)

SUBREGION: Eastern and Southern Africa

1. Project Title: Manufacture of diesel engine-mounted chassis for lorries, trucks and buses, Ethiopia, Mozambique and Tanzania.

2. Objective: To develop road transport equipment manufacture.

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Second meeting of the Intergovernmental Committee of Experts on Engineering Industries for Eastern and Southern Africa following the recommendations of the sixth meeting of the Lusaka-Based MULPOC Council of Ministers 4. i) Ethiopia ii) Mozambique iii) Tanzania	5. Conceptual stage 6. Pre-investment studies	7. (a) Available in the subregion: grey cast iron, commercial steel sections and forging quality steel (b) Quality steel to be imported initially 8. Energy available 9. Physical structure adequate in three locations proposed.	10. 85,000 units p.a.(1990) and 205,000 p.a. (2000) 11. All countries of the subregion for vehicle body building at the national level	12. 7,000 units p.a. working on one shift in each location. Total capacity = 63,000 units p.a. for the three production units working on three shifts 13. (a) preinvestment studies: US$ 250,000 (b) total investment for each plant: US$ 20 million	14. (a) 50% equity share and 50% loan financing (b) supply arrangements required between the promoters of this project and ZISCO (c) Purchase arrangements between the promoters of this project and all countries in the subregion (d) Supply/purchase arrangement for the supply of diesel engines (see project profile No. 8) (e) Ancillary industries have to be promoted at the national level to supply parts and components.

PROJECT PROFILE NO. 6

SUBSECTOR: Engineering industry (road transport)

SUBREGION: Eastern and Southern Africa

1. Project Title: Manufacture of low-cost, standard multipurpose vehicles, Botswana, Madagascar, Mozambique, Uganda and Zambia.

2. Objective: To develop manufacture of road transport equipment suited to rural needs.

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Second meeting of the Intergovernmental Committee of Experts on Engineering Industries for Eastern and Southern African following the recommendations of the sixth meeting of the Lusaka-based MULPOC Council of Ministers 4. i) Uganda, and Zambia (scooter engine and transmission system) ii) Mozambique and Madagascar (engine mounted scooter chassis) iii) Botswana (moped engine and transmission system)	5. Conceptual stage 6. Pre-investment studies	7. Grey cast iron and forging quality steel available in the subregion. Quality steel to be imported from outside the subregion initially. Aluminium ingots to be imported from outside the subregion. 8. Energy available. 9. Physical infrastructure adequate in the locations proposed.	10. 1 million units p.a. (1990) 3 million units p.a. (2000) 11. The scooter engines, moped engines and scooter chassis will be supplied to national units for the manufacture of scooters, mopeds, scooter trailers, scooter delivery vans, etc.	12. 500,000 scooter engines complete with transmission systems 300,000 three-wheeled engine-mounted scooter chassis 200,000 moped engines complete with transmission systems 13. (a) Pre-investment studies: US$100,000 (b) Total investment in 5 plants: US$82.5 million	14. (a) 50% equity share and 50% loan financing (b) Purchasing arrangements for raw materials (c) Ancillary industries have to be promoted at the national level to supply parts and components

Agricultural machinery and equipment subprogramme

69. All the national development plans of the subregion emphasize the development of agriculture and they all give priority to the production of food. However, many, if not most, of the countries depend on the import of machinery and equipment to improve the agricultural sector. Very few countries appear to have a development strategy for the manufacture of agricultural machinery equipment.

70. Manufacturing facilities for agricultural hand-tools exist in most of the countries, while animal-drawn equipment is manufactured in some of the countries. Tractors are imported in completely or partly knocked down form in the greater number of countries and assembly plants are to be found in Angola, Kenya, Mozambique, Tanzania and Zimbabwe. Potential clearly exists for the integrated and interlinked development of tractor and transport manufacturing units, and an area of particular significance is the manufacture of four-wheel diesel-engine tractors.

71. Two projects are submitted for consideration:

(a) Manufacture of agricultural machinery (four-wheel tractors), Zimbabwe (Project profile No. 7);

(b) Irrigation equipment plant, Zambia (Project profile No. 8).

PROJECT PROFILE NO. 7

SUBSECTOR: Engineering industry (agricultural machinery and equipment) SUBREGION: Eastern and Southern Africa

1. Project Title: Manufacture of agricultural machinery (4-wheel tractors), Zimbabwe.

2. Objective: To develop agricultural machinery manufacture

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. MULPOC Council of Ministers 4. Zimbabwe	5. Conceptual stage 6. Pre-investment studies	7. Grey cast iron/ malleable cast iron, forging quality steel, sheet metal and sections would be made available locally. Quality steel to be imported initially. 8. Energy available. 9. Infrastructure adequate.	10. 4-wheel tractors: 15,200 p.a. (1990) 32,000 p.a. (2000) 11. Agricultural sector of the subregion	12. 7,000 units (one shift); 21,000 units (three shifts). 13. (a) pre-investment studies: US$200,000 (b) Basic investment: US$20 mill. (excluding investment for engine production and ancillary industries)	14. (a) 50% of basic investment to be provided by equity share holding and balance by loans. (b) Less than 50% shares to be given to partners. (c) Supply arrangement between this project and the diesel engine project for the supply of engines (see project profile No.8) (d) Ancillary industries to be set up at national level to provide ancillary parts and components.

PROJECT PROFILE NO. 8

SUBSECTOR: Engineering industry (agricultural machinery and equipment) SUBREGION: Eastern and Southern Africa

1. Project Title: Irrigation equipment plant, Zambia

2. Objective: To produce various items of irrigation equipment, such as pumps, pipes, connections and valves.

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. INDECO, the largest company in Zambia, with over 30 subsidiaries. 4. Lusaka or the Copperbelt, Zambia.	5. A feasibility study is available. 6. No details are available.	7. Steel profiles, sheets, pipes, alloy castings, etc., to be imported. 8. Project requirements are met. 9. Available in part, other facilities such as buildings have still to be provided.	10. Information not available 11. Local.	12. Planned capacity: 3,677 tons p.a. or 373,480 pieces p.a. 13. Estimated at US$19.2 million.	14. (a) No information is available on any collaboration arrangements, or planned participation by any countries in the subregion. (b) Participation by countries outside the region sought mainly in terms of financial/technological inputs, such as loans, licences, technology and know how. (c) Project presented to the UNIDO regional investment promotion meeting for Southern African countries (Lusaka, October 1983).

Energy equipment subprogramme

72. The important role of energy in the socio-economic development of a region is well documented. Whereas Africa is endowed with both renewable and non-renewable forms of energy, it still lacks the industrial capacity to exploit these resources. In order to meet the growing demand for electrical power, the programme for the Decade underscores the need to establish manufacturing units producing turbines, transformers, switchgear, transmission and distribution cables, as well as towers and poles.

73. The power equipment industry would also play an important role in the development of core and other related industries in the subregion as the latter supply materials, semi-finished and finished parts required by the former. These core and related industries include:

(a) Foundries and forges which supply forged rotors, castings, etc.;

(b) Metallurgical industry which supplies copper, aluminium and steel products;

(c) Electronics industry which supplies instrumentation, remote control and communications equipment.

74. Three projects are submitted for consideration:

(a) Re-rolling mills for sections and bars for high-tension electricity transmission in Eastern and Southern Africa (Project profile No. 9);

(b) Copper fabrication plant for Eastern and Southern Africa (Project profile No. 10);

(c) Manufacture of transformers, Zambia (Project profile No. 11).

PROJECT PROFILE NO. 9

SUBSECTOR: Engineering industry (energy equipment)

SUBREGION: Eastern and Southern Africa

1. Project Title: Re-rolling mills for sections and bars for high-tension electricity transmission in Eastern and Southern Africa.

2. Objective: To establish a subregional re-rolling mill producing sections and bars for high-tension electricity towers.

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Recommended at the second meeting of the Inter-governmental Committee of Expert on Engineering Industries for Eastern and Southern Africa. (24-28 October 1983) 4. Zimbabwe	5. Conceptual stage 6. Pre-feasibility studies	7. (a) Billets of tower quality steel will be available within the subregion; (b) Zinc for galvanising is available within the subregion. 8. Electrical energy and re-heating fuel will be available. 9. The plant will be located where physical infrastructure already exists.	10. Sections, bars, angles 50,000 tons p.a. in 1985; 100,000 tons p.a. in 2000 11. Electricity enterprises in the subregion.	12. Total installed capacity 50,000 tons p.a. in 1985 100,000 tons p.a. in 2000 13. Total investment (50,000 tons per annum) US$ 100 million.	14. This project is an important component in the electrification programme for the subregion.

PROJECT PROFILE NO. 10

SUBSECTOR: Engineering industry (energy equipment) SUBREGION: Eastern and Southern Africa

1. Project Title: Copper fabrication plant for Eastern and Southern Africa.

2. Objective: To develop energy equipment manufacture.

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Recommended at the second meeting of the Intergovernmental Committee of Experts on Engineering industries for Eastern and Southern Africa (24-28 October 1983) 4. Zambia	5. Conceptual stage 6. Pre-feasibility studies	7. Copper is available 8. Electricity is available 9. Infrastructure exists for copper fabrication.	10. Thousand tons p.a. 1990: 50 — 2000: 125 11. The product will be used by the electricity enterprises in the subregion.	12. Thousand tons p.a 1990: 50 — 2000: 125 13. Total investment (a) Rod rolling mill (50,000 tons p.a.) US$5 million. (b) Cables and conductors (50,000 tons p.a.) US$20 million	14. This project is an important component in the electrification programme for the subregion. The use of copper as a conducting material should be encouraged in the subregion, given its availability and low cost.

PROJECT PROFILE NO. 11

SUBSECTOR: Engineering industry (energy equipment)

SUBREGION: Eastern and Southern Africa

1. Project Title: Manufacture of transformers, Zambia

2. Objective: To develop manufacture of energy supply equipment.

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. (a) Zambia (INDECO) (b) second meeting of the Inter-governmental Committee of Experts on Engineering Industries for Eastern and Southern Africa following the recommendations of the sixth meeting of the Lusaka-based MULPOC Council of Ministers 4. Zambia	5. Pre-feasibility study completed 6. Feasibility study	7. Rolled and drawn copper rods and copper strips available locally. Steel channel sections and angles available in the subregion; other raw materials to be imported. 8. Energy available. 9. Physical infrastructure adequate	10. 4,000 MVA p.a. (1990) 9,000 MVA p.a. (2000) 11. All electricity enterprises in the subregion	12. 1,500 units p.a. (16kVA-2000kVA) 13. US$18.84 million	14. (a) This project should be upgraded into a subregional project to manufacture transformers totalling 3,000 MVA p.a. The additional investment would be approximately US$30 million. (b) Joint participation by other States should be encouraged. (c) Purchase arrangements should be established between this company and the electricity enterprises in the subregion.

Chemical industries

Fertilizers subprogramme

75. Projects related to the establishment of ammonia, phosphate and potash fertilizer plants deserve particular priority in the subregion since, unlike many other chemical plants, they are not restricted to mixing and formulating imported products, but can use local deposits. Furthermore, their economies of scale and investment requirements are such that they are best suited to subregional operations: the optimal scale of production in an ammonia plant, for example, ranges between 1,000 and 1,500 tons a day, which exceeds the requirements of most individual countries in the subregion.

76. In addition to reducing imports, the local production of fertilizers contributes to improved agriculture and hence to the increased production of food. In 1976, fertilizer application in Africa was only a 6 kg per hectare of arable land as against a world average of 64 kg. However, the consumption of nitrogenous fertilizers in the subregion is increasing at an annual rate of 16.7 per cent and is expected to reach 500-800,000 tons by 1990. Zambia and Zimbabwe are the only countries in the subregion with ammonia production facilities, with a combined capacity of 195,000 tons equivalent to 145,000 tons of nitrogen, while other countries import about 40,000 tons of ammonia per year. All the basic raw materials required for the production of ammonia (petroleum products, coal and electric energy) are available in the subregion. Natural gas is available in adequate quantities in Ethiopia, Mozambique and Tanzania.

77. The consumption of phosphate fertilizers in the subregion is increasing at an annual rate of 25.3 per cent, and is expected to reach 550-660,000 tons of pure nutrients by 1990. At present, Mozambique, Tanzania, Uganda [8/] and Zimbabwe are the only countries in the subregion with phosphate fertilizer production facilities, their combined capacity being equivalent to 75,000 tons of pure nutrients. Although new projects in Zambia and Kenya will increase this figure to 115,000 tons, the demand gap is expected, none the less, to range between 435-545,000 tons by 1990.

78. Four projects are submitted for consideration:

(a) Ethiopian potash (Project profile No. 12);

(b) Tanzania multinational ammonia/urea project (Project profile No. 13);

(c) Uganda phosphate fertilizer plant (Project profile No. 14);

(d) Zimbabwe phosphate fertilizer plant (Project Profile No. 15);

8/ Plant has been shut down.

PROJECT PROFILE NO. 12

SUBSECTOR: Chemical industry (fertilizers)

SUBREGION: Eastern and Southern Africa

1. Project Title: Ethiopian potash

2. Objective: To exploit potash deposits and meet multicountry/subregional demand

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Ethiopian Government 4. Ethiopia (Dollol)	5. Feasibility study completed 6. Completion and evaluation of feasibility study	7. Sylvinite: 160 million tons. The total potential reserves of potash could be several billion tons. 8. Potentially available: geothermal 9. Needs to be developed	10. Combined demand for potassium chloride and potassium sulphate in the subregion is expected to rise to 133,000 tons K_2O in 1990 and 232,000 tons by 2000, as against 50,000 tons in 1979. 11. Principal markets for Ethiopian potash are Africa, particularly Eastern and Southern Africa, and the Asia/ Oceania region.	12. 1.5 million tons of potassium chloride from underground mining of sylvinite ore 13. Investment of US$300 million, including outlay for harbour and rail facilities.	14. The Ethiopian Government has reiterated its invitation to other States to participate in its projects. The Government has been requested to contact member States to discuss with them the exact form, nature and level of equity participation.

PROJECT PROFILE NO. 13

SUBSECTOR: Chemical industry (fertilizers)

SUBREGION: Eastern and Southern Africa

1. Project Title: Tanzania multinational ammonia/urea project

2. Objective: Using natural gas reserves to produce ammonia/urea and meet multicountry/subregional demand

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Government of Tanzania 4. On Kilwa Masoko shoreline, 150 miles south of Dar-es-Salaam	5. Awaiting investment decision 6. Final decision as to construction of plant	7. National gas reserves one trillion (10^{12}) cubic feet, enough to supply the plant for 60 years at a rate of 16 million cubic feet/year 8. No information available 9. Construction in Sweden by Sweyards and shipped to Tanzania for erection on Kilwa Masoko shoreline	10. Based on past trends, demand for nitrogenous fertilizers in the subregion is estimated at 2 million tons of nitrogen by 2000. 11. About 90% of the project output will be distributed to countries in the subregion, and balance to other countries in Africa	12. 1,150 ton/day ammonia and 1,750 ton/day urea 13. $US 450 million	14. Following the recommendation made by the sixth meeting of the Council of Ministers of the Lusaka-based MULPOC, Tanzania should consult and obtain equity participation in its ammonia project from other member States. The Tanzanian Government is willing to reduce its equity to 51 per cent and to give 23 per cent to others, including States of the subregion, 26 per cent being held by AGRICO.

PROJECT PROFILE NO. 14

SUBSECTOR: Chemical industry (fertilizers)

SUBREGION: Eastern and Southern Africa

1. Project Title: Phosphate fertilizer plant, Uganda.

2. Objective: To establish new facilities incorporating existing fertilizer plant.

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Government of Uganda (TICAF) 4. Uganda (Tororo)	5. Study undertaken to determine the commercial, technical, financial and economic viability of the project 6. Completion and evaluation of the study	7. Phosphate rock and pyrites. Phosphate reserves are estimated at 230 million tons (12.8 per cent P_2O_5) 8. No information available 9. Adequate	10. Based on past trends, subregional demand is estimated at 1.3 million tons by 2000. 11. Extends beyond subregion to other countries in the Central and North African subregion. 20 to 30 per cent of the planned capacity could be absorbed by Uganda.	12. 210,000 tons/year of concentrates at 380,000 tons/year of single superphosphate. 13. $US 84 million.	14. The Government of Uganda is willing to involve other member States in the subregion in technical services and marketing.

PROJECT PROFILE NO. 15

SUBSECTOR: Chemical industry (fertilizers)

SUBREGION: Eastern and Southern Africa

1. Project Title: Phosphate fertilizer plant, Zimbabwe

2. Objective: To exploit fully phosphate deposits and expand the national fertilizer industry to meet subregional requirements.

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. African explosives and chemical industries 4. Zimbabwe (Msasa)	5. Existing plant 6. Expansion of plant	7. Phosphate rock deposits in Dorowa, Shawa and Shishanya. Pyrite extracted from iron at Duke Range iron and steel mill. 8. No information available 9. Adequate	10. Based on past trends, subregional demand is estimated at 1.3 million tons by 2000. 11. National market and other countries in the subregion.	12. Present capacity 160,000 tpa: additional capacity 200,000 tons of sulphuric acid. 13. Cost of additional sulphuric acid plant: US$ 48 million. Initial factory: Z$ 7.5 million; exploitation of phosphate deposits: Z$ 2.4 million.	14. The sixth meeting of the Council of Ministers of Lusaka-based MULPOC recommended that Zimbabwe expand its phosphate fertilizer industry.

Basic chemicals subprogramme

79. The subregion is still at a very early stage of development with respect to the manufacture of basic chemicals such as sulphuric acid, caustic soda, chlorine and soda ash without basic chemicals, however, such priority industries as food-processing, pesticides manufacture or forest-based industries cannot develop.

80. One project is submitted for consideration:

(a) Production of caustic soda in Kenya (Project profile No. 16).

PROJECT PROFILE NO. 16

SUBSECTOR: Chemical industry (basic chemicals)

SUBREGION: Eastern and Southern Africa

1. Project Title: Production of caustic soda , Kenya

2. Objective: To establish a caustic soda production enterprise

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Ministry of Industry, Kenya 4. Kajiado township, Kenya.	5. No details are available. 6. Information is not available.	7. (a) Locally available: Limestone and soda ash, deposits of latter estimated at 100 million tons. (b) Imported: Sodium nitrate, sulphur and hydrochloric acid. 8. Information about present project requirements is not available. 9. No details are available, apart from general requirements such as land, buildings, machinery and equipment.	10. Information not available. 11. Local 10,000 tons p.a. ; and export: 20,000 tons p.a .	12. 20,000 tons p.a. (initially) and 30,000 tons p.a. (full operation). 13. Estimated at US$ 18 million, including land, buildings, machinery, equipment, shake down costs, contingencies, and working capital. Equity (50% local, 50% foreign), loans and credit schemes are proposed for financing the project.	14. (a) No information about any collaboration arrangements entered into. (b) Kenya has not invited other countries in the subregion to participate in the present project. However, participation by countries outside the region is sought in terms of quality holding, supply of technology, loans and credit. (c) Manpower requirements are estimated at 194 personnel, including 14 expatriates.

Building materials industry

Cement industry subprogramme

81. At present, cement and cement products are widely used in the subregion, gradually displacing stone, mud, bricks and other traditonal materials. This increased use of cement has led to the growing use of steel in the form of structural steel and the displacement of timber as the traditonal reinforcing material. In fact, so great is the demand for cement that most countries in the subregion have to import cement given the lack or inadequacy of local production, further to which cement is becoming increasingly expensive.

82. The Lagos Plan of Action calls for the production of sufficient quantities of building materials so that decent urban and rural housing can be built for the growing population and, in general, the economy's requirements met in terms of building materials by 1990. Cement projects, at both the national and subregional level, would contribute to attaining and maintaining self-sufficiency in one of the basic building materials. The countries are also interested in developing alternative building materials based on local resources and simple technologies. Several industrial wastes and agricultural residues can be processed into effective low-cost building materials and thus help to relieve the inordinate demand for cement. In this connexion, serious consideration might be given to setting up plants producing cement from blast furnace slag or fly ash obtained from iron and steel plants and thermal power stations.

83. One projects are submitted for consideration:

(a) Mauritian cement corporation (Project profile No. 17).

PROJECT PROFILE NO. 17

SUBSECTOR: Building materials industry (cement)

SUBREGION: Eastern and Southern Africa

1. Project Title: Mauritian cement corporation

2. Objective: To establish a new enterprise to produce Portland cement.

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Mr. L. Joonas, a private businessman closely associated with the buildings material industry is sponsoring the project. 4. Mahebourg area, Mauritius.	5. A pre-feasibility study of the project is available. 6. No further details are available.	7. (a) Locally available: 95% of required inputs. (b) Imported: Coal, gypsum and silica sand. 8. Project requirements will be met. 9. To be developed.	10. Information not available. 11. Local consumption and export to neighbouring countries and islands.	12. Planned at 300,000 tons p.a. 13. Estimated at US$ 43.1 million, including fixed investment, working capital, contingencies, etc.	14. (a) No information is available concerning any collaboration arrangements entered into in respect of this project. (b) Participation by countries outside the subregion in the project is sought in terms of financing equity, loans, licencing and know-how. (c) Project presented to the UNIDO regional investment promotion meeting for Southern African countries (Lusaka, Zambia, October 1983).

Ancillary products subprogramme

84. In view of the growing importance of the building materials industry in the subregion and given the limited sheet glass production facilities, one project is submitted for consideration:

(a) Sheet glass production, Madagascar (Project profile No. 18)

PROJECT PROFILE NO. 18

SUBSECTOR: Building materials industry (ancillary products) SUBREGION: Eastern and Southern Africa

1. Project Title: Sheet glass production

2. Objective: To promote local production of sheet glass, an essential building material currently imported by countries in the subregion.

3. Promoter/ sponsor 4. Location	5. Project status 6. Immediate follow-up activities	7. Raw materials 8. Energy 9. Physical infrastructure	10. Projected demand by product 11. Market	12. Capacity by product 13. Total investment	14. Additional information including collaboration arrangements already made and type of participation sought by member states
3. Government 4. Madagascar	5. Prefeasibility study completed in 1976. 6. (i) Consultations with other countries of the subregion for their participation in the project; (ii) Feasibility study; (iii) Mobilization of investment.	7. Sand, quartz, dolomite and felspar locally available. Other raw materials (soda ash, sodium sulphate, borax, fluorspar and cryolite) to be imported. 8. Fuel oil 9. Working of sand pit and mining of quartz and felspar will have to be developed.	10. 10,000 - 12,000 tons per year in the subregion. 11. Madagascar and other countries in the subregion	12. 9,000 tons per year 13. FMG 2000 million (Fixed capital) 1976 figure	14. The project will require market sharing arrangements with other countries in the subregion.

Multinational support projects

85. The strategic core projects identified in paragraphs 58-97 above, require the simultaneous development of support services such as institutional infrastructure and manpower. These support services are not specific to any one subsector as they provide a broad range of modern industrial logistics that are essential to the smooth running of any core industry.

Institutional infrastructure subprogramme

86. After determining the core industries to be promoted, the first essential step is to ensure the availability and proper design of institutional support. At present, this support is far too inadequate, while the extent of the actual foreign exchange outlay for imported institutional services, although significant, is often underestimated. All this points to the need to strengthen or establish institutions appropriate to industry. In so doing, particular attention should be devoted to institutions dealing with: the formulation and monitoring of industrial policies, plans and programmes; project identification, preparation and evaluation; development or upgrading of traditional technologies; appraisal selection, acquisition and adaptation of foreign technologies; regulation of technology; industrial financing; industrial consultancy, management and other services; standardization, testing and quality control; engineering and process design, industrial information, industrial and trade promotion; and industrial training. Closely related to this matter is the need to develop industrial development centres and the requisite technological institutional machinery.

87. Two support projects are submitted for consideration:

(a) Transformation of Serere Research Centre into a subregional R + D centre for the processing of cereals and rootcrops, Uganda (Project profile No. S1)

(b) Assistance to ARSO and AIHTRR (Project profile No. S2)

PROJECT PROFILE NO. S1

INDUSTRIAL SUPPORT AREA: Institutional infrastructure

SUBREGION: Eastern and Southern Africa

1. Project Title: Transformation of Serere research station into a subregional R + D centre for cereals, root crops and their processing

2. Objective: To assist countries in improving food supplies in the subregion by increasing the production of indigenous cereals, root crops and legumes and their utilization in traditional, new and modified food products.

3. Promoter/sponsor 4. Location 5. Estimated total cost	6. Project description and additional information
3. Council of Ministers of Lusaka-based MULPOC 4. Uganda 5. US$ 1,095,000	6. At its fifth meeting March 1982, the Lusaka-based MULPOC Council of Ministers endorsed the progress made on composite flour development programmes and adopted a resolution on converting Serere research station into a subregional institution for research and development of composite flours from sorghum, millet and other cereals and cassava. These crops grow well in the subregion and could reduce dependence on imported wheat. Bakery products made from composite flour as against 100 per cent wheat flour offer many advantages to African countries which import wheat in increasing quantities, yet grow non-wheat cereals, roots and tubers suitable for use in composite flour. These benefits are as follows: (a) Reduction of dependency of local bakeries and associated industries on wheat imports, thus leading to foreign exchange savings; (b) Increased utilization of indigenous products thus providing production incentives; (c) Increased industrial investment, thus generating employment; (d) Increased food self-sufficiency; (e) Convenience as a "vehicle" for improved nutrition through the addition of flour(s) from high-protein legumes. The centre would also give demonstrations of industrial-scale processing of these cereals, rootcrops and legumes and provide training in that field.

PROJECT PROFILE NO. S2

INDUSTRIAL SUPPORT AREA: Institutional infrastructure

SUBREGION: Eastern and Southern Africa

1. Project Title: Assistance to the African Regional Organization for Standardization (ARSO) and the African Institute fo. Higher Technical Training and Research (AIHTTR)

2. Objective: To enhance and strengthen the capacity of both institutions to assist countries in improving: (a) national standards, quality control, and (b) services of African technicians, technologists and engineers through producer-oriented training.

3. Promoter/sponsor	6. Project description and additional information
4. Location	
5. Estimated total cost	
3. ECA/OAU/UNIDO/ARSO/ AIHTTR	(A) ARSO: (a) The immediate project objective is: (i) to harmonize or introduce national standards for priority areas in the subregion; (ii) to harmonize or introduce certifications marking schemes in the subregion; (iii) to assist the countries of the subregion in establishing and operating national metrology programmes; (iv) to establish a technical standards documentation and information service at the ARSO Secretariat; (v) to train technical staff in the field of standardization, quality control, certification marking and metrology; (vi) to assist countries of the subregion in strengthening their national standards bodies (NSB); and (vii) to involve the countries of the subregion in the activities of international organizations concerned with standardization, quality control, certification marking and metrology; and (b) Project outputs: (i) review of standardization, quality control, certification marking and metrology practices in the subregion; (ii) establishment of technical committees in priority fields; (iii) preparation of standards of particular interest to the subregion; (iv) collection and dissemination of data on standardization and related activities in the subregion; and (v) survey of legal and industrial metrology practices in the countries of the subregion.
4. Nairobi, Kenya	
5. (a) US$ 100,000 for ARSO (b) US$ 200,000 for AIHTTR	(B) AIHTTR: This project aims at: (i) producing cadres in specific technical fields of importance to industry and R+D; (ii) re-training of technical trainers, emphasizing the technological re-orientation of education and training schemes; and (iii) clearing-house activities, including comparisons/consensus on technical educational standards/qualifications, manpower profiles and data base, and collection and dissemination of information on industrial and technical training.

Industrial manpower development subprogramme

88. Of the local factors of production, human resources are indubitably the most important. Furthermore, the area of industrial training is one that lends itself to subregional co-operation. Consideration might thus be given to the harmonization of national policies and programmes for the development of industrial technological manpower. The preparation of manpower inventories would facilitate the exchange of programmes as would the establishment of linkages between institutions in the subregion or Africa as a whole. Subregional training programmes within priority subsectors geared to the needs of those subsectors as well as the pooling of national training facilities would help to overcome this current constraint upon the industrial development of both the subregion and the region as a whole.

89. Four support projects are submitted for consideration:

(a) Inventory of regional training facilities (Project profile No. S3);

(b) Managerial and technical personnel training (Project profile No. S4);

(c) Development of industrial consultancy and management capabilities (Project profile No. S5);

(d) Development of local industrial enterpreneurship (Directory of small-scale industrial project profiles) (Project profile No. S6).

PROJECT PROFILE NO. S3

INDUSTRIAL SUPPORT AREA: Industrial manpower development

SUBREGION: Eastern and Southern Africa

1. Project Title: Inventory of subregional training facilities

2. Objective: To prepare an inventory of industrial training facilities in the subregion and strengthen a limited number thereof in order to improve industrial manpower training in the subregion.

3. Promoter/sponsor 4. Location 5. Estimated total cost	6. Project description and additional information
3. SADCC 4. SADCC Industrial Co-ordination Unit, Dar-es-Salaam, Tanzania 5. Information not available	6. The project is designed to provide a complete survey of all training facilities/schemes in the subregion on the basis of which comprehensive subregional training programmes can be prepared and implemented. Although the project is being promoted by the SADCC it is planned to expand its scope to include the other countries in the subregion and to involve AIHTTR and other relevant institutes. In carrying out the survey, information which would contribute to the preparation of an inventory of the industrial structure of the subregion should also be collected.

PROJECT PROFILE NO. S4

INDUSTRIAL SUPPORT AREA: Industrial manpower development

SUBREGION: Eastern and Southern Africa

1. Project Title: Managerial and technical personnel training

2. Objective: To train the managerial and technical personnel required for subregional industrial development

3. Promoter/sponsor 4. Location 5. Estimated total cost	6. Project description and additional information
3. SADCC 4. SADCC Industrial Coordination Unit, Dar-es-Salaam, Tanzania. 5. Preparatory phase costs are estimated at US$ 25,000 Total cost of implementing the project still to be determined.	6. (a) Background: A project idea discussed during a UNIDO programming mission to certain SADCC countries. (b) Immediate objective: To plan and implement training programmes for managerial and technical personnel at the Eastern and Southern African Management Institute (ESAMI), Dar-es-Salaam, in such areas as: (i) small-scale industries development and management; (ii) project planning, evaluation and management; (iii) production management; (iv) stock control and warehouse management; (v) financial management; (vi) planning, evaluation and management of transport projects. (c) Project activities: Following approval of the project, UNIDO will in co-operation with ECA and OAU assist SADCC in conducting a survey (preparatory phase) to determine training needs in the subregion, on the basis of which training programmes to be carried out during the second phase can be planned. The project was initially proposed to last six months. (d) The scope of the project will be expanded to include other countries in the subregion.

PROJECT PROFILE NO. S5

INDUSTRIAL SUPPORT AREA: Industrial manpower development

SUBREGION: Eastern and Southern Africa

1. Project Title: Development of industrial consultancy and management capabilities

2. Objective: To develop or strengthen industrial management and consultancy institutions and policies in order to improve industrial management and consultancy in the subregion.

3. Promoter/sponsor 4. Location 5. Estimated total cost	6. Project description and additional information
3. SADCC 4. SADCC Industrial Coordination Unit/ Tanzania Industrial Studies and Consultancy Organization (TISCO), Dar-es-Salaam, Tanzania. 5. No information available.	6. (a) Background: A project idea discussed during a UNIDO programming mission to certain SADCC countries. It is proposed that UNIDO, SADCC Industrial Coordination Unit and TISCO meet to draft the project document. (b) Immediate objective: To develop or strengthen industrial management and consultancy institutions and policies designed to contribute to the effective implementation of the subregional industrial development programme. (c) Project activities/cost/duration: Project activities are still to be defined: total costs are estimated at US$ 891,000. It is proposed that the project last two years. (d) Suggestion: The scope of the project will be expanded to include other countries in the subregion.

PROJECT PROFILE NO. S6

INDUSTRIAL SUPPORT AREA: Industrial manpower development

SUBREGION: Eastern and Southern Africa

1. Project Title: Development of local entrepreneurship (Directory of small-scale industrial project profiles)

2. Objective: To upgrade entrepreneurial capabilities in the small-scale industry, thereby promoting the establishment of those types of small-scale and manufacturing industries required during the Industrial Development Decade for Africa (1980-1990).

3. Promoter/sponsor 4. Location 5. Estimated total cost	6. Project description and additional information
SADCC + PTA 3. ECA/OAU/UNIDO 4. Addis Ababa 5. a) Project personnel US$ 166,000 b) Training workshops and study tours for African entrepreneurs 222,140 c) Equipment 12,000 Total 400,140	6. The project aims at assisting African countries in laying the foundation for the accelerated, rational and integrated development of the small-scale industry subsector with a view to satisfying basic consumer needs and development needs in rural and urban areas, as well as achieving the objectives spelt out in the programme for the Decade. The directory of project profiles is expected to provide local small-scale industrial entrepreneurs with the detailed information and guidance they require for initiating, preparing and implementing small-scale industrial projects, with or without the help of extension services. It is envisaged that the directory of project profiles will be developed into a handbook for entrepreneurs and African investors interested in small-scale industrial promotion units. ECA undertook an initial project in this field (Reference: ECA/INR/SSI/WP/2 - Directory of Project profiles on small-scale industries in Africa).

Other support projects

90. Projects included in this category are more in the nature of studies leading ultimately to the development of multinational investment projects in priority areas. Once developed further, they would be included among the investment projects to be promoted.

91. Three support projects are submitted for consideration:

(a) Processing of fish and other sea foods (Project profile No. S7);

(b) Improvement and development of the cement industry (Project profile No. S8).

(c) Utilization of steel plant waste for the production of slag-cement (Project profile No. S9).

PROJECT PROFILE NO. S7

INDUSTRIAL SUPPORT AREA: Other support projects

SUBREGION: Eastern and Southern Africa

1. Project Title: Processing of fish and other seafoods

2. Objective: To expand existing plants and/or develop new plants for processing fish and other seafoods for the purposes of import-substitution and export.

3. Promoter/sponsor 4. Location 5. Estimated total cost	6. Project description and additional information
3. SADCC + PTA ECA/UNIDO/OAU 4. Co-ordination in Addis Ababa 5. The cost of the exploratory study is estimated at US$ 40,000.	6. Although fish is one of Africa's major economic resources, coastal fishing is in the hands of foreign companies, thus impeding the development of African fishing and processing. The coasts of the subregion offer considerable openings, especially for the fishing of tuna, sardines and shrimps. Most coastal countries in the subregion have fishing ports and some improvements are planned in the course of the Transport and Communications Decade. An exploratory study will determine the range of products such as fish flour, fish oil, fish protein concentrate and shrimps, as well as the manpower requirements. The exploratory study, which will be followed up by a pre-feasibility study, if needed, will also propose the country or countries best suited to promote the investment project(s).

PROJECT PROFILE NO. S8

INDUSTRIAL SUPPORT AREA: Other support projects

SUBREGION: Eastern and Southern Africa

1. Project Title: The improvement and development of the cement industry

2. Objective: To provide assistance to the SADCC member countries in developing and improving their cement and allied products industries.

3. Promoter/sponsor 4. Location 5. Estimated total cost	6. Project description and additional information
3. SADCC 4. SADCC Industrial Coordination Unit, Dar-es-Salaam, Tanzania. 5. Project costs still to be established.	6. (a) Background: A project idea discussed during a UNIDO programming mission to certain SADCC countries . (b) Immediate objective: To establish a network of national institutions (coordinated by the SADCC Industrial Coordination Unit), which will: (i) gather and disseminate technical information related to cement and allied products; (ii) initiate and coordinate subregional R + D programmes on cement and allied products, including feasibility studies; (iii) provide consultancy and advisory services; and (iv) organize training programmes, study tours, fellowships as well as meetings and workshops on various aspects of cement and cement-related industries. (c) Project activities: Project activities are still to be defined.

PROJECT PROFILE NO. S9

INDUSTRIAL SUPPORT AREA: Other support projects

SUBREGION: Eastern and Southern Africa

1. Project Title: Utilization of steel plant waste for the production of slag-cement.

2. Objective: The objective of the project is to assist the Zimbabwean authorities in carrying out detailed techno-economic investigations related to the design of a plant using steel plant waste in the production of cement for construction purposes, thereby contributing to the economic viability of the Zimbabwe steel project. (See project profile No. 1)

3. Promoter/sponsor	6. Project description and additional information
4. Location	
5. Estimated total cost	
3. SADCC + PTA	6. As indicated in project profile No. 1, the Government is planning to expand the facilities of ZISCOSTEEL in order to upgrade and diversify production. This will produce a significant amount of waste (slag) which could be utilized in the production of slag-cement. Before embarking on the establishment of the slag-cement plant, it would be desirable to undertake a full fledged techno-economic feasibility study not only to ensure the viability of the plant but also to define plant size and other technical parameters.
4. Zimbabwe	Preliminary estimates indicate that the plant could produce 400,000 tons of slag-cement per year based on two alternative processes: one involving an estimated investment of US$ 80 million and the other US$ 25 million. The first alternative would comprise an integrated cement plant with captive plant for slag granulation and intergrinding of cement clinker and slag requiring such raw materials as limestone, clay, gypsum and metal slag. The second alternative would comprise a cement clinker slag grinding plant with captive slag granulation plant. Capital and market participation by other countries will be necessary. Both alternatives would require transport and slag storage facilities, and the second alternative would also require cement silos, and the basic inputs would be cement and metal slag only.
5. US$150,000	The products from the plant would not only meet the local demand in Zimbabwe but also that of the subregion. The work to be carried out would include consultations with Governments in the subregion, given the multinational character of project and the need to finalize financing arrangements for the establishment of the plant.

V. PLAN FOR THE IMPLEMENTATION OF THE INTEGRATED INDUSTRIAL PROMOTION PROGRAMME

92. The implementation of the integrated industrial promotion programme will call for series of steps to be taken by the countries in the subregion and by the co-ordinating organizations: UNIDO, OAU, and ECA. These steps are spelt out below. At the same time, it should be recalled that the elaboration of the integrated programme is a continuous process. Thus, both Governments and intergovernmental organizations in the subregion are urged to continue submitting project proposals for inclusion in subsequent stages of the programming exercise.

At the national level

93. The success of the programme will be determined by the actions taken at the national level and by the policies and operational mechanisms adopted by Governments. These actions include:

(a) Formal endorsement of the programme and its projects by Government;

(b) Incorporation of the salient features of the subregional programme and its projects in national industrial development plans, possibly incurring the need to adjust ongoing national industrial development plans;

(c) Allocation of the human, financial and physical resources needed to implement the projects;

(d) Strengthening or introduction of operational mechanisms (e.g. corporations, companies, commissions) responsible for follow-up, including project definition, pre-investment studies, investment promotion, and project-related consultations with other countries in the subregion;

(e) If designated lead country, official submission of the project to financial institutions such as the African Development Bank (ADB), Arab Bank for Economic Development in Africa (BADEA) and the World Bank;

(f) On the basis of profiles for core investment projects, elaboration of detailed pre-investment studies, assisted by UNIDO, ECA, ADB and competent local industrial consultancy organizations;

(g) Improvement of domestic manpower capabilities and institutional capacities needed for the identification, preparation and implementation of projects.

At the subregional level

94. Given that the industrial priorities set for the Preferential Trade Area, SADCC, and the Lusaka-based MULPOC Council of Ministers coincide with those of the Decade, all activities at the national and subregional level during the preparation and implementation of the identified core and support projects should further the attainment of those objectives. Activities at the subregional level include:

(a) Formal endoresment of the initial integrated industrial promotion programme by the intergovernmental organizations in the subregion, such as PTA, SADCC and the Lusaka-based MULPOC Council of Ministers, and inclusion thereof intheir subregional development plans and programmes;

(b) Establishment of subregional intergovernmental committees (in concert with initiatives taken by existing intergovernmental organizations) to co-ordinate, moni and advise Governments on the selection and implementation of multinational projects in each subsector;

(c) Provision by those intergovernmental committees of advice to Governments on the preparation, implementation, management and monitoring of the multinational industrial projects, including the definition of:

(i) The broad principles governing the relationship among the parties and specifying the co-operation arrangements in the areas of industrial production, and trade in industrial raw materials and products;

(ii) The policies and supporting measures which the Governments concerned should pursue;

(iii) Operational principles and measures, including mutual benefits or equitable treatment;

(iv) Joint ventures involving such bodies as multinational corporations in the countries of the subregion, or member countries of the subregion and other subregions and regions, or statutory corporations and other enterprises;

(v) Co-production and specialization, including subcontracting and marketing, as an arrangement of particular importance to engineering-based core industries;

(vi) Joint acquisition of technology and the mobilization of financial resources.

(d) Agreement among the countries in the subregion on the host country for each multinational core project and the respective roles of the others in implementing the core projects. This would include agreement on:

(i) Supply of the requisite raw materials and energy;

(ii) Purchase of intermediate and final products;

(iii) Equity share-holding, majority of which should be owned by African countries;

(iv) Training and allocation of manpower to the project;

(v) Conducting R + D related to the project;

(vi) Exchange of information;

(vii) Management of the enterprise;

(viii) Subcontracts, where feasible.

(e) Assistance by intergovernmental organizations and development banks in the subregion in the mobilization of financial and other resources, including investment promotion for the implementation of the multinational core projects;

(f) Strengthening or establishment of operational arrangements, such as multinational corporations or enterprises linked with corresponding national corporations, for the implementation of specific project or complex of projects. In this regard, it should be noted that in establishing multinational enterprises aimed at a lasting and effective economic relationship, it may be necessary for each partner, particularly the Governments, to share in the risks and rewards of the enterprises and participate fully in the decision-making process at the highest managerial level;

(g) Involvement of African chambers of commerce and industry or manufacturers and their associations as well as competent local consulting firms from the outset of the project, increasing their participation/involvement as the project develops.

Role of co-ordinating and other agencies

95. The successful implementation and economic operation of core industries calls for the development of human and technological capabilities, the mobilization of financial resources as well as the establishment or strengthening of the capabilities to service and augment the industrialization process in the subregion. The agencies and organizations of the United Nations system, in particular, UNIDO and ECA, in close co-operation with the OAU, ADB and other African organizations such as ARCT, ARCEDEM, AIHTTR, PATU, and IDEP can contribute to meeting those requirements and thus help to overcome the acute developmental problems of the subregion.

96. For the most part, these organizations would provide technical assistance, upon request, in the following areas:

(a) Updating of the subregional industrial programme, preparation of pre-investment studies, including investment profiles on selected projects in each subregion, providing information on such items as: consumption; plant size; raw materials; utilities; technology; investment; manpower and training; probable production cost; project/programme profitability; and potential market(s);

(b) Identification of specific areas and modes of co-operation between countries, as well as between producers and R + D facilities, in implementing the programme for the Decade;

(c) Establishment of a subregional co-ordinating committee, under the aegis of the PTA and SADCC, to review and update the subregional integrated industrial promotion programme, monitor its implementation and co-ordinate the activities of the subsectoral committees described in subparagraph 94(b).

(d) Development of capabilities related to: industrial planning; industrial consultancy; project preparation; procurement of supplies; and support of local entrepreneurs and manufacturers including the creation of associations related to core programmes;

(e) Organization of technical consultations, negotiations and investment promotion meetings in specific core subsectors. These will include consultation and negotiations between:

(i) African countries, involving both State finance institutions and local agents of production and distribution;

(ii) African States and potential partners from other developing countries through ECDC, involving potential investors from those countries as well as financial institutions.

(iii) African States and potential partners from developed counties.

97. In providing the above assistance, close inter-agency co-operation in the subregion is required so as to ensure full harmonization of the endeavours of both the United Nations organizations and the OAU to the benefit of the subregion. OAU, ECA and UNIDO should devise an appropriate system to assist countries in monitoring the implementation of this integrated industrial programme within the context of the Industrial Development Decade for Africa. States should thus provide those organizations with information on their activities so that progress reports can be submitted to the Conferences of the African Ministers of Industry. Although the countries in the subregion are expected to use all the economic and diplomatic channels at their disposal to promote the projects identified, UNIDO should assist through its investment promotion programme, including the use of its investment promotion services.

ANNEX I

Criteria for selecting multinational/ subregional industrial core projects

For an industrial project to qualify as a multinational/subregional core project, it should meet all basic requirements in group I and one or more additional requirements in group II.

I. Basic requirements

The project:

(a) Provides inputs into the priority sectors selected in the Lagos Plan of Action and the Final Act of Lagos, i.e. food, transport and communications and energy;

(b) Provides effective integration and linkages with other industrial and economic activities and infrastructures in the subregion.

(c) Utilizes and upgrades, to the maximum extent possible, African natural resources (raw materials and energy) so as to benefit first the subregion, secondly other African countries and thirdly non-African countries.

(d) Produces intermediates for further processing or fabricating in an increasing number of established or planned industries or engineering goods, particularly those related to food production and processing, building materials, textiles, energy, transport and mining.

(e) Caters, first and foremost, directly or indirectly, to the basic needs of the people in the subregion and, if required, in other African countries.

(f) Involves (i) economies of scale, (ii) complex technology or upgrading of technology, (iii) large investment and (iv) market(s) beyond the reach of individual countries in the subregion.

(g) Offers scope for co-operation, especially among the African countries, in long-term supply/purchase arrangements for raw materials, intermediates and final products; subcontracting; barter; equity share holding; etc.

(h) Contributes to reducing the region's heavy reliance on external factor inputs.

II. Additional requirements

The project:

(a) Offers comparative advantage(s) over similar project(s) - actual or potential - in other groups of countries (African and non-African), particularly in respect of raw materials, energy and the infrastructure required.

(b) Complements related project(s) or existing production unit(s) in the subregion.

(c) Earns foreign exchange through the export of its products, including upgrading of raw materials.

(d) Results in rehabilitation and rationalization of existing production unit(s).

(e) Replaces, whenever practical, synthetic materials by natural materials, particularly those that are renewable.