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09298

Distr. LIMITED
UNIDO/EX.103
30 November 1979
ENGLISH

UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION

ORGANIZATION OF AFRICAN UNITY (OAU)
Expert Group Meeting to assist
the OAU Secretariat in the
Preparation of the 1980 Special
Economic Summit

AFRICAN INDUSTRIAL DEVELOPMENT PERSPECTIVES^{1/}

prepared by

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^{1/} The information in this document has been drawn largely from document ECA/CMI/FCIA.6/WP/7 containing Recommendations, Suggestions and Comments on the Provisional Agenda for the Third General Conference of UNIDO.

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id.79-9692

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I. INTRODUCTION

1. Social, cultural and economic development strategies and objectives of Africa

The "Monrovia Declaration of Commitment of the Heads of State and Government, of the Organization of African Unity on Guidelines and Measures for National and Collective Self-reliance in Social and Economic Development for the Establishment of a New International Economic Order (ANG/ST,3(XVI) Rev.1)" adopted by the OAU Heads of State and Governments at their sixteenth Summit held in Monrovia, Liberia from 17 - 20 July 1979 committed the Heads of State and Governments, individually and collectively on behalf of their governments and peoples to the strategy for social, cultural and economic development in Africa. The declaration also sets out the framework of action on economic development pattern in Africa and provides the strategy for the African region for the international development strategy for the Third United Nations Development Decade.

Guiding principles

In adopting the strategy for the social, cultural and economic development of Africa and for the African region in the international strategy for the Third Development Decade various considerations were taken into account. These included the fact that :

- a) the present imbalances in the international economic order are largely due to the overwhelming industrial and technological gap among the various groups of the nations of the world, and that the multiplying effects of this industrial and technological gap are increasingly becoming more severe on the international monetary system, trade relations and economic co-operation;
- b) the African region is known to be the least developed of all developing regions and to contain the largest number of least developed and land-locked countries as well as being the least physically integrated in terms of transport and communications; and

- c) the region has in general not significantly succeeded in designing and implementing measures for effecting internal structural changes and improvement of factor inputs on both of which self-reliant and self-sustaining development depends.

It was also noted that policies, strategies and development programmes in the region continued to be markedly affected by misconceptions and erroneous strategies which tended to consolidate the region's external dependence for food, skills, technology, capital goods and services, markets and even life-styles and patterns of development and economic growth.

African social, cultural and economic development objectives

The social, cultural and economic development objectives for Africa adopted by the Heads of State and Government made special mention of the need for :

- a) establishment of self-sustaining, internally located processes of development and economic growth at the national and/or multi-national levels;
- b) subregional and regional collective self-reliance;
- c) development of human resources to ensure their greater participation in the development process;
- d) broad-based participation in the development process concurrent and consistent with equitable distribution of the gains of socio-economic development;
- e) the industrialization process on the continent in the context of the social and economic environment of each country and not a simple importation of foreign industrialization patterns.

In pursuit of this and other objectives priority for the next United Nations Development Decade was accorded to :

- first, the attainment of regional self-sufficiency in food;
- second, the establishment of a sound industrial base with special emphasis on the development of the requisite national industrial and technological policies, capabilities, and institutional infrastructures, as well as intra-African co-operation in order to permit the industrial take-off of Africa;
- third, the physical integration of the region through the development of transport and communications at the national, multinational and regional levels;
- fourth, the development of capabilities - national, multinational and regional - required to enable African Governments and their peoples to establish sovereignty over their natural resources;
- fifth, the establishment of mutually beneficial and equitable relations between African countries and the rest of the world; and
- sixth, the attainment of a substantial increase in the present meagre 4 % share of intra-African trade in the total trade of Africa.

2. Basic characteristics of the existing industrial structure in Africa

It is to be noted from section 1. above that considerable importance has been accorded to the industrial sector as an important measure for the achievement of the social, cultural and economic development strategies and objectives of the region. It may therefore be worthwhile to examine the basic characteristics of the existing industrial structure of Africa.

The African region is known to be the least developed of all developing regions and to contain the largest number of least developed and land-locked countries as well as the least physically integrated, has in general not significantly succeeded in designing and implementing measures for effecting internal structural changes and improvement of factor inputs on both of which self-reliant and self-sustaining development depends. Policies, strategies and programmes, in the region continued to be

affected by misconceptions and inappropriate strategies which tended to consolidate the region's external dependence for food, skills, technology, capital goods and services, markets and even life-styles and patterns of development and economic growth. Productivity of labour and other factors of production had remained low. The internal dynamics of growth had not led to self-reliant and self-sustaining economic development in most cases.

The extent of African dependence on the outside world for skilled manpower of all kinds and all levels for capital equipment, intermediate goods, spare parts, components and accessories, simple tools and implements, industrial technology, is almost pathetic while other regions such as Latin America and Asia are already exporting cars, machine tools, ships, mining equipment, rail and rolling stock and other items too numerous to mention.

One of the basic characteristics in African development is the dominant role of foreigners in the African economies and the absence and/or weakness of an indigenous business community. In both agricultural and industrial sectors, the dominant factors are the group of oligopolistic foreign private firms which directly or indirectly control the modern sector not only in production, collection and marketing of agricultural and mineral products, but also in the local processing or assembly of manufactured goods and the provision of modern banking, shipping, insurance, tourism, construction and real estate services. Some of these foreign firms are subsidiaries of multinational companies whose basic motivational structure is the maximization of the returns on their economic outlays. Since the adoption of the Lima Declaration and Plan of Action African countries have pursued concerted action towards the achievement of the minimum of 2 % world industrial output set for the region by the year 2000.

Progress towards the achievement of the quantitative targets of the Lima Declaration has fallen short of expectation. The average annual growth of manufacturing value added for developing Africa has remained about the same as the average of 6 % during the period 1970-1977. Although reasonable when internal problems of some countries and recent trends in world economic conditions are concerned, this rate is nevertheless, well below the 8 % target set in the International Development Strategy and even less satisfactory when the requirements for achieving the regional contribution to the Lima target are considered.

Africa's share in world production of manufactures remained little changed in 1978 at less than 0,9 % of the total (in 1975 prices). This compares to a continued slight increase in the share of other developing regions which rose to about 9 % of the total, thus indicating a declining African position relative to other developing regions. This poor state of affairs is due to the fact that the African region's share in world output of metal and engineering products (the leading sectors) remained unchanged at 0,2 % in the 15 years between 1955 and 1970 and that the share of metals and engineering products in the total industrial production during this period appeared to have declined. Of all developing regions, Africa has the lowest ratio of engineering production to engineering imports.

The share of heavy industries in manufacturing value added defined to include chemicals, petroleum products, non-metallic mineral products, basic metals and metal products rose from 32 % in 1970 to 39,8 % in 1976. On the other hand the share of light industries which include food, beverages, tobacco, footwear, textile, wood products, furniture and paper products, declined from 63 % in 1970 to 60,2 % in 1976. The growth rate of heavy industries rose by 9,3 % yearly while light industries grew at a mere 4,1 % yearly.

Employment in manufacturing has also grown more slowly than manufacturing value added as a result of industry's becoming more capital intensive and oriented towards heavy industry. Between 1971 and 1976, employment in the manufacturing industry appears to have risen by 5,8 % a year in North Africa, 5,6 % in West Africa but by only about 2,7 % a year in East Africa.

Africa's trade in manufacture continues to be characterized by a large and increasing imbalance of imports over exports. Export of non-ferrous metal products, which constitute a large proportion of African manufactures exports, has suffered a considerable decline largely due to unfavourable conditions affecting the major African exporting countries. Many new manufactured goods such as engineering products, are beginning to be exported, but their share in total export of manufactures is still small. Dependence on imports of capital goods oil and foodstuffs to meet domestic requirements and the slow growth of agricultural production and rapid growth in population increased the external debt and accentuated the inflationary pressures in the majority of countries.

Progress in multinational industrial co-operation, has also fallen far short of expectation. This was due partly to lack of sufficient information to Government with the complexities of launching extra-territorial industrial facilities and partly to uncertainties regarding the sharing of benefits in multinational schemes. While some sort of institutional machinery for promoting economic co-operation in Africa has been initiated, this needs to be greatly strengthened. Although visible progress has been made by existing economic groups in the areas of transport, communications and development of skills, the same has not been true of the industrial sector. This was due, inter alia, to the limited net financial resources transferred from the developed to the developing countries, constraints encountered by the African countries in the mobilization of financial resources; an apparent decline of investment and the limited offer of grants and soft loans, instead of the traditional approaches to investment, in the African countries; the shortage in industrial and technological personnel; the continuation of trade barriers arising from protectionism by the developed countries and the burden of adjustments on the part of the developing countries; and the growing competition between synthetic and natural products.

Thus, Africa continues to face serious problems for achieving industrialization objectives because of the wide-spread shortage of industrial manpower capital and technology. This situation is further aggravated by the continuing crises in the international economy. At the same time, hopes placed on regional co-operation in the field of industry do not seem to be materializing yet industrial co-operation and integration is a necessary condition for accelerating the pace of industrialization in Africa.

3. African industrial development strategies and objectives

In view of the situation reflected in section 2. above and in the light of the broad African social, cultural and economic development objectives presented in part above, a need has been recognized for a complete reorientation of the current pattern of industrial development in Africa and to adopt new approaches to ensure the maximum contribution to the integration with the overall social and economic development of the continent. A major step towards this direction was the African Regional Symposium jointly organized by the OAU, ECA, and UNIDO on Industrial Policies and Strategies for Internally Self-sustaining Development and Diversification and Collective Self-reliance during the period 1978-2000 which was held in Nairobi, Kenya from 11-18 September 1979. The Symposium, which had been called for and whose report has been considered and adopted

by the Conference of African Ministers of Industry, reviewed the present industrial development situation in Africa and identified measures for the future re-orientation of African industrial development. The recommendations of the Symposium, which took in account the results of national symposia and workshops papers, supplement and enrich the "Monrovia Declaration", and put emphasis on the following :

The will to industrialize

The important role of the will to industrialize, which had been the subject of discussions and resolutions in many other regional fora, was once more emphasized. While the will to industrialize had been expressed on many occasions, this has not been properly translated into action and reflected in national financial allocations. This has also been amply manifested in the failure to achieve the objectives of national industrial development plans, mainly due to a lack of the required inputs for their implementation. In this connexion it may also be pointed out that political leadership plays a very important role in industrial development.

Economic independence, self-reliance and self-sustaining industrial development

There are obvious inadequacies of existing instruments in respect of the attainment of economic independence, self-reliance and self-sustaining industrial development. Given the historical context and present basic characteristics of industrialization in Africa, there is a need to re-structure the existing traditional instruments and economies of African countries to facilitate the achievement of self-sustaining industrial development and independence. The development instruments required for industrial development might differ from country to country, depending on their level of development.

There is thus a need to foster African regional and subregional collective self-reliance and to strengthen intra-African industrial co-operation for the achievement of self-sustaining development and economic

growth at the national and/or multinational level. Since twenty of the 31 countries recognized as belonging to the least developed category are in Africa, emphasis needs to be placed on special measures in support of these as well as of the land-locked, island and the most seriously affected countries. There is also a need to restructure international economic relations in such a way as to ensure that these supplement Africa's own efforts at the national, multinational and regional levels for the achievement of its self-reliance and self-sustaining industrial development objectives.

Reorientation of industrial development strategies and policies

In many countries of the region, import-substituting industries had been accepted as a starting point along the path towards industrialization in that they were meant to satisfy an existing domestic market based on imported goods. The expansion of import-substitution could run up against the limited size of domestic markets. Therefore, planners in a number of countries had shifted emphasis from import-substitution to export-oriented industries. The new export industries would undoubtedly need aggressive export promotion and industrial restructuring measures particularly related to access to markets and foreign technology and the development of indigenous technology.

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

There is a need to design and implement a rational policy which would encourage the development of industries satisfying basic needs, food, shelter, clothing, education and health care; creating higher employment; and providing higher value added. In this connexion, the development of the basic and capital and intermediate goods industry should facilitate the production of basic goods and the production-processing-marketing of food and agricultural products, should be approached as an integrated and interdependent system whenever considering the development of food industries.

There is also a need to intensify the linkage and integration of industry with the other sectors of the economy especially agriculture, transport and communications, education, rural development, mining, energy, housing and health and the location of industries in rural areas with a view to stimulating development in those areas and arresting the general trend toward rural emigration. In this connexion, the development of agriculture is a strong support for industrialization.

Intra-African industrial co-operation

Regional co-operation is essential to rational industrial promotion and development, especially in view of the limited markets of individual African countries and also because of the advantage offered by the joint exploitation of resources, the pooling of financial and other resources and co-operation in training and the exchange of information. Concrete measures to further intra-African co-operation include the :

- i) harmonization of incentive schemes to stimulate and promote intra-African industrial investment as a means for industrial integration in African countries;
- ii) establishment or strengthening of organizations at the regional and subregional levels including technology, management, consultancy, training and engineering design centres, federations of African small-scale industrial enterprises and financial institutions to promote the exchange of information and technical co-operation;
- iii) creation of multinational production enterprises owned and controlled by African states in priority industrial sectors;
- iv) promotion of greater intra-African trade for the expansion of African markets for its manufactured goods.

II. CRITICAL CONSIDERATIONS FOR ACCELERATED INDUSTRIAL DEVELOPMENT IN AFRICA

1. The will to industrialize

In order to ensure accelerated industrial development, it is critical that the will to develop, both by the African countries, at the highest possible level, is translated into concrete terms. This would mean a readjustment of the present imbalance of financial and resource allocations among the major sectors of the economy in recognition of the support role of industry to the development of the other economic sectors.

2. Industrial structure

There is a need therefore for a complete reorientation of the present industrial structure and for the institution of a more appropriate one commensurate with African industrial development aspirations. Such a new structure must aim at :

- a greater integration of industry with the other economic sectors;
- greater participation of indigenous people in the formulation and implementation of industrial policies and plans;
- the development of suitable industrial and related manpower;
- the establishment of appropriate institutional machinery;
- the local processing of natural resources;
- accelerated rural development to ensure more equitable distribution of income and eradication of poverty;
- establishment of basic and capital goods industries to meet the basic need and inputs for the development of the other economic sectors especially about agriculture and
- expansion of trade in African manufactured goods.

3. Industrial environment

A major constraint in the industrial development efforts in Africa is the inadequate industrial environment. This relate particularly to inadequate physical infrastructure, industrial entrepreneurship and the various services such as energy necessary for industrial development. For the African industrial development efforts to make a breakthrough, it is necessary for the industrial environment to achieve a certain minimum level of development. The necessity for the development of suitable communications systems, energy resources, industrial entrepreneurship, and other services to industrial development have been highlighted on several occasions and do not need further elaboration.

4. Raw materials

One of the basic constraints in the industrial development efforts of the African countries relate to the fact that most of the African countries remain, by and large, exporters of raw materials, and importers of finished goods. This constraint is particularly relevant in view of the African aspirations for self-reliant and self-sustaining industrialization, which implies total control over its natural resources. This also has multiplying effects on financial resources for industry and the provision of more employment opportunities. The lagging agricultural production has also imposed an additional constraint.

In order to alleviate the above constraint it is extremely necessary to adopt policies and measures for the total integrated vertical development of Africa's raw materials particularly those derived from agricultural, mineral and energy resources. This, of course, has implications on technology, finance and skills, all of which need to be developed or imported on favourable terms. In the development of these raw materials, emphasis need to be accorded to the establishment of basic industries especially agro and agro-related industries, metallurgical, chemical and engineering industries as well as the capital and intermediate goods industries. This would help to provide the necessary inputs for the development of the national resources and the other sectors of the economy, especially agriculture.

5. Industrial strategies, policies and plans

For the African countries to make a breakthrough in their industrialization efforts, greater attention and more serious efforts must be directed towards the formulation of sound industrial strategies, policies and plans aimed at achieving African aspirations for self-reliance and self-sustaining industrialisation. The industrial strategies and policies should, in particular also aim at upsetting the present inadequate industrial structure and to bring about a greater integration between industry and the other economic sectors, particularly agriculture, thereby ensuring effective contribution by industry in the achievement of overall social and economic development. Industrial planning must be given a more concerted effort whereby the various elements, especially raw materials, manpower, technology, finance are well conceived, systematically integrated within a well defined time schedule intimately linked with the development plans of the other economic sectors. In this regard the plan must include the development of the various institutions and services to assist in the execution of the plan.

6. Industrial financing

Another major constraint in African industrial development is perhaps related to industrial financing. This has implications in the industrial structure, technology and skills development. With the relatively low allocation of national finances to industrial development, the bulk of industrial financing has been acquired from external sources together with its intimately associated constraints and conditions. National machineries to promote investment by local entrepreneurs in industry and promote, evaluate and negotiate industrial financing from external sources are not only inadequate but also nonexistent in some countries.

For Africa to achieve its industrial development objectives and target, there is an urgent need to strengthen the industrial financing machinery at the national, subregional and regional levels. Governments would need to adopt special measures to encourage and stimulate greater investment by indigenous entrepreneurs in industry. Measures also need to be adopted to channel a greater share of national funds to industry. With regards to financing from external sources, special measures would also be required to stimulate, evaluate and negotiate more equitable terms of such financial flows. In such negotiations the implications of manpower development, technology and management must be appropriately and satisfactorily reflected.

7. Industrial technology

Although several efforts are being made to develop and upgrade traditional technologies, it would take a long time before such technologies assume the principal source of technology for industrial development. For many years to come therefore African countries will continue to import foreign technology. Being a highly technical and sophisticated discipline, most countries have not yet developed the appropriate personnel, both in quantity and quality, to evaluate, select, acquire, adapt, diffuse and absorb foreign technologies. Only in very few countries have efforts been initiated towards developing the necessary institutional machinery to promote the development and upgrading of indigenous and the acquisition and regulation of foreign technologies.

In the light of the above and in order to ensure the achievement of African objectives for self-reliant and self-sustaining industrialization, it is imperative that the African countries assume control over their technological activities in their countries. This would inevitably entail the development of suitable technology, policies and plans, institutional machinery, and manpower, and environment. This should enhance the development of their technological capacities to carrying out, or at least common control over the entire spectrum of technological activities in the country, particularly those related to transnational co-operations, and joint ventures, through foreign investments, as well as the development and commercialization of indigenous technologies.

8. Industrial and technological manpower

The achievement of the industrial development objectives of Africa depends to a large extent to the development of its manpower. This of course depends on the pattern of industrial production which would help to determine the number and type of industrial skills required. With the existing inadequate industrial structure, the lack of clearly defined industrial development plans, Africa is currently suffering from a gross shortage of industrial and technological manpower, both in quantity and in quality. The existing educational system is also not conducive to the development of the type of skills required.

There is thus an urgent need for concerned action, both at the national as well as at the subregional and regional levels for the development of the required industrial manpower particularly, industrial leaders, and entrepreneurs, planners and decision-makers, industrial managers, technologists and technicians. For this to be effective it would be necessary to determine the industrial and technological manpower needs, especially in the priority industrial sectors. Such needs as well as the mechanisms and institutes for their development need to be properly planned and integrated with the national technology, industrial and economic development plans. In this regard there is a need to re-adjust the educational system to enable it to provide a more appropriate educational base from which industrial and technological skills could more easily be developed. There is also a need to adopt measures and incentive schemes to improve the social status of industrial and technological personnel.

9. Industrial institutional infrastructure

It has been frequently mentioned, in the preceding paragraphs, that the existing industrial and technological institutional infrastructure in the African countries, adequate for carrying out industrial activities. It would therefore be necessary for action to be taken in Africa, especially at the national level to develop or strengthen industrial and technological institutions, particular attention needs to be accorded to institutions dealing with the formulation and monitoring of industrial and technological policies, plans and programmes; project identification, preparation and evaluation; development or upgrading of traditional technologies; appraisal, selection, adaptation of foreign technologies; regulation of technology, industrial financing; industrial consultancy, management and other services, particularly standardization and quality control, engineering design and information; industrial and trade promotion and industrial training.

10. Industrial trade

A major limiting factor in the development of the industrial sectors is the limited size of national markets while regional industrial co-operation has been advocated on several occasions its realization has yet to be achieved. This constraint is compounded by external forces related to linkages of the African countries to their former colonial powers and the current international trade in manufacture and semi-manufacture which provides limited scope for the entry of African industrial goods into the world market. Measures and instruments to promote increased intra-African and global trade of African manufacture or semi-manufactured goods are either not existent or inadequate.

For African industrial development targets and objectives to be achieved concentrated efforts must be made at the national, regional and subregional levels in order to create a more favourable environment for the intensification of intra-African industrial trade. At the global level, the national and regional efforts must be complemented by a relaxation of the current stringent practices of world

trade in manufactures and semi-manufactures to facilitate the entry of African industrial goods into the world market. The establishment and or strengthening of Industrial Trade Associations and the intensification of export promotion activities industrial trade fairs are worth serious consideration.

III. SUGGESTIONS FOR MEASURES TO ACCELERATE INDUSTRIAL DEVELOPMENT IN AFRICA

In the light of the present low level of industrial and technological development in Africa, as reflected in the foregoing chapters, it is urgent for new approaches and measures to be adopted if a break-through has to be made to enable the maximum contribution of industry to the economic development of the continent. In addition to the suggestions and steps already taken at various forums, particularly at UNCTAD V, UNCSTD and UNIDO III, the following are proposed for the consideration of the OAU Heads of State and Government. In advancing these proposals it is recognized that the bulk of action lies with the African countries themselves, above all, at the national level and then strongly supported by actions at the regional level. International assistance, which is extremely essential, has however to be seen as support and re-enforcement of national and regional efforts.

1. Measures to be adopted at the national level

a) Industrial strategies, policies and plans

Governments need to take concerted efforts to define and implement national industrial strategies, policies and plans which are coherent with and encompassing all economic sectors. The strategies and policies to be adopted need to cover the entire range of industrial activities with well defined priorities. Special consideration needs to be given to the :

- i) the integration of industry and the other economic sectors especially agriculture;

- ii) total vertical integrated development of natural resources especially agricultural, mineral and energy resources;
- iii) development of industrial and technological manpower to cover the entire spectrum fo the various skills and expertise required at all stages of the industrial development process;
- iv) development of basic industries, particularly agro, engineering, metallurgical, capital goods, chemical and building materials industries;
- v) encouragement of small-scale, medium, and cottage industries, particularly in the context of integrated rural development schemes;
- vi) strengthening of technological capabilities of the African countries for the development, upgrading and commercialisation of indigenous technologies and the evaluation, selection, acquisition and regulation of foreign technologies;
- vii) development of a sound national industrial institutional machinery for the effective planning, execution, and monitoring and evaluation of industrial development activities, including the encouragement of greater involvement by the indegenous private sector in planning and implementing industrial development programmes and activities;
- viii) promotion of substantial and uninterrupted flow of finance both from local and external sources, to the industrial sector;
- ix) promotion of increased trade in the manufactured goods both within Africa as well as abroad.

b) Domestic industrial processing of natural resources

There is an urgent need for the African countries to base their industrial development increasingly on more rational and efficient use of their resources. Many countries in the region do not possess full and reliable information about their natural resources endowments. They have not developed the capabilities to exploit their resources to meet their national needs but have had to rely on the advice given by outsiders, often with their own interests at heart. It has therefore not been impossible for African countries to exercise control over their natural resources. Since these natural resources endowments, including mineral deposits, energy, forestry reserves, and agricultural produce provide the raw materials for industry policies, procedures and framework to foster their development should include action at the national, regional and global levels.

The following suggestions are made for implementation at the national level :

- i) in accordance with the declared strategy for self-reliance and self-sustaining industrialization, policies and long-term programmes should be developed and implemented for the effective exploitation and processing of natural resources;
- ii) national inventories of the natural, including mineral resources should where possible be prepared in order to come up with more accurate data and information to enable more effective development and implementation of a system for the assessment and monitoring of natural resources;
- iii) since the economy of most of the African countries is largely based on agriculture, each country needs to accord particular emphasis on industries which not only stimulate and expand agricultural output but also ensure the effective exploitation, processing and conservation of agricultural produce to reduce the great amount of waste being currently experienced;
- iv) the question of energy has been receiving increasing attention from the international community. About 30 % of the total world energy is consumed directly by industry. Whereas the location of industrial plants frequently depends on the availability of power, in some cases the economic utilization of power resources hinges upon the establishment of industry in their immediate vicinity. At present, the major need is for energy based primarily on conventional resources, however, increasing attention is being accorded to the development and more effective utilization of non-conventional energy resources including, in particular, solar, wind mill and bio-gas energy. National action programmes need to be developed and implemented accordingly.
- v) prospective analyses show that the African countries could derive very considerable benefits from efforts to expand the processing of minerals extracted within their territories. To this end it would seem desirable that each country systematically pursues policies to achieve a higher degree of processing and ensure the integration of these plans in their industrialization strategies. This would necessarily include measures to :
 - stimulate and facilitate the establishment of national processing plants
 - establish or strengthen national minerals offices to monitor national and international issues and to provide training to national personnel in the field of mineral processing, especially on negotiations and management; and

- ensure better terms and conditions with the transnational corporations by, for example, including a clause in contracts with TNC's providing for a systematic increase of local processing.

c) Industrial skills

The importance of developing the requisite industrial and technological manpower and skills cannot be over-emphasized. This would require a re-orientation of existing educational policies, systems and programmes as well as compensation schemes and the adoption of new approaches to industrial training. Industrial training programmes should place emphasis on science and technology and its interaction with national industrial policies on developing the skills required to cope qualitatively and quantitatively with the entire spectrum of industrial activities and on increasing the ability of the African countries to make optimal use of their scarce national and external resources.

Policies, procedures and frameworks to be adopted at the national level should be geared to create indigenous capabilities for the development of industrial and technological skills with emphasis on the following :

- a) the development of industrial leaders, entrepreneurs, policy-makers and planners to conceive, implement and monitor industrial and technological programmes in accordance with national goals and priorities as well as to negotiate technology transfer agreements;
- b) project designers to prepare, evaluate and select projects for implementation only those projects which contribute optimally to national objectives;
- c) technologists and technicians to construct and operate plants efficiently and to provide technical support services in industrial research, quality control, standardization, metrology, patent laws, engineering design, repair and maintenance, etc., as well as in the appraisal, selection, adaptation and diffusion of foreign technologies;
- d) managers, cost accountants and financial analysts to run public and private enterprises profitably and undertake business negotiations on terms and conditions of joint ventures;
- e) multi-disciplinary teams of extension workers to provide guidance and assistance to rural and small-scale enterprises in their day-to-day operations as well as in their long-term planning and programming of their operations;
- f) market and marketing experts to identify evolving domestic and international demand for industrial products and thus ensure efficient programmes of production.

In order to achieve the above, national plans and programmes should also include :

- a) the establishment of multi-purpose training institutions as well as specialized institutions to train manpower to meet the requirements of specific industrial subsectors, such as those producing building materials, chemicals, metals, leather and textiles;
- b) measures, including legislation and incentives to encourage industrial enterprises to institute programmes in which trainees gained practical experience of industrial problems;
- c) mechanisms to ensure that indigenous experts participate in the total process of project design, planning, elaboration, implementation and operation from the feasibility study phase on. Unless such mechanisms are adopted the technological development of the region would remain slow and unbalanced;
- d) measures to upgrade the social status of industrial and technological personnel;
- e) measure to secure sound and continued financial support to industrial training.

d) Industrial technology

The low level of technological development in the African countries warrants a need for concerted national action for the development of national technological capabilities and the preparation of national master technology plans and programmes, including in particular :

- a) The national institutional system for the development or upgrading and commercialization of indigenous technologies, as well as the evaluation, selection, acquisition, adaptation, absorption and regulation of foreign appropriate technologies. Such a national institutional system should include institutions dealing with :
 - technology policies and plans;
 - industrial and technological research and development;
 - standardisation, quality control and metrology;
 - regulation of technology importation;
 - commercialisation of indigenous technologies;
 - industrial and technological information;
 - industrial planning, project identification, preparation and evaluation;
 - industrial investment promotion with special emphasis on assistance to small-scale industrial entrepreneurs;
 - industrial consultancy and management;
 - industrial and engineering design including product and process adaptation

- b) The establishment of pilot production units for selected industrial goods as well as for spare parts components where controlled experiments could be carried out with a view to making appropriate changes in design and processes for the upgrading of traditional technology and adaptation of imported technology.
- c) The establishment of networks of technological information on low cost and other adapted technology from other developing countries and regions and the setting up of a system for monitoring on a continuing basis of the costs and terms and conditions for technology transfers so as to strengthen national capabilities for negotiating efficient transfers of imported technology.

e) Industrial Financing

The achievement of accelerated industrialization requires a substantial and uninterrupted flow of external resources. National action programmes should therefore give high priority to :

- a) increasing the rate of domestic savings and the channelling of a substantial share of these to the industrial sector in recognition of its central role in achieving accelerated economic development;
- b) stimulating a substantial flow of external resources to industry by taking measures to generate industrial projects;
- c) strengthening domestic capabilities for investment promotion financial negotiations and management;
- d) expanding the domestic public and private entrepreneurial base so as to ensure optimal benefits to be retained for the country from ventures involving the participation of direct foreign investment;
- e) creating and strengthening national development financial institutions so that these become the focal points for mobilizing domestic resources and securing loans on concessional terms from regional, interregional and international financial institutions.

f) Industrial trade

For the Lima target to be achieved, a fair share of the future world trade in manufactures and semi-manufactures must be secured by the developing countries. This would necessitate a greater balance between imports by the developing countries of capital goods and equipment from the developed countries and its exports of manufactured goods to the industrialized countries.

There is thus a need for steps to be taken at the national level to strengthen existing or establish new industrial trade promotion agencies as well as to adopt other measures which would facilitate the expansion of exports of national manufactured goods. There is also a need to promote direct contact between buyers and sellers of specific industrial commodities in a variety of ways, including promotion of national and international industrial fairs and exchange of industrial commodities.

2. Measures to be adopted at the regional level

African countries have realized the need and urgency to establish basic, large-scale and nationally integrated industries in the field of agro-industries, chemicals, metals, engineering and construction materials. They have, however, not succeeded to fully achieve their needs through national efforts alone, because of smallness of national markets, vis-à-vis, the minimum economic sizes, lack of finance, insufficient export opportunities for manufactures, dependence on foreign skills and technology, imported intermediate and capital goods, inadequate information on upstream processing, marketing and other economic and technical data, poor infrastructures, combination by transnational corporations in the control over finance, capital, production, technology, management, technical skills, marketing and distribution.

84. Therefore, the African countries are left and compelled with the alternative of establishing these industries jointly through industrial co-operation on bilateral, subregional and regional basis. Such joint industrial ventures will benefit African countries and accelerate industrialization in the region and could act as promoters and catalysts in the region for the adaptation, choice and transfer of technology, development of manpower, control over natural resources, creation of dynamic, self-sustained and regionally integrated industries, creation of stable conditions for the supply of basic and strategic goods, organization of consultancy and management services and investing surplus funds in dynamic sectors.

In order to achieve this objective it is imperative that the measures to be adopted should emphasize:

- (i) the strengthening of economic groupings as these become the agents for promoting subregional common markets and eventually the creation of regional programmes; and
- (ii) the establishment of industrial development zones on the basis of existing sub-regions or any group of countries willing to develop the priority sectors within the context of multi-national or joint ventures.
- (iii) the expansion and development of regional programmes and institutions designed to foster African collective self-reliance which, inter alia include:
 - sectoral development programmes particularly in regard to basic industries (food and agro-industries, forest industries, building materials and construction industries, engineering industry, basic metal industry and chemical industry) with a view to indentifying viable national and multinational projects
 - regional industrialization institutions (such as the African multi-national corporations in leading sectors) to facilitate the exchange of experience and dissemination of information and assist in the formulation of coherent and consistent industrial policies and programmes
 - regional centres for the transfer and development of industrial technology, for higher training and for industrial design and engineering, so that these become effective for a self-help in technology development
 - African industrial development funds and regional centres for engineering consulting services so as to develop facilities and capabilities for pre-investment studies particularly of multinational industries, and
 - African teaching companies within the framework of production priorities so that these become an effective basis for promoting skill-embodied technological progress.

a) Industrialization strategies and policies

At the regional and subregional levels in Africa, there is a need to harmonize national industrialization strategies and policies with the aim of:

- (i) enhancing the realization of the commitment of African countries to accelerate the industrialization process on the continent in the content of the social and economic environment of each country and not a simple importation of foreign industrialization pattern and to raise Africa's share of world industrial production to at least 2 per cent by the year 2000 in accordance with the recommendations of the Lima Declaration
- (ii) fostering African regional and subregional collective self-reliance and to strengthen intra-African industrial co-operation for the achievement of self-sustaining development and economic growth at the national and/or multinational level
- (iii) establishing multinational and regional institutions for promoting and supporting industrial development activities at the national level
- (iv) promoting greater intra-African co-operation in the expansion of African markets for its manufactured goods
- (v) creating African multinational production enterprises and industrial development zones
- (vi) adopting special measures in support of the least developed land-locked, island and most seriously affected developing countries
- (vii) harmonizing national efforts for the effective exploitation and utilization of conventional and non-conventional sources of energy
- (viii) carrying out joint efforts for the development of indigenous or the acquisition of appropriate foreign technologies and financial resources for the industrial extraction, processing and utilization of mineral and sea resources, and
- (ix) harmonizing of national investment policies and the pursuance of measures calculated to maximize the advantages of foreign investment in general and the transnational corporations in particular in terms of employment opportunities, investment finance, development of managerial and technical skills and the integrated development of industry, agriculture and the rural sector.

b) Industrial processing of natural resources

Action programmes need to be developed, at the regional level, to foster the domestic processing of natural resources. Such programmes should accord particular emphasis on:

- (i) greater utilization of indigenous resources and capabilities available in the region with a view to fostering collective self-sustained industrialization
- (ii) joint financial and material support to African multinational institutions dealing with the development of natural resources which should adopt a common position against external foreign exploitation of these resources
- (iii) intensification of co-operation among the OAU member States in identifying the quality and quantity of mineral resources in the region, in prospecting, mining, improving and processing them, in converting them to intermediate goods and finished products and in marketing them
- (iv) the establishment of regional and subregional mineral processing facilities through multinational corporations to offset economic disadvantages of processing
- (v) the promotion of joint efforts in the establishment of co-operative marketing organizations which would enable the pooling of experienced staff and an increased negotiation position towards major foreign consumers
- (vi) the promotion of joint efforts for financing and operating facilities for industrial processing of mineral resources to alleviate economic risks, overcome constraints and give impetus to the development of African country capacities in the beneficial utilization of their resources.

c) Industrial and technological skills

Actions to be undertaken at the regional level should include:

- (i) the harmonization of national policies and programmes for the development of industrial and technological manpower
- (ii) the preparation of an inventory of the industrial and technological manpower with a view to promoting its development and exchange within the region as a whole
- (iii) the establishment of regional training programmes and institutions including multinational teaching companies within the principal sectors and subsectors of production priorities and closely associated in their operational activities with universities, polytechnics and educational and other training institutions
- (vi) the establishment of linkages among institutions involved in the upgrading of technical capabilities within the region for the purpose of eliminating duplication of efforts and more importantly, of making it possible for their staff to share their experience.

d) Industrial technology

Measures to be adopted at the regional level in the area of industrial technology need to accord particular emphasis on:

- (i) the improved use of available techniques particularly in the preparation, evaluation and monitoring of technology contracts and agreements and the preparation of technology plans;
- (i) promoting collective action for negotiating and bargaining for more equitable economic relationships and acquisition of technology
- (ii) developing concrete programmes for using engineering consultancy capabilities available in the developing country
- (iii) the establishment of national and regional technological institutions and for research and development in specific sectors
- (iv) enhancing the development of national capabilities in the identification, evaluation and selection of foreign industrial technology
- (v) rationalization of inflow of foreign industrial technology, emphasizing both the regulatory and promotional functions necessary to this regard
- (vi) strengthening of the bargaining position of governmental institutions and industrial enterprises in the African countries in negotiations for the acquisition of foreign industrial technology
- (vii) the promotion and development of indigenous technological capability, including appropriate indigenous processes and techniques; technological service capability and the development of technological institutions engaged in industrial and technological research and development activities.

e) Industrial financing

At the subregional and regional levels actions to stimulate and increase industrial financing should give emphasis to:

- (i) the harmonization of national investment policies and the pursuance of measures calculated to maximize the advantages of foreign investment in general and the transnational corporations in particular in terms of employment opportunities, investment finance, development of managerial and technical skills and the integrated development of industry, agriculture and the rural sector

- (i) the establishment and strengthening of subregional and regional industrial finance institutions particularly the African Development Bank and the African Industrial Development Fund, to stimulate the establishment of multinational industrial production facilities through the mobilization of concessionary funds from global and Third World financial institutions and channelling them to African countries either directly and/or through the national industrial development banks
- (ii) mobilization of financial and real resources within the region, and redeploy them on a region-wide basis for the purpose of national, multinationals and regional industrial development particularly in the development of basic and strategic industries
- (iii) fostering specialization and complementarity so as to reduce the economic cost through the progressive integration of contiguous markets.

f) Industrial trade

There is a need to adopt measures to promote greater inter-African co-operation in the expansion of African markets for its manufactured goods. This should involve the pooling of resources and mutual support in achieving greater domestic processing of natural resources and ensuring complementarity in industrial raw material and intermediate inputs. The creation of African multinational production enterprises particularly of resource-based industries should be particularly relevant.

g) Special measures in support of the least developed, land-locked, island and most seriously affected countries

Since twenty of the 31 countries recognized as belonging to the least developed category are in Africa, emphasis needs to be placed on special measures in support of these as well as of the land-locked, island and most seriously affected developing countries. Such measures should focus on the promotion of small and medium-scale industries, with particular emphasis on industrial training and management, the utilization of natural resources by local industries; maintenance and repair of industrial equipment and agricultural machinery; the promotion of agro-based industries; and the development of engineering products and small foundries.

Emphasis also needs to be accorded to the preparation of industrial surveys, projects identification, preparation, evaluation and implementation; development of technologies to meet their special needs, particularly in food processing and alternative sources of energy; water extraction, distribution and management; the integration of agriculture and industry; the promotion of investment projects, with a view to securing external financing, and to the development and implementation of industrial training programmes.

Considering the special situation of these groups of countries, actions at the regional and global levels must also take into account the need to:

- (i) increase the degree of their participation in international economic relations;
- (ii) take explicit cognizance of the fact that the scale of resource transfer to these countries must be stepped up substantially especially to cope with the difficulties arising from imported inflation and price increases of all other factor inputs seriously affecting their industrial development;
- (iii) effect direct transfers, bypassing existing market institutions and step up the development of agriculture, and basic infrastructures as prerequisites for industrialization
- (iv) assist these groups of countries to establish a comprehensive inventory of their natural resources, increase their absorptive capacities, raise their ability for productive investment
- (v) set up industrial institutional machinery including especially feasibility study centres, technology institutes and investment promotion and pilot production centres as well as the provision of industrial extension services.

IV. MODALITIES FOR THE IMPLEMENTATION OF THE SUGGESTIONS PROPOSED IN CHAPTER III ABOVE

The industrial development problems of Africa have been the subject of exhaustive deliberations at various forums during which several suggestions for policies and actions, summarized in chapter III above, have been proposed to accelerate the pace of industrial development in Africa. The big question, which has remained unanswered has been HOW! While it is a very difficult question to answer, particularly in view of the complex international industrial structure and environment in which Africa finds itself almost defenseless, it cannot be overlooked - at the special OAU Economic Summit must address itself to it. Some suggestions have been made below to initiate a discussion on this issue.

1. African industrial development decade

An important measure to foster the achievement of the industrialization objective of Africa is the designation of the period 1980-1989 as the African Industrial Development Decade decided upon by the last OAU Summit in the context of the strategy for Africa in the development of the international strategy for the third United Nations development decade.

The purpose of the decade is to create a greater awareness in Africa of the great amount of efforts required for industrialization and to focus attention on the prerequisites for self-sustained industrial development. In this regard it would help to propagate a greater understanding among the entire community of national industrialization strategies and objectives and to create a deeper understanding of self-reliance and self-sustaining industrialization, especially in terms of meeting the basic needs. It would also help to evoke greater financial and technical support from the international community to the industrialization efforts of Africa at the national and regional levels.

81. While one decade is far too short a time for the achievement of an appreciably high level of industrial development and output it could nevertheless be used effectively for enlisting important support and for initiating and even implementing the administrative and institutional framework for accelerated industrial development of the region. In the course of the decade, therefore, the obstacles to the industrialization of the continent and the critical measures to be adopted to facilitate the achievement of the Lima target set for the continent would be defined in greater detail. The priority activities to be undertaken during the decade would thus include:

At the national level

- (i) An in-depth review of industrial and technological policies and strategies, with a view to identifying deficiencies and prescribing measures and initiating action for their improvement in accordance with national aspirations of self-reliance and self-sustaining industrialization
- (ii) A review of the national industrial and technological institutional machinery for industrial development with a view to identifying the critical institutional requirements and measures and initiating action to strengthen existing institutions of establishing new ones
- (iii) The preparation of detailed industrial and technology plans with well-defined manpower, financial, raw material and other inputs and scheduled within a time frame
- (iv) A detailed analysis of the national industrial and technological manpower needs, with a view to initiating action for their development. This would include an assessment of the existing educational system, training facilities and programmes and the contribution of industrial enterprises to industrial training

- (v) A critical analysis of the existing situation with regard to the financing of industrial and technological activities and the initiation of action for the implementation of new measures to facilitate industrial and technological financing
- (vi) This could include the establishment or strengthening of industrial investment offices and financial institutions
- (vii) The development or strengthening of industrial promotion activities including the organization of national industrial trade fairs
- (viii) Promotional activities to ensure a broad-based participation in industrial development and the development of industrial entrepreneurship. This would include the establishment and/or strengthening of industrial associations, chambers of industry, national technology committees as well as associations of engineers, industrial managers and other professional societies.

At the regional and subregional levels

- (i) The identification of critical industrial sectors and subsectors which lend themselves for the establishment of multinational industrial production enterprises. This would include the promotion of multinational industrial projects among selected countries
- (ii) The harmonization of industrial and technological policies and strategies with a view to providing a common bargaining position for the acquisition of foreign technology and finance for selected industrial projects
- (iii) The identification and strengthening of centres of excellence in the priority industrial sector to provide common services to several African countries
- (iv) Strengthening of existing and establishment of new regional technological centres as well as financial and industrial training institutes
- (v) An analysis of the industrial goods imported into Africa with a view to identifying those that lead themselves to intra-African industrial trade. This could also help to promote the production of selected ones in Africa
- (vi) The expansion of markets for African manufactured goods both within and outside Africa by, inter alia, strengthening or establishing regional industrial marketing organizations
- (vii) Promotional activities to foster intra-African co-operation. This would include the preparation of a number of inventories the important ones of which include inventories for:
 - Industrial and technological expertises
 - natural, especially mineral resources
 - industrial and technological, including R and D institutes
 - industrial information and training institutes

2. Technical and economic co-operation among the developing countries

While the fields for co-operation among the developing countries are almost unlimited and cover the entire range of industrial activities, it is essential and pragmatic to ensure a certain degree of selectivity and priority of approach. This is essential both from the point of view of resource availability and the need to secure the maximum impact of projects and programmes of industrial development.

In more concrete terms co-operation between the African countries and countries in other developing regions could involve:

- (i) production, procurement and subcontracting in connexion with spare parts and components for backward and forward integration with reference, for example, to the automobile, telecommunications, agricultural implements and equipment
- (ii) development of machine tools industry, foundry and forging technologies, mini steel and cement plants, engineering and metal-working industries, national small-scale and rural industrial development corporations and multinational industrial co-operation within the context of integrated industrial development
- (iii) promotion of greater exchange of experience and expertise
- (iv) identification of research on potential co-operation in the field of industrial production and technology transfer, identifying the instruments that will facilitate such co-operation
- (v) expansion of the concept of solidarity meetings and institutionalization of these meetings as working out practical ways and means to enable co-operation between potential donors and a selected developing country, particularly and LDC, in order to facilitate the flow of technical assistance, financial resources and joint participation, taking into consideration the prevailing conditions and specific needs of the selected countries
- (vi) the expansion of industrial and technological co-operation.

The above could be achieved through various approaches, including the following:

- (i) pooling resources and institution building to secure common objectives
- (ii) scheme to promote the utilization of equipment and supply from developing countries
- (iii) consortia and joint programming between institutions
- (iv) exchange of information, technical know-how and experience
- (v) appropriate technology and market sharing in industries
- (vi) long-term financing arrangements (financing schemes)
- (vii) multi-product industries amenable to co-production arrangements

- (viii) twinning arrangements
- (ix) greater utilization of industrial complementarity taking into account economies of scale and specialization
- (x) bringing together in working parties financial institutions and technology purveyors of developing countries to agree on the technical and financial modalities of a project
- (xi) joint ventures and/or equity participation
- (xii) repayment of investment with products
- (xiii) raw material exchange
- (xiv) loan capital
- (xv) co-management expertise in project implementation
- (xvi) training facilities and consultancy services etc.

3. Institutional arrangements

a) At the national level

As indicated in chapter I of this paper, the institutional arrangements in the African countries for industrial and technological development are not only insufficient but, in most cases, also inadequate to effectively implement the strategy and policies for self-sustained and self-reliant development. It is therefore essential to clearly define the institutional machinery for handling industrial development matters. There should, preferably, be a Ministry of Industries to co-ordinate all national industrial development efforts and to ensure that the technological, financial, physical, manpower and other inputs are properly planned and delivered in accordance with specific industrial development programmes and projects. The national industrial development institutional infrastructure should also ensure that the various activities related to industrial development are properly developed.

In order to ensure and facilitate the contribution of the entire sectors of the economy to industrial development, it may be worthwhile considering the establishment of National Committees for Industrial Development. Such Committees consisting of representatives of the Government, the business community, industrial enterprises and universities would help to bring together the various experiences at the sectoral level in order to arrive at national industrial development programmes; thus helping to bring about a greater integration of industry with the other sectors of the economy and to ensuring that programmes of technical assistance from UNIDO and other technical assistance agencies are designed to meet the practical needs and requirements of the population.

With regards to industrial technology each African country may consider the establishment of a Ministry of Technology, a Technology Agency accorded the highest possible status in the Government institutional machinery. The Ministry or Agency would be responsible for identifying the technological needs and objectives of the nation; preparing an integrated Technology Plan; proposing and distributing the financial outlays; and is accountable to the Government for the proper implementation of the Plan. It need not necessarily administer the various technology programmes, but has a voice and representation backed up by financial resources on all programmes which involve science and technology. The Government consults the Ministry or Agency on the technology aspects of the proposals, be they for establishment of industries or for

determination of import policy. The Minister for Technology or the Head of the Agency, being a member of the Government, participates in all these decisions. The process of consultation on technology matters thus becomes a matter of routine rather than remaining an ad hoc process.

b) At the regional level

At the regional and subregional levels, there is a need to strengthen the machinery, in subregional or regional organizations, for co-ordinating industrial development activities. This includes:

- (i) the identification of centres of excellence in selected industrial sectors or areas, and strengthening them to provide services to other countries within the subregion or region
- (ii) the strengthening or establishing of subregional or regional specialized or multipurpose institutions for the promotion of industrial and technological development, industrial financing and marketing and multinational industrial production enterprises
- (iii) the development of a machinery for carrying out preparatory and follow-up activities to the system of industrial consultations.

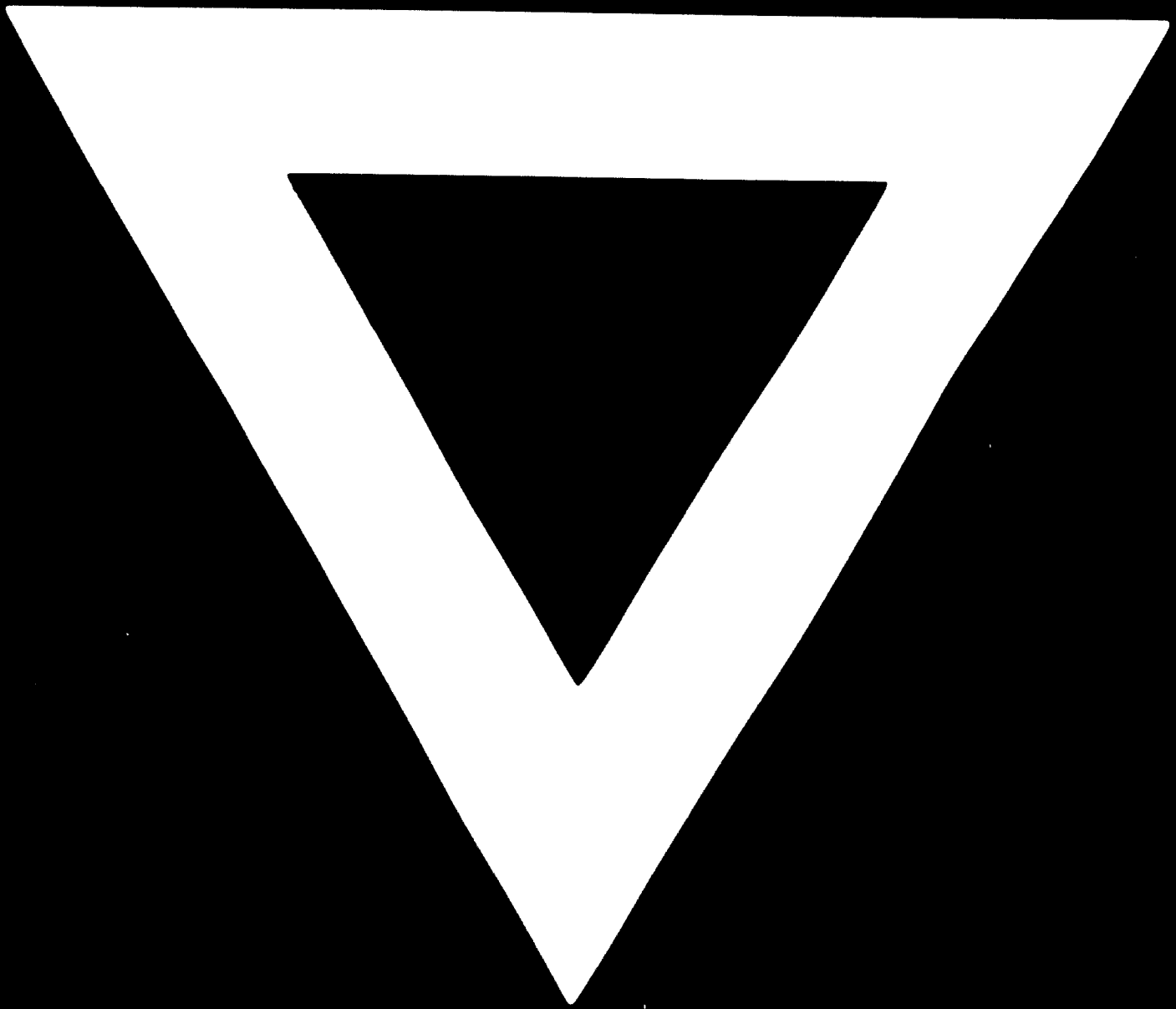
108. In connexion with the above the role of the Conference of African Ministers of Industry and its Follow-up Committee on Industrialization in Africa in guiding, reviewing and monitoring industrial development activities on the continent is essential. Additionally, the OAU secretariat and its relevant subsidiary organizations need to be strengthened in accordance with the UN General Assembly resolution, to enable them to continuously collect, analyse and provide the necessary substantive information for the CAU to take political decisions on African industrialization.

c) At the global level

At the global level, the existing co-operation between the African countries and the OAU with UNIDO and other multilateral and bilateral financial and technical organizations needs to be greatly expanded and intensified to ensure a greater flow of industrial financing and technology, under suitable terms and conditions, to the African countries. In this regard, the African countries should take greater advantage of the services offered by the UN system, especially the Special Fund for Science and Technology, UNDP resources, UNCTAD and UNIDO. With regard to UNIDO, activities and programmes of particular interest to the African countries include its:

- a) technical assistance activities
- b) development and transfer of technology programme
- c) investment promotion activities
- d) system of industrial consultations
- e) activities in support of the least developed, land-locked, island and most seriously affected countries
- f) programmes for promoting technical and economic co-operation among the developing countries
- g) industrial studies, and
- h) other special programmes such as energy.

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