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POLICY AND STRATEGY FOR INTERNALLY SELF-SUSTAINING INDUSTRIAL  
GROWTH AND DIVERSIFICATION IN THE AFRICAN REGION

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## SUMMARY OF ISSUES AND RECOMMENDATIONS

### A. Introduction

1. The industrial structure of most African economies is characterised by an in-built demand for foreign exchange maximization versus growth of indigenous resources and capital; such a structure tends to be associated with external dependence through escalating purchases of imports of required industrial inputs, capital goods, spare parts, components, technical manpower, technology, managerial personnel and services.
2. The original call by African economists for a policy of industrial development was based on the belief that there was no good reason why Africa should be content merely to export raw materials. They urged that the processing of raw materials should be carried a stage further before export, again for purposes of maximizing foreign exchange.
3. Where some mineral resources are in dynamic demand in advanced countries, which has vastly expanded foreign exchange resources and local demand for industrial products, there is a mad rush for industrial development in a manner which threatens, with a few exceptions, to be chaotic. Only lately has it begun to be accepted that industrial development means far much more than cash, revenue and foreign exchange.
4. Import substitution emerged in Africa as a reaction against exporting raw materials and re-importing them in processed or final form, which is associated with adverse terms of trade and aggravates the foreign exchange position. Still, most import substitution in Africa continues to be accompanied by increasing imports of intermediate goods and other industrial inputs, raw materials, spare parts, etc., implying inter alia, quite considerable foreign exchange costs and lack of domestic linkages, thereby making it difficult for indigenously-owned local industries to survive.
5. Even when materials and equipment are purchased locally, they are usually actually developed elsewhere and may have been imported by non-foreign-owned firms or; if produced locally, may have an extremely high import content already. Thus, the import content of development has increased, and there does not appear to have been clearly articulated sectoral priorities for allocation of capital itself with a view to reducing over-all dependence on foreign exchange by stepping up domestic production of input goods and materials and developing indigenous technology.
6. Many African Governments entertained a belief that access to loans was the principle determining successful industrial activity and used to demand that colonial governments should assist even the development of small-scale local industries such as the soap, furniture, soft drinks and brick and tile-making industries.
7. In general, many of the foreign debts contracted by African countries are in fact for amounts much greater than the sums actually received if a reverse flow of interest, dividend and principal payments, direct or indirect payments for imported technology, technical manpower, consultancy services, etc.; is taken into account.

## B. Selected major industrial policy issues

8. Till recently, the industrial policy issue was taken up by economists in terms of factor proportions, and by big business in terms of market size and profitability rather than in terms of the creation of a production structure capable of developing and utilizing domestic human and material resources.

9. Big business in Africa set out primarily to exploit the raw materials and the expanding markets for consumer goods. Meanwhile, the essence of African industrial policy was to provide foreign private investors with conditions promoting stability and with strong financial incentives to identify and exploit these market opportunities. However, nationals are often denied such privileges; and this pattern has remained largely unchanged in most African countries (except in the case of joint ventures and African enterprises specializing in services and light industry).

10. A preference for products designed and developed abroad encourages dependence on complicated imported technology rather than indigenous innovation, and therefore tends to reinforce the position of foreign versus national capital. A preference for things foreign has led to the emergence of exaggerated capacity in selected branches, resulting in superfluous consumption (among the elite), especially of luxury goods coming in various unnecessary brands and fashions, coupled with limited possibilities for output growth, diversification and employment expansion.

11. It has been recommended that some well-endowed developing countries should be encouraged to manufacture, for export, intermediate or end-products from specific industrial raw materials. This recommendation is now enshrined in generalized systems of preference in general and in the Lome Convention in particular.

12. Lack of indigenous research on product innovation appropriate to the domestic mass market and environment, which could bring industrial production within the reach of local self-help, is clearly related to excessive dependence on private foreign direct investment and foreign trade. Research currently being conducted in Africa is relatively poor (compared to other regions), inconsistent and carried out at cross-purposes; moreover, it does not lead to real innovations responding to the most burning problems of the African countries.

13. Recent policy adjustments have led to the "internalization of production", with which transnationals are now associated and may or may not be related to manufacturing for export along the lines described under paragraph 11 above. Such continued excessive dependence on foreign enterprise has led to types of capital formation which, besides inhibiting the growth potential for domestic self-help, widens the channel by which national resources flow outside the country in the form of profits. It also discourages indigenous experimentation in actual production, which is the basis for the adaptation and development of industrial technology and skills.

14. To some extent, the adoption of labour-saving technologies and the inequitable participation of "basic goods", in production and distribution reflect a failure of public policy on the part of African Governments, especially in regard to foreign enterprise. It is largely the absence of realistic national policies with respect to foreign investment which has, inter alia, opened the way for foreign take-overs and hence has weakened indigenous enterprise and economic autonomy.
15. Foreign-owned enterprises are often biased against projects oriented towards expanding the domestic market and are generally in favour of export-oriented investment which, if expanded substantially, tends to create imbalances in the national economy as it draws the material and manpower resources away from the poorer sectors. The problem is worse if the capacity created for export cannot rationally be readapted for domestic purposes if access to external markets is hindered.
16. The implications of the Lima Declaration itself still need to be fully spelt out, especially as it relates to paragraphs 6, 8, 9 and 15 above, and to make meaningful the international negotiations which UNIDO seems to be inclined to regard as the core meaning of the Lima Declaration and Plan of Action as it pertains to the different regions and the need for self-reliance.
17. While it is generally accepted that engineering industries are at the heart of the process for accelerated structural change, regrettably of all the developing regions, Africa has the lowest ratio of engineering production to engineering imports, and its engineering base does not seem to be growing.
18. Many countries in the African region are notoriously short of skills which are vital for designing, initiating and sustaining development and economic processes. A lack of engineers to adapt industrial processes is usually a handicap in attempts to readapt or to even rebuild imported machines for domestic purposes.
19. Although private foreign corporations are aware that locally available manpower is less technically skilled than it is in developed countries, they manage only to provide superficial training, which, in spite of its immediate positive employment effects, may nevertheless have negative effects in the long-run since this kind of training does not offer any potential for the upgrading and diversification of skills for integrated development in such branches as metals, chemicals, engineering, agro-based industries and building materials industries.
20. Inadequate transport and communication facilities, especially in rural areas, has proved to be a major handicap in the development of national and intra-African specialization and trade for purposes of fostering internally self-sustaining industrialization.
21. Many African countries lack the institutional and organizational structure that reflects interdependence of economic activities. Thus they can hardly develop the determination to carry through any fundamental measures on the necessary scale.
22. Economic co-operation ventures, which could have become a force for complementarity in Africa, have been oriented primarily to trade facilitation. This approach is based on models borrowed from advanced countries where there is no problem regarding integrated economic structure in the first place.

23. By and large, a dangerous stage has been set in Africa whereby to get access to modern industrial technology, expertise, industrial and even raw materials, etc. a country must associate itself with foreign capital and/or go through the medium of foreign trade and foreign enterprise. With such a production framework, the "basic needs" of the masses can be achieved only at the expense of internally self-sustaining growth. This creates a wider base for increasing dependence on external trade and probably leads to serious balance of payments deficits.

C. Some guidelines and recommendations for a self-reliance strategy

24. Choice of industrial objectives: In order to be effective, an over-all industrialization strategy must be explicitly selective and aim at the attainment of concrete and specific integrated objectives, such as employment expansion, reducing mass poverty, installing basic and key industries, avoiding industrial congestion, minimizing waste of natural resources, avoiding environmental degradation, etc., and developing the institutional capacity to react quickly to changing international conditions.

25. The principal element to be derived from broad development objectives should be the installation of an internally sustainable industrial development process, and this implies the development of the industrial capability of the indigenous population for purposes of initiating and sustaining the industrialization process.

26. Priority sectors and self-reliance in industrial inputs: Industrialization strategies must aim at creating and developing a domestic industrial production structure capable of developing, utilizing and converting domestic human and material resources into intermediate inputs and final consumer and capital goods without its being always necessary to go through foreign trade or foreign enterprise. Indeed, Africa needs more aid, foreign investment and trade; but certainly on better terms than at present.

27. Each African country should, either individually or together with other countries, try to plan for establishment and development of basic industries or complexes where various sectors and projects can buy and sell their outputs and inputs to each other. Priority industrial branches within the framework of the Lima Declaration include engineering and metals industries (foundries and forges), chemicals, construction and agro-allied and small-scale industries.

28. The policy prescription for the satisfaction of "basic needs" (e.g. stable and growing income level, better schools, medical facilities, nutrition, housing, an adequate supply of clean water, cheap transport facilities, etc.) can be firmly installed only by developing a solid domestic industrial foundation which is capable of regenerating the variety of industrial inputs required for the internal production and distribution of basic goods and services on a permanent basis. Such inputs include building materials, water pipes and pumps, other metal and engineering products, machine tools, pharmaceuticals, fertilizers, pesticides, paper, medical and school equipment, and personnel who are technically qualified to repair and maintain all the physical inputs.

29. Utilization of natural resources: One prerequisite, for local utilization of domestic resources is to foster domestic capabilities in possible technological innovations and to expand the base of engineering industries as a measure for acquiring and upgrading dynamic indigenous skills and capability to sustain the continuous technological process involved in the exploitation and utilization of resources.

30. Skilled manpower and technology: Skills and technology cannot develop in a vacuum; they need appropriate industrial and engineering activity as the infrastructural agent and link. In making efforts toward self-reliance in industrial technology and expertise, special attention has to be directed towards the development of local capability in engineering and product design.

31. In general, priority should be given to engineering production, which is capable of making rapid and broad progress in industrial technology and skills even if it is necessary to start from a very modest base. Engineering industries would facilitate economic diversification and market expansion as they penetrate other economic branches such as metals, chemicals, agro-industries, building and construction, transport and commerce, and stimulate the growth of forward, backward and lateral linkages within the entire economy.

32. Beginning with repair services, probably based on various existing service workshops associated with railways, ports, public works and industrial plants, there is always a certain minimum of engineering activity within a country's reach which can gradually be upgraded to participate in the manufacturing of spare parts and components and other industrial inputs, leading to the subsequent development of machine tools and equipment.

33. Labour is usually available and capable of being trained to enable African countries, individually or jointly, to aim at manufacturing such complementary and compatible machine tools as can be used, in the long-run, to rebuild or to replace certain machines.

34. Action to develop local capabilities (with assistance from UNIDO, UNESCO, UNCTAD and ILO) in line with long-term industrial plans should also include project programmers, designers, analysts, market researchers, marketing experts, management consultants, finance experts, etc.

35. The African region should make maximum use of its existing scientific and technological potential and call on experts from abroad only when really necessary. The cost of foreign expertise can be reduced by making at least partial use of experts from developing countries.

36. While the development of many more skills at all levels of the formal educational system should be encouraged, greater emphasis should be placed on informal education, such as on-the-job training and apprenticeship. Every industrial activity should have a training component. Adult education classes and the mass media could also be used to provide persons otherwise outside the educational system, (such as small-scale entrepreneurs) with simple, practical technical skills.

37. Local engineers, technicians, mechanics and master craftsmen could be organized into industrial guilds or associations so they can share their experiences in everyday practical industrial problem-solving, through seminars, publications, refresher courses and informal contact.

38. An effective technology policy requires first and foremost an adequate institutional structure which can systematically examine the technical options involved in the choice, adaptation and development of the technology appropriate for each case.

39. Market development: The output of the priority industrial sectors should contribute directly or indirectly to the improvement of the standard of living of the masses, particularly in the rural sectors, by satisfying their "basic needs" and to the provision of cheap inputs for rural-based productivity, thus bringing large sections of the population into the "modern" economy.

40. To keep pace with the ever-changing requirements of technology and divergent movements of trade and capital, the essential requirement of African countries is a well-considered selection of industrial products and processes, such as those offering the greatest potential domestic production linkages and other important spill-over and training effects.

41. On the whole, large countries have greater possibilities than small countries for choosing a type of link with foreign enterprise consistent with suitably selected products and with the objective of growth. Thus, such countries as Japan, India and Brazil, have chosen to restrict the foreign-owned enterprise and rely mainly on the attraction of their internal markets to extract favourable collaboration agreements from foreigners. Similarly, in the case of Africa, subregional groupings could make it possible to use access to their internal markets as an important bargaining counter in negotiations over the terms of entry of foreign based enterprise. Subregional and regional co-operation could thus supplement domestic markets for industrial goods.

42. Agriculture and integrated rural development: There is a need for research and development in the field of industrial support for agriculture, on such inputs as low-cost prototypes, agricultural machinery and fertilizers adapted to the specific needs of the soil, climate, crops, etc.

43. Integrated rural development needs a policy network linked with improved technical skills, rural infrastructure, storage, transport, distribution and marketing.

44. Attention must also be given to the development of agro-industries and small-scale rural processing industries, with emphasis on skills for the operation, maintenance and repair of equipment in such industries, the utilization of agricultural by-products, research assistance, national nutritional policies and organization tailored for the transformation of the rural traditional subsector.

45. Appropriate changes in the social, political and institutional structure must be carefully studied and applied. Institutional activities, especially in the poorest rural sectors, must aim at increasing the capability of all the population groups, concerned, so they can do what they have to do.



46. Transport: The manufacture of transport and communication equipment should be promoted in accordance with the requirements of the national economy and matched by the development of complementary (engineering, etc.) services indispensable for the efficient use of such equipment.

D. Mechanics of policy-making, planning and implementation

47. Finance for industry: In regard to the implementation of strategic priority industrial projects requiring large amounts of finance and to supplement resources available at national levels, it may be necessary for the African region to establish multinational industrial investment banks to undertake the organization of financial packages beyond the capability of national financial institutions.

48. African countries should also take practical steps to establish a collective industrial fund for financing multinational projects of social significance that would supplement national development programmes and to lay down a policy of long-term loans for financing the growth of the African economy.

49. Research and information: Technological research institutes must establish regular working relations with industry so that research can continuously impart to the industrialization process findings in keeping with the objectives of the relevant economic and social development plans.

50. Information on production techniques, product specifications and sources of input supplies should be provided to indigenous enterprises, especially in small-scale, medium and rural industries. Technical information services also might, initially at least, be directed to industries afforded priority in the national plan.

51. A rational development strategy must include an in-built, effective information programme so that those concerned will have a clear notion of the goals and objectives incorporated in the strategy and also some assurance of complementary action should they in fact behave as the strategy indicates they should, thereby avoiding contradictions between targets and between different policy instruments.

52. Attention must be given to the design of institutions to promote competence in information utilization by individuals and agencies. African countries will also have to acquire the habit of exchanging industrial knowledge among themselves, which will add to their own stock of information and counter the practice of sending information to the advanced countries and having to buy it back at higher costs.

53. Organization at plant level: Before industrial plants commence operations, steps must be taken for training the staff and seeing to it that spare parts will be available, thus making it possible at least, to avoid an operational maintenance or repair crisis that necessitates a shutdown.

54. Through re-organization of production and better training and supervision, substantial adaptation of equipment can be effected at the plant level. Whatever the possibilities for technological adaptation, their realization requires knowledge of engineering and the other technical options available and the motivation on the part of managers to undertake such adaptation. Managers should also consider subcontracting in cases where it will promote capacity utilization and efficiency.

55. Reorganization of Ministries of Industry: It is important that every African country should reorganize and restaff a Ministry of Industry, industrial parastatals and other industrial institutions with a bias towards specialization and complementarity among industrial projects. The Ministry should in particular, pursue a policy of maintaining a harmonious operational relationship with the Ministries of Planning, Agriculture, Education, Transport, Natural Resources, Health, Commerce and Labour and with other governmental organs, taking into account the complementarities of their mutually supportive activities.

56. Government structure for industry: Priority must be given to a form of governmental organization which is consistent with a strategy of rural industrialization and includes a series of programmes and activities that are aimed at increasing both agricultural output and employment and the output and employment of agro-industries and other compatible activities and services. The establishment of basic industries in metals, engineering, chemicals and building materials must also be geared to fulfilling this goal.

57. Regional and subregional co-operation: The objective and mode of co-operation in developing Africa should involve the creation and utilization of new productive capacity.

58. The significance of trade among participating States involving goods and services for use as further inputs for other industries or for consumption should depend not merely on the absolute volume or value traded but also on the composition of that trade.

59. Co-operation with development countries: Mechanisms and institutions for specialization in industry should be made available through long-term agreements at the subregional, regional and inter-regional levels. In addition transnationals should be controlled and policies co-ordinated at the subregional, regional and inter-regional levels in respect of foreign private investment. Co-operation must aim at concrete results in each case and should not be sought merely as a matter of abstract faith.

60. Co-operation with developed countries: African countries must strive in earnest to prepare their position clearly, individually and collectively in advance, lest the results of the redeployment of industry on the basis of the Lima Declaration should lead to the peddling of non-dynamic industrial units which neither fit in with the strategy for self-sustained industrialization nor increase the potential for domestic resource utilization, skill development and diversification.

61. The public sector should grow simultaneously with the economy lest foreign capital discourage the development of rival indigenous technologies and entrepreneurship.

62. Mechanisms and institutions established at national levels to stimulate co-operation between African enterprises and enterprises in advanced countries (e.g. through joint ventures, subcontracting or licensing) would help to enable African countries to cease being passive receivers of foreign technology and know-how and to engage in adaptation and research on their own initiative.

## INTRODUCTION

63. The principal policy objective of economic development in most countries in the African region over the last decade has been the maximization of foreign exchange earnings to finance consumption and capital accumulation for development in general and industrialization in particular. On the other hand, industrial development centred around the accumulation of capital derived from domestic, State and private investment supplemented by foreign investment, primarily foreign private investment. The social objectives on the basis of which industrial projects were evaluated by policy makers were to earn foreign exchange and create employment in general without regard to its qualitative nature.

64. Resources for use by the State in its investment programmes were derived from public savings, and aid and grants from advanced countries. State investment was in most cases directed to the development of transport and communications, energy, water supply, administration, defence and social and welfare services, such as those concerned with health and education and to the facilitation of distribution and the provision of support services for agricultural production. With notable exceptions, these investments were not directly related to industrial production but provided infrastructural support for domestic private and foreign investment and export crops. Other measures taken by the State included the protection of private investment and the supply of generalized incentives to foster it.

65. The financial sources for private domestic investment was the private savings of the indigenous population, which did not have adequate access to foreign and sometimes even domestic money markets. With limited education, assets and entrepreneurial experience, most emergent individual African entrepreneurs had a tendency to shun industrial production and to concentrate their investment in the less risky sectors of commerce, distribution and, real estate. Moreover, most indigenous enterprises were family establishments with little corporate life and were therefore incapable of long-term investments, risky experimentation, innovation and research and development. Their capacity for financial planning and the acquisition of information on product and factor markets was also highly limited. Frequently, they could not stand up against the competitive power of the subsidiaries of the transnational corporations, which are the main foreign investors in industry. State support of indigenous industrialists has tended to weld them to transnationals through joint ventures and to concentrate economic power in the hands of the few.

66. The capital accumulated from foreign investment was derived partly from domestic borrowings and partly from capital imports from the industrial countries. Since the State undertook only limited direct investment in productive sectors and indigenous industrial entrepreneurs were relatively very weak and had insignificant capability and knowledge in activities such as management, business finance and factor and product markets, the main force for capital accumulation in industry was therefore foreign private capital. The need for a flow of real resources such as skills, capital and technology, from advanced countries meant that incentives to promote such a flow where industrialization was concerned. The structure and sectoral distribution of capital formation was therefore determined largely by the profit-maximization objectives of foreign industrial investors. The principal objective of such investment was to realize the maximum profit in the shortest possible time and to re-invest it elsewhere in the world and this tended to raise the prices of industrial goods and to redistribute incomes. Investment objectives were on the one hand to ensure a continuous supply of raw materials to the parent companies in advanced countries, and on the other, maximize to exports of the parent companies to the African countries. The maximization of imports from parent companies was accomplished through internal procurement arrangements made by the subsidiaries, which were particularly concerned with carving out a place for themselves on the local market for manufactures. The main short-term productive investment sectors were domestic import substitution of consumer goods and processing for exports.

67. The policy objectives of capital accumulation to save foreign exchange and generate employment naturally led to recommendations aimed at simple processing for export and were also often tied to an import substitution pattern of development, which applied mainly to consumer goods, and this invariably produced an ever-expanding need for additional foreign exchange earnings to finance imports of industrial inputs, expertise, etc., without improving domestic industrial linkages, which could, in time, have internalized the use of domestic resources. In the main, the industrial structure of most, if not all, African economies is characterized by an in-built demand for foreign exchange as opposed to indigenous resources and capital.

68. Concentration of import-substitution strategy on final consumer goods has been partly due to the limited size of quantitative domestic demand in individual African countries, apparent technological simplicity in production and the short-term nature of such investment. Such policies and strategies have saved some foreign exchange, generated some industrial employment and laid some type of industrial base. On the whole, however, the strategy tends to increase external dependence as reflected in deficits in balances of payments and indebtedness brought about by escalating purchases of capital goods required, industrial inputs, spare parts and components, technical manpower, technology, managerial personnel and services. Furthermore, the strategy tended to discourage indigenous technological experimentation in actual production, which is the basis for the development and adaptation of industrial technology.

69. A strategy aimed at the simple processing of raw materials and the local manufacture of isolated components and parts for export is a variant of the more familiar one whereby foreign companies try to maximize their local sales by establishing plants often as "joint ventures" merely to assemble imported components into machinery and equipment such as cars for the local market in the hope that somehow industrial growth will automatically progress backwards. There is nothing fundamentally uneconomic in exporting semi-processed raw

materials to markets of the advanced countries in order to earn foreign exchange. This approach is enshrined, for example, in the export trade provisions of the Lome Convention. A large number of advanced countries no doubt export crude, unprocessed materials as it is frequently advantageous to do so. It is also frequently profitable to undertake upstream processing in order to maximize value added and/or employment. The capacity to do this, however, depends partly on the size of the domestic supply of raw materials, the cost of upstream processing and the domestic intermediate demand and the access of intermediate products to foreign markets. Capability for upstream processing often requires an integrated industrial production structure in terms of capital, skills and technology. With falling terms of trade between manufactures and commodity exports, the ability of a developing country to import the complementary equipment and other inputs used in upstream processing declines over time.

70. While import substitution and processing for export were initiated as instruments for saving and earning foreign exchange for capital formation, the import content of development has increased, and there do not appear to have been clearly articulated sectoral preferences for the allocation of capital to reduce over-all economic dependence on foreign exchange the domestic production of input goods and materials and the domestic development of technology.

71. The third and newest strategy prescription for the economic and industrial development of developing regions identifies new policy objectives as being the satisfaction of "basic needs", where such needs include continuous and stable employment or self-employment, better schools and medical facilities and a rising level of income. This set of goals is based on the premise that efforts merely to increase GDP in developing countries have been accompanied by mass poverty, malnutrition, squalor and unemployment. The new objectives are therefore highly laudable and constitute the permanent goals of economic development which politicians frequently summarize as being the elimination of poverty, ignorance and disease.

72. The existing industrial structures in most of Africa were devised to produce "modern" goods for superfluous consumption and are not intended to satisfy the "basic needs" of the majority of people, especially the rural poor. Also, the criterion for development appraisal is conventionally per capita income, often without reference to policies to impose the dispersal of development benefits by region and population groups. Such reliance on per capita growth alone is simply to acquiesce in the power of the elite to convert incomes into luxuries, such as luxury housing and cars and large landholdings, which cannot readily be reconverted into "basic needs", such as low-cost housing, cheap transport, rural feeder roads, hospitals, schools, popular shops, sanitation facilities, electricity, water supply, food and other essential goods and services. The satisfaction of such basic needs implies the existence of a productive structure which is itself consistent with the needs it is intended to serve. This means that its capacity must be broadened and its functioning oriented towards producing and utilizing such inputs as building materials, pharmaceuticals, water pipes and pumps and machine tools and other metal and engineering products, medical and school equipment, paper, fertilizers and pesticides. It must also employ technically qualified personnel to repair and maintain all these physical inputs. Unless progress towards the implementation of such a

strategy can be discerned, "satisfaction of basic needs" per se will only be achieved at the expense of internally self-sustaining growth as it will only widen the base for more dependency on external trade or even balance of payments deficits, inasmuch as the fulfilment of "basic needs" does not directly earn foreign exchange. It is thus important to develop a solid domestic industrial foundation which is capable of regenerating the variety of inputs required for internal production and distribution of basic goods and services on a permanent basis.

73. It is clear that there was no consistent relationship or point of integration between programmes for creating real capital and those for developing manpower infrastructure and social investment in such fields as education and health since social and infrastructural investment, for example, generated more consumption than production and educated personnel who could not be absorbed in any production sector apart from the service sector.

74. The reliance on capital accumulation was based on the assumption that once the quantum of fixed capital investment reached a very high level, industrialization would take off automatically, and this, of course, did not occur. As import content increased, export of manufactures did not increase substantially while external dependence on managerial and technical skills and on foreign capital and technology continued to increase at the same time.

75. What is called for are industrialization strategies to develop a domestic industrial production structure capable of developing, utilizing and converting domestic human and material resources into intermediate inputs and final consumer and equipment goods without having always to go through foreign trade. Such industrialization should be adequately integrated internally in order to generate the social benefits of forward and backward linkages through increased domestic multiplier. Only the implementation of such strategies, which constitute the foundation of internally self-sustaining industrialization, can guarantee increased capability for the satisfying basic needs with economic and political dignity.

#### I. BACKGROUND AND GUIDELINES FOR AN INDUSTRIAL SELF-RELIANCE STRATEGY

76. It is impossible to envisage a standard development policy and strategy for all of Africa, because there are many differences between the countries in the region. Nevertheless, it is possible to define the essential features of an industrialization policy and strategy which would be broadly applicable although their practical implications would depend on the particular conditions in each country and on the decisions of its Governments.

A. Recommended industrial development objectives

77. The pace and pattern of industrial development depends crucially on industrial objectives which must be derived from over-all economic development goals. The kind of economic and social development objectives now established by African States is based on: (i) deliberate promotion of an increasing measure of self-reliance; (ii) the installation of capacity for self-sustaining growth and (iii) diversification, generally through planned action.

78. The principal elements in a strategy designed to achieve these objectives would include increased substitution of domestic for imported factor inputs in terms of both current and potential economic activities; measures to improve the quality and increase the supply of such factors to permit growth and diversification to meet the needs of a larger population with the highest possible standard of living; the installation of basic, key or strategic industries and the deliberate establishment of economic and structural links within the industrial sector itself and between the industrial sector and other sectors <sup>1/</sup> the restructuring of domestic markets through the transformation of agriculture; the development of rural areas and diminution or removal of social, economic, technological and political discontinuities in national structure; the regulation of imported technology and the encouragement of local development of technology; the establishment of a resources market and the enlargement of markets through close economic co-operation or integration among African States and, finally, the restructuring of trade between Africa and the outside world. Above all, the adoption of such a strategy would mean that the formulation of national strategies and policies would derive mainly from African perception of African needs and potentialities and that the direction and pace of social and economic transformation would depend on local capacity to conceive, design, install and manage productive enterprises successfully. <sup>2/</sup>

79. The main industrial development objectives derivable from these broad development objectives need no longer include the earning of foreign exchange and the creation of employment, important as these no doubt are. The main objective rather be the installation of an internally sustainable industrial development process. The principal requirement for installing an internally self-sustainable industrial development process and for effecting the required social transformation is the development of the industrial capability of the indigenous population to initiate and sustain that industrialization process.

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<sup>1/</sup> Manufacturing in the African region is at present heavily concentrated in the area of light industry and especially in the food and beverage subsector which in 1971 produced about 42 per cent of gross output. The food processing sector, together with the textile/clothing sector produce more than 60 per cent of the output of African manufactures (see The implication of raising Africa's share in world industrial production to 2 per cent by the year 2000 (CMI.3/INR/TP/3)).

<sup>2/</sup> Revised framework of principles for the implementation of the New International Economic Order in Africa 1976-1981-1986 (E/CN.14/ECO/90/Rev.1).

The development of this capability in turn depends on a number of factors, including the continuous development and utilization of local raw materials and human resources, the installation of an appropriate industrial production structure capable of producing industrial inputs, generating industrial technology, widening internal markets for manufactures, facilitating the development of technical indigenous skills, strengthening the capability of indigenous State and private entrepreneurship relying more and more both on internal industrial finance and on the production of goods and services which directly or indirectly and in both the medium and the long-term will satisfy the basic needs of the population.

80. The principal elements of such an industrial strategy would therefore include the choice of industrial priority sectors whose development over time is consistent and also capable of generating the development of indigenous technological capability. The growth of indigenous skills generates investment funds which, to a greater and greater extent, are derived from domestic sources and widens the output mix supported by secondary strategies for export expansion to secure the required resources.

#### B. Integrated industrial development and production of industrial inputs

81. While import-substitution in Africa has mainly focussed on local production of consumer goods, there has been little domestic production of industrial inputs. The use of imported technologies by foreign subsidiaries and even by State-owned enterprises, is often associated with the importation of intermediate goods and other industrial inputs, raw materials, spare parts and components, implying, inter alia, considerable foreign exchange costs and lack of domestic linkages.

82. To be sure, Africa hosts a large number of foreign-owned enterprises which insist on buying their raw materials, intermediate goods and components and parts from an affiliate in another country so that the profits of the transnational system to which they belong may be increased. Many developing countries have had their balance of payments problem exacerbated through the practice of transfer pricing, whereby the foreign-owned subsidiary overpays its parent company for materials, etc. As long as transfer pricing is used as a means of profit remission foreign investors will, moreover, be motivated to continue importing raw materials and other inputs rather than producing them locally, thereby making it difficult for independently-owned local industrial units to survive if they can get started at all. However, some manufacturing subsidiaries of the transnational corporations do in fact purchase a high proportion of materials and equipment locally. It is tempting to conclude that a high proportion of the total value of these subsidiaries represents value-added within the African countries in which they are located. However, this conclusion is not valid. The fallacy lies in the fact that materials and equipment purchased locally are actually developed elsewhere and may have been imported by a non-foreign owned firm and that if they were produced locally, they may have an extremely high import content.



83. The failure to increase the volume of domestically produced inputs used, means a failure to diversify both industrial production and skills. The same problem perverts import-substitution policies, leading to the creation of high cost industries and weakening the advantages of the African region comparing with those of other regions still further.

84. Unintegrated programmes for the production of industrial inputs would of course lead to higher import content of industrialization, increased requirements for foreign exchange, limited development and utilization of domestic resources and greater external dependence where skills and technology are concerned.

85. Integrated industrialization requires systematically planned inter-industry investment programmes, targets and projects aimed at the realization of maximum direct and indirect output through mutual feedback and forward linkages. Such investment policies, programmes, targets and projects are designed deliberately to establish technical and economic links among raw materials so that the extraction of raw materials is related to exportation and local processing <sup>3/</sup> for the production of basic products such as basic chemicals, building materials, engineering products and metals. <sup>4/</sup> The extractive, processing and equipment and component building subsectors would be supported by the upgrading of existing production capacities and the creation of new ones. Inter-industry trade also requires a deliberate policy for integrating large-, medium- and small-scale industries, especially in rural areas, through subcontracting arrangements and technical assistance.

86. It is quite clear that generalized industrial integration at the national level is determined by a large number of factors, the principal ones being the matching of the elasticity of supply and the demand mix and an adequate flow of investment funds. While it is advisable to strive towards institutionally-determined forward and backward linkages in industry at the global level, the creation of such linkages is likely to encounter difficulties in economies characterized by highly unequal income distribution, an underdeveloped rural sector and a foreign-determined consumer preference system. Within a larger context, it may therefore be more practical to start with inter-plant integration based on a set of carefully selected products. The advantage of this approach is that at this level it is possible to reduce uncertainty by securing more accurate information on demand and supply changes, make more reliable demand and supply projections and isolate the factors which increase the effectiveness of the linkages. Thus, what would emerge eventually would be a series

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<sup>3/</sup> The presence of abundant natural resources in the absence of large internal markets has a tendency to decrease the advantages of processing since the cost of earning foreign exchange is much lower when unprocessed raw materials are exported. (See for example, Hollis B. Chenery and Lance Taylor, "Development patterns: Among countries over time", Review of Economics and Statistics, vol. L, No. 4, 1968, pp. 391-416).

<sup>4/</sup> Africa's share in world heavy manufacturing output (chemicals, engineering, metals, etc.) as reflected in 1971 data is miniscule, being just over 25 per cent (see document no. CMI.3/INR/TF/3 (op. cit.)).

of integrated inter-plant complexes. <sup>5/</sup>

87. The concept of linkages relates to the creation of an opportunity for one industry to invest made possible by another while the concept of integrated industries has been used in economic co-operation to refer to industries which generate trade between countries. Equally important is the type of project or industry which serve as a link between two apparently different types of industry. Such industries include the engineering products and machine tools industry which utilizes the output of metal industries in their own reproduction and in the production of tools, implements and capital goods. <sup>6/</sup> These products are to an industrial regime what the seed is to an agricultural economy and therefore have to be included in the package for industrial investment programmes for the internalization of the industrialization process. Indeed, they engender the capability for imbedding technology in inputs and converting domestic savings into equipment without having to go through foreign trade to acquire foreign exchange.

### C. Industrial manpower and expertise

88. Many countries in the African region are notoriously short of skills which are critically required in designing, initiating and sustaining the industrial development process which seems that, as indicated earlier, they are increasingly dependent on imported technical manpower for these purposes. While the immediate employment effect may be positive, the long-term effect may be negative since a policy of importing technical manpower does not offer adequate opportunity for upgrading and diversifying indigenous capability for self-sustainable industrial development to say nothing of the large sums of foreign exchange which flow out of such countries as in the form of factor incomes paid for the services offered by imported manpower.

89. The implementation of self-sustainable industrial development calls for the conscious development of domestic industrial skills and expertise in the various fields of industrial activities. Such expertise includes managers, technicians, market researchers, market and marketing specialists for industrial goods, specialists in industrial design, industrial and material engineers, experts in finance and project formulation and development personnel.

<sup>5/</sup> Lack of systematic integration among firms and a shortage of raw materials and spare parts, which are generally not produced domestically, coupled with persistent balance of payments problems restricts the growth and competitiveness of manufacturing export industries in developing countries, see, for example, Atsushi Marakami "Export base and Infant Export Industries", Kobe University Economic Review, No. 12, 1965, pp. 94-96.

<sup>6/</sup> A recent study by the Economic Commission for Europe concluded that the African region's share in the world output of metals and engineering products remained unchanged at 0.2 per cent in 15 years between 1955 and 1970, and that the share of metals and engineering products in total industrial production during this period appears to have declined. Of all developing regions Africa had the lowest ratio of engineering production to engineering imports. - See ECE: Role and place of engineering industries in national and world economies (ECE/ENGIN/3/Vol. I). (E.74.II/Mim 7).

90. While there is still a need for foreign experts, and especially for experts from other developing regions who have had practical experience in dealing with problems similar to those encountered in Africa, there is a greater need for a coherent programme aimed at the formal and informal development of skills in relation to industrialization. Policy-makers have recognized that the educational system must be restructured to make it relevant and appropriate to economic and industrial development needs for suitably qualified Africans for development purposes. However, what is not frequently clearly understood is that the restructuring of the educational system, while necessary, is not sufficient for the development of appropriate skills in the African region. The restructuring of the educational system should be preceded by or go hand in hand with the restructuring of national investment programmes, particularly in the industrial sector, for without such change in the pattern of public and private investment, a restructured educational system would only alter the composition of unemployment. The development of industrial technical skills and skilled manpower is determined qualitatively by the nature of the domestic employment demand while the quality of labour employment demand is determined by the composition of the physical and social capital stock inherited by the industrial sector and by the current and future sectoral structure and distribution of investment. The past and current structure of foreign investment, which is the dominant source of productive capital formation in most African countries, still reflects colonial development patterns in that the focus is primarily on extractive industries, with some emphasis on agro-industries and more recently on import-substitution activities and the assembly of transport equipment from imported components. None of these activities develop technical skills to a significant degree. Similarly, the composition of investment by the State and domestic private entrepreneurs has changed only very little, and the composition of investment by the State in infrastructures and social services has succeeded only in increasing the demand for social scientists, lawyers, doctors and educators, but not for mechanical and chemical engineers, material surveyors, financial experts, etc.

91. Since the most important means of skill development is on-the-job training or "learning by doing" on the job, the development of appropriate skills will be determined by the allocation of new industrial investment to those industrial sectors which generate a demand for industrial labour, and which promote the acquisition of the skills they require. The engineering, chemical and metal industries are, by their very nature, the most dynamic industrial sectors in a growing economy because they supply inputs to agriculture, transport and communications and construction as well as to themselves and the rest of the economy. No practical skills can be developed in these fields without the growth of engineering, chemical and metal industries.

#### D. Adaptation and development of industrial technology

92. Industrial technology is the key to the solution of a number of interrelated problems of considerable social significance in the process of industrialization. The lower growth rate of employment and inequitable distribution of income can be traced partly to the higher growth of capital-intensive industries. Moreover, modern products promoted by transnationals and developments abroad encourage dependence on imported technology. Technology and various types of industrial skills cannot develop in a vacuum; they cannot be acquired and utilized in the absence of the adequate and relevant economic activities and infrastructure.

93. Above all, and in the case of industrial skills and experts, effective adaptation and development of industrial technology depend on the sectoral priorities for industrial investment in the country. The priority sectors are those capable of generating industrial technology and processing a wide potential for experimentation, innovation and diffusion.

94. Not all industrial sectors possess a wide range of opportunity for technological innovation, import substitution in general and the local manufacture of components for export; but assembly and sale elsewhere does not permit freedom in product design, and specifications and production processes. These are directed by the parent firm and are highly routinized and therefore insusceptible to local technological experimentation. The sectors which are likely to promote the adaptation and development of indigenous technology are the same ones which are capable of generating and developing skills, namely, the engineering, metal and chemical industries.

95. Since technological adaptation occurs primarily at the plant level, there is particular need to ensure the existence of an effective working relationship between production units and institutions working on industrial design and technological facilities so that through the feedback the work of these institutions is related to solving technological problems which arise at the plant level.

96. Effective adaptation and development of technology would obviously start with greater knowledge of the available capacity in the formal and informal industrial sectors and with programmes for the further utilization and upgrading of existing capabilities in order to have continuity the way in which problems of technological innovation are viewed in relation to indigenous skills and capabilities and materials. This implies that indigenous technological development cannot occur if African countries continue to subcontract their industrialization prospects to foreign investors; indigenous technology can develop only when the ownership and control of the firms in those sectors capable of generating new techniques is completely in the hands of the indigenous population which is an integral part of the domestic social market.

97. One important factor in the development of industrial technology is the evolution of effective technological policy requiring adequate institutional structures which function as semi-autonomous facilities under the responsibility of personnel who are not only skilled but also have access to bodies responsible for determining over-all policy. The organization of industrial guilds and associations dealing with specific current activities would no doubt be useful for stimulating the development of indigenous technology.

98. Industrial technological experimentation and innovation depend to some extent on the decentralization of the immediate elements of decision-making even in conditions where the role of the State is important. This gives managers at the plant level enough freedom and decision-making power to undertake the adaptation and experimentation each job requires. This raises the question of micro-planning both at the plant and community or village level which would facilitate the distribution of creative opportunity, responsibility and income and of the diversification both within the country and among different groups in the community, which in turn implies a need for adequate policies on standardizing and reducing the range of products imported into a country in order to integrate and widen the market.

E. Financing industrial development from domestic resources

99. The implementation of an industrial development strategy based primarily on self-reliance calls for a great deal of emphasis on appropriate policies to facilitate the mobilization of domestic savings in amounts consistent with industrial development objectives. The three major sources of savings, namely, households, corporate bodies and the government, are characterized slightly different elasticities, facilities, incentives and growth. In general, household savings are highly subject to the level of per capita income and inflation and to the degree of development of financial institutions, while corporate savings are largely dependent and the level of profits in specific sectors on corporate re-investment policies and on the utilization of depreciation allowances. Government savings depend on the direct and indirect taxation base, the development of involuntary savings schemes, such as social security and provident funds, and on the pattern of allocation of scarce resources by the State.

100. African countries, in general, have been characterized by a low level of domestic and foreign exchange resources and by the instability of such resources, and for this reason, a great deal of emphasis has always been placed on inflow of foreign industrial capital to fill the resources gap. As indicated in the preceding pages; foreign private investment has been the main source of industrial investment in direct production activities in most African countries over the last decade, and this fact has determined the uses to which corporate savings and depreciation allowances are put. Domestic utilization of these resources is very important considering the relative inability of general government savings to increase due to increasing government expenditures in the provision of infrastructures and social services. The level of household savings is equally low, partly because of the relatively low level of individual incomes and inflation and consumption patterns imported from advanced countries, which local groups tend to imitate. Individual households in the African region, especially in the rural areas, save their resources by investing in farm improvements and in the acquisition of non-industrial properties. From these observations, it will be clear that corporate savings have a crucial role in the mobilization of finance for industrial development. It is now clear that foreign investment tends to flow into sectors which yield maximum private returns in the shortrun (often because they are generously protected) and do not frequently initiate an internally sustainable industrialization process. Concentration of resources in the short-term investment generally preferred by foreign investors, tend to raise domestic prices of industrial goods because costs must be within a short period. Foreign short-term investment in highly protected sectors also serves to redistribute incomes to the detriment of the organized rural poor and the benefits of organized urban workers. Investment financing in these sectors which initiate dynamic, internally sustainable industrialization must therefore come from the community itself for only it can afford to trade off some of its money profits for the social benefits implicit in national industrial objectives. The bankability of an industrial project will therefore depend on whether it is to be funded by the community or by foreign investors and also on the qualitative character of the project and the sector in which it is to be implemented. The industrial finance for integrated industrial development must increasingly consist in domestic financial resources, which inevitably must be drawn from industrial corporate savings and depreciation allowances.

101. The utilization of industrial corporate savings and depreciation allowances will require more and more direct State participation in industrial production, in the form of either enterprises wholly owned by the State or effective joint ventures, especially in those sectors which are strategic to the implementation of the industrial policies discussed above. It will also call for greater direct participation by the State in such soft sectors as insurance, banking, distribution, transport, communications and tourism and in the development of indigenous consultancy services in order to guarantee the domestic recycling of national resources for the development of the priority sectors. Control of these soft sectors by foreign and domestic private investment generally results in an unduly heavy export of resources to the rest of the world in the form of profits, imports for conspicuous consumption and investment in speculative areas, such as real estates and land. Additional savings could also be secured through the development of effective institutions for negotiating the purchase and utilization of industrial technology. The industrial linkages and integration which are being proposed as an important element in industrial development enable the establishment of a linkage between the utilization and the mobilization of savings especially in poor countries where savings may shift upward in response to increased investment opportunity. In such conditions, increased investment may be followed by a rise in corporate savings, especially in those cases where the integration of the industrial sector opens new investment outlets, provided, of course, that these savings are re-invested in the country.

102. The implementation of the industrialization policy and programme outlined above would require a strong secondary supporting strategy to ensure a steady flow of foreign exchange to finance the additional imports required. Such supporting strategies would call for the expansion of traditional and non-traditional exports of unprocessed and processed raw materials; of agro- and allied industries and of exports of manufactures such as textiles, shoes, leather goods and petroleum to the oil-producing countries. In other words, the implementation of all integrated industrialization programme based on increasing self-reliance would succeed only if the programme were supported by aggressive export promotion programmes. It is in this context that the integrated commodity programme supported by UNCTAD becomes quite important for the majority of African countries because earnings from exports of traditional manufactures are not likely to be significant. To minimize the problems inherent in the concentration of exportation to developed countries, the export drive must also focus on trade with other developing countries and on a regional and subregional trade. Internal integration would facilitate such trade and its composition.

103. To implement strategic priority industrial projects requiring large amounts of finance and to supplement resources available at national levels, it may be necessary for the African region to establish multinational mining and industrial investment banks to undertake the organization of financial packages beyond the capability of national financial institutions.

## F. Indigenous popular participation in industrial development

104. The implementation of the industrial development strategy prescribed in the previous pages implies intensive participation by the indigenous population. The kind of participation referred to should be more intensive than that effected by measures for equitable corporate participation without effective control. Here participation is seen as including conceiving, planning, elaborating, managing, and financing industrial projects at the village, district, provincial and country levels as well as on subregional and regional levels. At the national level, it also implies intensive involvement of all strata of society in various aspects of industrialization and especially in the design, planning and operation of industrial and related complexes of small-scale industries and related support services in the rural areas.

105. Development of the kind discussed above, which emphasizes increasing self-reliance, might seem likely to engender autarky and inadequate exploitation of international specialization and trade on the basis of competitive advantages. However, whatever benefits may be reaped from international division of labour and specialization, especially in those processes and activities which maximize learning by doing, must be also weighed against the potential loss of less quantifiable but perhaps much more fundamental gains for African countries acquired from the widespread participation by their people in the conception, formulation, design, manufacture and repair of new types of equipment. <sup>1/</sup>

106. A real industrial revolution among African countries will effectively begin when the largest sector of the population has acquired new patterns of work and what has been called "cognition of mechanism", that is an undertaking of the use of machines and processes, the way in which machines interrelate, industrial materials, industrial labour and information. <sup>8/</sup> Participation in the industrial processes is a much broader concept than that of employment, which may reflect only a very passive and narrow relationship with the process of industrialization centred on the performance of a limited number of industrial activities in relation to the total number of activities required for the design, formulation, installation and management of industrial activity. Attempts to increase the role of the State in spearheading such participation may be dictated by the need to influence the employment policies of industrial enterprises which determine the extent of learning by doing by the indigenous population at the plan level.

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<sup>1/</sup> G. Rawski, "Problems of technological absorption in Chinese Industry", American Economic Review, vol. LXV, No. 2, May 1975, pp. 383-388.

<sup>8/</sup> R. Solo, "The Capacity to Assimilate an Advanced Technology", American Economic Review, vol. LVI, No. 1, 1966.

107. Development, and industrial development in particular, involves apparent conflict between social and private objectives and between short- and long-term objectives in the implementation of development strategy. These conflicts can be equitably resolved only if the principal agents of production in the implementation of the strategy are members of the indigenous population whose interests embrace both the short- and long-term requirements of production. Extensive participation by the indigenous population would also imply that the starting point in the implementation of the strategy is the existing indigenous technology, skills and units of production however small, which correspond to the large base of available skills. An opportunity must therefore be created for improved incentives for existing industrial capabilities through informal training programmes and for modern skill multiplication schemes through television and other media. Since what is called for is total and purposive mobilization and self-reliance which depend on energetic and imaginative participation by all sectors of the population, there must be a continuous search for the most effective forms of participation in industrialization, especially by the rural population.

#### G. Domestic market expansion and industrial development

108. In Africa there is certainly some relationship between excessive dependence on foreign enterprises and lack of research on product innovation appropriate to the domestic market and environment. An international firm chooses to centralize research activities in its home country because it worries about maintaining control over whatever production or knowledge it engenders since monopoly over new products is the most important source of profits. The difference between export-oriented projects and investments related to import-substitution and investments oriented to the internal utilization of resources is that in the latter type of investment, local patterns of materials and wages and salaries are dictated by the need for market development to a greater extent than in the cases of import-substitution and primary processing of export-oriented investments. The need for industrialization which depends primarily on domestic, subregional and regional markets is consistent with national and collective self-reliance.

109. The priority industrial sectors must be those that produce goods which are in dynamic local and external demand, especially in the medium and long-term, and are likely to encounter minimum trade restrictions at the subregional and regional levels. Directly or indirectly, the output of the priority industrial sectors should contribute to the improvement of the standard of living of the rural masses by satisfying their basic needs and by providing cheap inputs for rural-based production.

110. The priority industrial investments should be in industries capable of producing goods required especially by the rural sectors in satisfying their basic private and social needs, such as the need for adequate and nutritious food, a stable supply of water, electric facilities, cheap transport, medical and health facilities, clothing, and educational materials and in industries aimed at increasing the variety of inputs, thereby enhancing productive capability. This is feasible if there is an increase in effective demand for a broader base of products than that provided by traditional agricultural exports. The production of traditional export crops has in-built restraints, in terms of the quota system and climatic conditions, on the utilization of domestic resources. Effective expansion of rural demand must depend: first on food crops for the domestic market and on greater internal specialization and trade in order to relate social investment demand to the production of goods and services.



111. Owing to the pattern and distribution of economic activities within regions of individual African countries in recent years and to the undue concentration on the production of export crops, large sections of these countries have not been brought adequately into the "modern" economy of gainful productive activities. This has greatly affected the size of domestic markets for industrial products. The domestic market for specific industrial products is also frequently further reduced by fragmentation through the import of a multitude of brands in similar functional classes. Effective strategies for the production of input goods and consumer durables must thus entail reducing the number of brands imported and standardization with a view to domestic market expansion.

112. The pooling of subregional markets through subregional and regional economic co-operation is an indispensable requirement of market expansion to supplement domestic markets for industrial goods.

## II. POLICY GUIDELINES FOR IMPLEMENTING THE STRATEGY AT THE NATIONAL AND REGIONAL LEVELS

### A. Utilization of natural resources

113. The African countries have abundant resources of various raw materials for industrial use. These include iron, coal, petroleum, copper, tin, aluminium, manganese and phosphates. For many years these resources have been exported to feed the industrialization process of the developed countries. Evidence has emerged, however, of the squandering of exhaustible resources which has been taking place at the international level in recent decades.

114. There are indications that while the exhaustible resources of Africa are being depleted, the ecological balance is also being upset by deteriorating vegetation cover and advancing deserts. Thus, Africa must race against time as regards the need for more rational utilization of its resources lest self-reliance in development soon moves beyond its reach. Africa ought to increase its national decision-making capacity as regards the use of its resources. One prerequisite is to foster domestic capabilities in respect of technological innovations in industry aimed at the local utilization of domestic resources. These innovations may involve designs, products and processes which could produce important changes in the structures of industrial development of the African countries. In this connexion the integration of mining enclaves with the rest of the economy is of special importance. Innovation should extend to the development of recycling processes for the re-use of materials which are now being thrown away.

115. The extent to which the engineering industries exhibit their capacity for continuous growth in production by acquiring additional skills and devising new techniques, new designs and new adaptations, is a measure of domestic capability to sustain the continuous technological process that is the characteristic of modern industrialization in any country. Without such capacity, even if a country has a high per capita income derived, for example, from the exploitation of natural resources which earn foreign exchange, it is still a "rich backward country" whose good fortune hangs on the stability of the existing structure of international trade.

116. Thus, in addition to seeking increased net contributions to their public revenue and foreign exchange resources, Governments should take account of the possibilities for increased employment; increased local purchase; more forward, backward and lateral linkages and greater access to technology and the development of skills. <sup>9/</sup> The main point to be stressed here is that, from the point of view of self-reliance and integration, real benefits from resource use are as important (and may be more important in particular cases) than increased financial benefits in the form of additions to public revenue and foreign exchange resources. There is little purpose in gaining foreign exchange if the long-term effects of such gains on employment, skills, technology, domestic linkages, diversification and quality are negative.

#### B. Transport and communications

117. It is a fact that the development of African transport and communications has yet to meet the criteria of speed and efficiency in the distribution of goods and services, including industrial inputs. Inadequate transport and communications facilities have proved a major handicap to the development of intra-African trade and contact. In addition to improving the internal transport system, it is sometimes necessary for Governments to intervene in shipping. The exports of African countries are usually dependent on foreign-owned shipping lines, and irregular services can disrupt African industrial operations and exports. Consultations for concluding bilateral and multilateral maritime transport agreements on a pooling or payment-clearing basis are necessary at a governmental level in order to obtain certain facilities and ensure regular shipping services at freight rates which do not unduly add to the price of exports or imports.

118. Transport equipment accounts for a large proportion of the engineering goods imported by the developing countries. <sup>10/</sup> The establishment of transport equipment manufacture is generally preceded by the establishment of repair and maintenance shops and enterprises producing replacement parts. Such facilities have the additional advantage of providing training in the required skills. This does not imply, however, that these two types of operation cannot be carried out simultaneously if the capability exists.

119. The manufacture of transport and telecommunication equipment should be promoted in accordance with the requirements of the national economy and matched by the development of other services indispensable for the efficient use of such equipment. Governments might find it necessary to promote co-operation and collaboration within the outside the region in order to help to determine product priorities.

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<sup>9/</sup> See E/CN.14/ECO/90/Rev. 3, (op. cit.), p. 35.

<sup>10/</sup> See Engineering Industry, vol. 4; United Nations publication, Sales No. E.69.II.B.39), p. 64.

C. Agriculture

120. In most African countries, the major contribution to the gross national product still comes from agriculture. The need for industrial support for agriculture is well known, especially as regards fertilizers, farm implements and tools, cultivators, sprayers, threshers, harvesters, harrows, engines and pumps and other irrigation equipment. There is need for research and development in this field (e.g. on low-cost prototypes, agricultural machinery and fertilizers adapted to the specific needs of the soil, climate, crops and available labour).

D. Integrated rural development

121. If rural development policies are to deal adequately with the productivity problems encountered in the rural sectors of African countries, they must take an economically integrated approach and provide for any social, political and institutional structural changes that may be required. Integrated rural development implies a series of programmes and actions that are aimed at increasing both agricultural output and employment as well as the output and employment of agro-industries and other mutually supportive activities. In fact, the policy network has to be linked simultaneously with improved technical skills, rural infrastructure, storage, transport, distribution and marketing promotion activities. Moreover, it may require that farmers have access to credit facilities and technical information, including information on various by-products which increase value added. This may imply the deepening of local resource linkages and possibly the import of complementary inputs from other countries, and hence the need for various types of multinational co-operation.

122. Policy must go beyond the familiar concept of the interdependence of industry and agriculture, as represented by the commodity flow between the two sectors, and might include industrial support of agriculture (e.g., fertilizers and machinery) and industrial processing of agricultural raw materials (both food and non-food processing). It is often claimed that steps have been taken in this direction, but the efforts made are frequently biased in favour of cash crops while, despite a general impression of socio-economic development on the surface, the staple food situation in rural areas continuously deteriorates. This can be explained in part by the concomitant change in the dynamic demand pattern, which is becoming more favourable to non-food or cash crops than to staple foodstuffs. The extension of the integrated approach to the staple food subsector requires a non-conventional policy emphasizing development of small-scale processing industries, skills for their operation, maintenance and repairs facilities for such industries, the utilization of by-products, research and marketing promotion assistance, national nutritional policies and organizational and other infrastructure tailored for the transformation of the rural staple food subsector.

E. Information and research

123. The development of local inventions within both enterprises and technological research institutions is a decisive factor in enabling the region to achieve greater autonomy as regards industrial technology. The reasearch effort currently being conducted in Africa is relatively poor as compared to other regions, ncr does it lead to real innovations responding to the most burning problems of the African economies.

124. The neglect of the sectors which characteristically generate technology in the industrialization process, such as those sectors which include the manufacture of industrial equipment, petro-chemicals and electronic products, is one of reasons for the low level of innovation. Another reason is the lack throughout the region of sustained incentive for local engineering experts in the field of industrial processes and plant. This applies both to engineering consultants and to personnel for the design department of development corporations, enterprises and public services.

125. There will be a need to reoriente existing research capabilities, which in most of developing Africa are now engrossed in the study of agro-biological problems affecting agricultural export crops. Greater emphasis should be placed on research relating to staple food crops and industrial technology (including that utilized in the processing of agricultural products). <sup>11/</sup> Steps must be taken to develop appropriate manpower for such research with special attention given to the science and technology of materials and to engineering design and power engineering. Governments should also activate technological innovation and diffusion.

126. One of the greatest obstacles to research, development and innovation in Africa is the difficulty experienced by technological research institutes in establishing regular working relations with industry. These relations are of vital importance for carrying out the original purpose for which these institutes were set-up, namely, that of providing information which will ensure that the industrialization process is conducted in a manner more in keeping with the objectives of the economic and social development plans. African countries will also have to learn the habit of exchanging existing industrial knowledge among themselves rather than with the advanced countries.

127. The African social and economic systems will function more efficiently if improved information flows to the decision-making centres can be ensured. Governments should provide facilities for the production, storage, dissemination and utilization of the information resources available. Efficient processing of the total information available entails economies in the processes of enquiring, communicating and decision-making, which are highly complementary activities, though not always in fixed proportions. Since national information policy

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<sup>11/</sup> See E/CN.14/ECO/90/Rev. 3, (op. cit.), p. 41.

emerges as a problem of resource allocation, attention must be given to the design of institutions to promote competence in the utilization of information by individuals, agencies, and between various African countries on exchange basis. Thus, a stock of information can be gradually built-up on industrial equipment, processes, products, sources, plant layout, price quotations, technology, markets, by-products, etc.

#### F. Regional and subregional co-operation

128. Economic co-operation ventures in Africa have been oriented primarily to trade facilitation. This approach is, however, based on models borrowed from advanced countries where there is no problem regarding the supply of competent local entrepreneurs in both the public and the private sectors; skilled manpower; familiarity with the sources of raw materials supply; the range of choice of technology; production processes and production markets; inter-industry linkages; the availability of locally-produced inputs; a large output mix (including the utilization of by-products) or developed domestic markets. In developing African countries, on the other hand, economic activities and output are characterized by subsistence production, and effective demand is restricted and fragmented.

129. The objective and mode of co-operation in developing Africa should be the creation and utilization of new productive capacity, especially in the production of goods and services for use as further inputs for other industries or for consumption. This is particularly true of basic industries such as the metals, engineering, chemicals, agricultural, building materials, and electric power industries.

130. The engineering industry, especially, offers possibilities for co-operation even among developing countries themselves. This is because a high proportion of the parts, components and accessories utilized in the engineering industry are similar or are produced by identical or similar production processes, while the needs of a single factory are often below the optimum economic scale required by the advanced production technology. It is not claimed that engineering industries should be developed in isolation; but we must take cognizance of the fact that engineering is a creative activity which works as a catalytic agent for any level and type of industrialization that can be contemplated. The practice of concentrating engineering production in well-equipped plants serving a large number of other factories could be followed in the case of foundries and forges. The flexibility in mechanization of such industries makes it possible to cope with certain input requirements of various industries. Thus, the significance of trade among participant States depends not merely on the absolute volume or value traded but on the composition of the trade.

131. In order to counter the forces of foreign transnationals, reliance must be placed in the principle of co-production embodied in African State-owned multi-nationals competent to organize large-scale industrial production; negotiate for raw materials, technology and equipment; arrange large-scale training programmes; promote and support sub-contracting companies; set up group consultancy and research services and encourage innovation. The institutional structure for this needs reconsideration at both the macro and the micro levels.

132. The economic incentive for co-operation must be perceived and articulated largely at the national level. It is in the solution of national problems that the major gains in economic co-operation are to be found. Clearly, a considerable degree of close programming of national production changes and planned output of multinational industries, preferably effected through long-term purchase arrangements, will be required. However, institutions for the encouragement of regional co-operation within the engineering sector fulfil certain functions that cannot be adequately covered by formal planning. Such functions include the financing of intra-regional exports of capital goods, the exchange of information at the regional level and the co-ordination of the production programmes of the various countries concerned and will have to be performed on a routine basis.

### III. POLICY GUIDELINES FOR IMPLEMENTATION OF THE STRATEGY, FOREIGN INVESTMENT AND INTERNATIONAL CO-OPERATION IN INDUSTRY

#### A. General problems of external dependency in relation to investment

133. Many of the foreign debts contracted by African countries to finance specific projects are in fact for amounts much greater than the sums actually received. In certain cases, so much interest due accumulates that the total debt becomes unredeemable. Dependency on non-African countries for finance extends to those types of foreign investment that do not create potential for domestic self-help. There is a monetary cost in the form of dividends, associated with this kind of investment but the main costs associated with capital formation made on the basis of national resources, which also flow to the foreigners in the form of profits. Many investment contracts also involve direct or indirect payment for imported consultancy services, technical manpower, technology, services, etc.

134. Among the many frequently-mentioned adverse external effects of direct private investment are the following: the development of a foreign enclave within the host country; the stifling of export markets or, alternatively, their excessive promotion; the failure to develop domestic research adequately and to adapt imported technology to local conditions more effectively; the inadequate effort made to train and develop local managerial and technical talent; the failure to participate more actively in community development or, conversely, too active participation in local matters; the phoney transfer pricing practices followed within companies; the failure to co-ordinate investment and production policies with the planned priorities of a country and the failure to make more purchases locally, the deleterious effects which this has upon the development of indigenous entrepreneurship, technology and genuine management skills and, above all, the likelihood that it will produce a loss of control over the private sector of the economy. <sup>12/</sup>

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<sup>12/</sup> See G.L. Reuber, Private Foreign Investment in Development (Clarendon Press, Oxford, 1973), p. 20.

B. Conventional promotional framework for private foreign investment

135. Foreign-owned private companies prefer export-oriented investment, mainly to protect or improve their competitive position at home or internationally. Frequently the market in the host country may be of little or no consequence. Export-oriented investments tend to be profitable even in the short run, and they are highly mobile so that, if conditions become less favourable, the firm can and does move its investments quite readily. Also, investors are usually reluctant to assume the risk of relying entirely on the host country for the production of a full product line. The failure of African countries to capture their share of lasting advantages from foreign investment is mainly due to the practice of offering competing opportunities to foreign companies on liberal terms and policies.

136. The point we have been attempting to make all along is that the problem of dependence on external capital in Africa initially arose from a pervasive faith in the need to maximize foreign exchange, the satisfaction of which was pursued with such obsession that nothing significant was done to enhance the domestic potential for industrial inputs, skills and technological capability. The result is that African countries are now in a predicament where to get access to modern industrial technology, etc., they must associate themselves with foreign capital and/or must resort to trade and foreign enterprise.

137. The mere fact that an inflow of foreign investment may generate an immediate supply of foreign exchange, thereby relieving balance-of-payments difficulties, indicates nothing in and of itself about the desirability or otherwise of such investment because subsequent transfers from the host to the investing country in the form of interest, dividend, and principal payments and of indirect payment for services, technology and other inputs may conceivably give rise to adverse effects on the terms of trade which need not be recognized. Also, foreign investment may frighten off local entrepreneurs, causing them to spend less on investment than they otherwise might. Moreover, foreign investment used as a substitute for resources obtainable locally implies a negative relationship with local endowments.

C. Types of investments oriented towards domestic growth

138. The industrial strategy in the area of foreign investment will require host countries to exercise considerable bargaining power individually or jointly in their relationships with investors, in an attempt to establish a foothold in their domestic markets. At the national level, it will mean the promotion of market-development investment as well as government-initiated investment. Market development investment is usually based on long-term considerations and implies a long-term commitment to the host country. In the short and medium term, such investment frequently is unprofitable. The investment is made in response to the general effectiveness of the policies of the host countries, the size of the local market, its long-term potential, etc. As the economy expands, it may be feasible not only to reduce any concessions initially extended to foreign investors but also to insist that new investors themselves grant certain concessions in such areas as local ownership, the utilization of local inputs in products and reinvestment.

139. Government-initiated investments inevitably create a high degree of inter-dependence between the investor and the host country government. They tend to put greater emphasis on joint ventures with minority participation for foreign investors and on other conditions of private direct investment. The incentives for this type of investment should tend to be specific in their orientation; i.e., they should relate to particular projects or industries rather than to projects and industries in general. The initial high real resource costs of such investments could be justified on ground that they yield a variety of intangible non-quantifiable external advantages, such as the development of local managerial and technical skills, improved technology and a series of beneficial spill-overs into other local industries. The investment should also constitute one step in a long-range plan to develop a fully-integrated basic industrial sector in such fields as chemicals, metals, engineering, building materials and agriculture. One other purpose of such an investment may be to stimulate the development of depressed areas, thus equalizing regional development or minimizing industrial congestion.

140. The criteria used for government-initiated projects is that projects must be directly initiated by the host country government by making an explicit offer to the investor. This is not a question merely of the host country government's bringing market opportunities to the attention of investors. This type of investment occurs primarily in response to government subsidies of one kind or another. Market development investment no doubt include projects that are to some degree dependent upon host-country subsidies, and such investments are therefore partially the result of government encouragement as well.

#### D. Co-operation with developed countries

141. It would be with mutual interest of the developed and the African countries to co-operate in improving the quality and accessibility of information on transnational corporations. For example, bilateral tax treaties could be utilized to facilitate an exchange of information on transfer pricing, allocation of fixed charges and similar subjects.

##### (a) Inter-enterprise agreements and deployment of industry

142. Governments may contemplate more direct measures that would promote the trend towards co-operation. An example might be the establishment of industrial, scientific and technical co-operation agreements between a given industrialized country and a given African country. Such arrangements in well selected industrial fields could be of benefit to another developing country outside the Region, or they could be enacted to cover particular subsectors with a view to some specialization of production between the two contracting parties. They could stipulate a framework within which detailed inter-enterprise agreements could be established. International sub-contracting arrangements are an important type of inter-enterprise agreement involving two partners. Licensing agreements could also be promoted.



143. Redeployment of industry in the context of inter-enterprise agreements should involve not only transfers of production but transfers of technology and the sharing of markets. International consultations to establish a restructured industrial system as endorsed by the seventh special session of the General Assembly would include the redeployment of certain production capacities existing in developed countries and the creation of new industrial facilities in developing countries. <sup>13/</sup> However, African countries must individually or collectively work in earnest to prepare their position clearly, lest the results of redeployment lead to the peddling of non-dynamic industrial units which will neither fit in with the envisaged industrial strategic framework of Africa nor broaden the potential for domestic resource utilization, skill development and diversification.

(b) Co-operation through joint ventures

144. African countries should be prepared to distinguish fact from fiction where co-operation through joint ventures is concerned. Usually, firms undertaking market-development or government initiated investments are more likely to participate in a joint venture or to accept a minority interest in the business. In such cases it is common to have local partners handle the marketing responsibilities because of their familiarity with the language, local customs and markets and the potential customers. In the case of most export-oriented projects marketing activities are not undertaken in the host country, and the foreign firm invariably takes the lead in developing the markets and also insists on majority, if not absolute, control.

145. There are two categories of joint ventures. In one, local participation is primarily made up of private investors; in the other, the local partner is the Government. In both cases the creation of joint ventures requires some degree of equality in the bargaining position of the local group and the foreign entry. The problem with having private investors as local partners is that most strategic decisions relating to function are made by men in the overseas headquarters. Moreover, the local business elite which may include political and military figures benefit from such ventures while the masses continue to suffer. In the extreme case, their power, status and wealth are directly linked to the preservation of the "dependency" system.

146. In instances where Government is the partner in a joint venture, management contracts are often made as the main alternative to direct private foreign investment in the hope that this will facilitate transfers of knowledge, skills and capabilities to the local recipient. However, even this facility ought to be closely examined because, although the host country retains nominal control, actual control remains largely in the hands of the foreign firms for the period of the contract which may last for 10, 20 or 100 years. Under this kind of arrangement, the hope is that with time, when the country as well as the recipient enterprise have developed, actual control can be easily regained in the host country. This will, of course, be obvious to the foreign firm,

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<sup>13/</sup> See paragraph 3 of General Assembly Resolution 3362 (S-VII).

which presumably will modify its prices and the quality of the service it provides to compensate for the fact that the arrangement implicitly provides for the phasing out of its affiliation with the local enterprises. Thus, a joint venture could turn out to be very costly and the management contract indefinite. No private foreign firm gives up control unless it feels there is considerable advantage to be gained. It is evident that this type of set-up will be rational only if the time preference of the host country government for actual control is small or if the immediate costs incurred through management contracts are low.

147. It would be useful to establish mechanisms and institutions at national levels whereby co-operation between enterprises could be stimulated; but such mechanisms would have to enable African countries to go beyond the stage of being passive receivers of foreign technology and know-how and to engage in adaptation and research on their own initiative.

#### E. Co-operation with developing countries outside the region

148. African countries should work in co-operation with countries in other developing regions in order to develop global strategies for industrialization among all developing countries. Such strategies should provide for the harmonization of policies and plans as appropriate and the establishment of a system of consultations among developing countries in specific sectors of production to increase their share in world industrial production. Developing countries could co-operate in undertaking an inventory of their natural and human resources which could be used as a basis for industrial co-operation, the location of multinational (State) enterprises, the elaboration, design and development of multinational and other projects and the management of public enterprises. Mechanisms and institutions should be made available for specialization in industry through long-term agreements at the sub-regional, regional and inter-regional levels, <sup>14/</sup> as well as the control of transnationals and the co-ordination of policies in respect of foreign private investment at the subregional, regional and inter-regional levels. <sup>15/</sup>

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<sup>14/</sup> Self-reliance can be national, multinational, regional or multi-regional, i.e. it can be individual or collective. This is understandable in a region in which 26 of the 47 independent member States have a population of 5 million or less; 10 a population of between 5 and 10 million and 9 a population of between 10 and 30 million. This places squarely upon Governments and national communities, acting individually or in groups, responsibility for determining, with the assistance of United Nations (including ECA) and other agencies, the components of the mechanisms for self-sustaining growth and diversification for national objectives and securing and assembling these components and operating the mechanism efficiently. This requires two types of action: the identification and preparation of components internally available and securing ownership and/or use of components externally available. See the statement by the Executive Secretary of the Economic Commission for Africa to the sixty-first session of the United Nations Economic and Social Council held at Abidjan from 1 to 9 July 1976.

<sup>15/</sup> See E/CN.14/ECO/106, para. 15.