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Rehabilitation and Restructuring
with Special Focus on the
Food-processing Subsector in Africa

Vienna, Austria, 23-25 October 1989

**INDUSTRIAL REHABILITATION AND RESTRUCTURING IN AFRICA:
THE CASE OF THE FOOD-PROCESSING SUBSECTOR***

Prepared by

the UNIDO Secretariat

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I. BACKGROUND

Origin and purpose of the study

1. At its fourth session, the Industrial Development Board decided to include a Regional Consultation on industrial rehabilitation/restructuring on a specific industrial sector for Africa in the UNIDO programme of Consultations for the biennium 1990-1991. This study constitutes the first step in the preparatory process for convening the Consultation. It has a dual purpose. First, it is to select the most appropriate subsector in the context of the African industrial scene and priorities; and second, it is to define the conceptual framework for the development of the issues to be addressed by the Consultation.

II. CONCEPTUAL AND DEFINITIONAL ISSUES

Rehabilitation and restructuring defined

2. Rehabilitation and restructuring are two distinct but closely related economic concepts involved in industrial activities operating, as it were, at micro- and macro-economic levels. Rehabilitation, in this context, refers to the process of restoration, revitalization, regeneration or modernization of a low efficiency and ailing enterprise or enterprises, and the potential for transformation into a healthy, viable working undertaking. Such transformation may involve physical as well as technical, financial and organizational rehabilitation aspects at a micro-economic level. Once properly rehabilitated, the enterprise or enterprises in question would be more dynamic, efficient, productive and profitable in industrial operations.

3. On the other hand, restructuring signifies the process of industrial structural change in response to internal or external demand, usually in the shape of merger, liquidation, upgrading, expansion, contraction or other changes, with improved industrial organization and management. The instruments utilized are strategies, policies and programme measures affecting enterprises, subsector, sector and industrial environment at micro- and macro-economic levels.

Objectives of rehabilitation and restructuring

4. The immediate objective of rehabilitation is to arrest and reverse the trend of industrial stagnation and decline and reorient an enterprise to operate at optimum level. The whole drive is to make a plant viable, efficient, competitive, productive and profitable. Hence the plant could function autonomously on a self-sustaining basis.

5. The exercise is a micro-economic activity for removing specific bottlenecks, and essentially it is a resource scarcity problem. Rehabilitation as a modernization process of a plant comprises a mixture of technique, technology, organization and management, human resources, as well as economic, financial, marketing, design and engineering aspects that assist an enterprise to function at optimum installed capacity.

6. Industrial rehabilitation, in a broad sense, should secure optimal use of existing capacities and resources for future general industrial growth. That means sustained capacity to regenerate and reorient growth towards the industrial development process. It is a dynamic process of injection of new resource inputs and removal of bottlenecks in order to keep an industrial plant fully operational under a changing industrial environment on a self-sustaining basis, and thereby contribute towards growth and development of industry and the economy as a whole.

7. The objective of a restructuring process as a micro- and macro-economic activity subsuming rehabilitation is to create a conducive and stimulating industrial environment in a broader and higher order related to evolvement of industrial strategies, policies, and other measures and institutions, which have a direct impact on the structure, behaviour and performance of the industrial sector, interlinked with the other sectors of the economy. Specifically, such measures are to remove major obstacles concerned with macro-economic and trade policies.

8. Since the economic performance of a country is determined by either internal compulsion and/or external stimuli, it is essential for an economy to respond to a demand and supply situation with higher productivity and production and cost saving. All this means productivity growth, adjusting and adapting to new market demands. In this case, structural change is closely associated with growth - and growth cannot be sustained without rehabilitation and/or structural change. In other words, the real objectives of a rehabilitation and restructuring programme are to reverse the industrial decline trend and reorient an enterprise and industry towards efficiency, competitiveness, higher productivity and profitability, and in turn contribute towards growth and development of the economy on a self-sustaining basis.

Causes of rehabilitation and restructuring

9. The African industrial structure is characterized by underutilized or idle capacity. Therefore, the immediate causes of rehabilitation are of a micro-economic nature, mainly at the level of the enterprise associated with input resource scarcity, i.e. capital, raw materials, spare parts, managerial technical and organizational skills, as well as access to markets and related supporting institutions. The performance of many industrial enterprises has been also adversely affected by infrastructural bottlenecks. Inadequate provision of power, water and transport is linked with frequent production stoppages and high unit costs for many enterprises. The industrial and economic environment at national, regional and international levels also have a direct bearing and influence on the efficiency and competitiveness of an enterprise.

10. The main underlying causes for this situation lie at the macro-economic level related to industrial strategies, policies and related measures and institutions. Specifically, they have to do with inappropriate industrial strategies, policies, and technologies as well as lack of industrial institutions such as research and development, banking, education and training, and physical infrastructure, especially transport, communications, utilities, electricity, water, oil, etc.

11. Moreover, the mounting debt burden, which reached more than US\$200 billion in 1988, and debt servicing obligations amounting to

US\$29 billion in 1988^{1/}, have dramatically exposed the fragility of the industrial structure of many African countries. There may well be an increased process of de-industrialization in these countries unless concerted efforts are made now to tackle the critical bottlenecks and obstacles underlying this trend.

Levels of rehabilitation and restructuring

12. Rehabilitation is a process that takes place at the level of an enterprise and is concerned with a mixture of organizational, managerial, technical, technological, financial and human resource aspects, whereas restructuring, which subsumes rehabilitation, operates at the enterprise, subsector and industry-wide levels.

Implementation measures for rehabilitation and restructuring

13. Rehabilitation and restructuring is an integrated and multi-disciplinary approach to offer support at:

(a) macro-industrial policy level in order to remove major obstacles to viable development of industry;

(b) the subsectoral level that encompasses a number of enterprises involved in similar and interrelated lines of production; and

(c) the level of specific enterprises in order to cope with critical bottlenecks identified.

14. The actual rehabilitation and restructuring process of industry in Africa entails, *inter alia*, at least three steps and elements. The initial step is to identify enterprises suitable for rehabilitation where scarce foreign exchange and other convertible resources will be most efficiently used to upgrade enterprise production and performance. The second step is to combine the enterprise rehabilitation process with a restructuring programme of the industrial sector as a whole to ensure domestic economic integration with the provision of support industries and services for a dynamic industrial growth. This programme entails investment in new industrial capacities, infrastructural services and primary commodity production. The third step is to adopt policy adjustment and to create an appropriate institutional and administrative framework for improved support of domestic and international efforts to achieve industrial regeneration and enhanced development process.

15. Before serious effort is made to undertake actual rehabilitation of an enterprise or enterprises in Africa, it is necessary to study in depth the precise reasons, nature and extent of the problems and constraints confronted against the background of increasing challenges in a particular subsector and in the economy. For this reason, treating industrial rehabilitation as a mere micro-economic issue would be misleading.

^{1/} "African alternative to structural adjustment programmes (AA-SAP): A framework for transformation and recovery", Economic Commission for Africa (ECA), April 1989, E/ECA/CM.15/6/Rev.2.

16. On the contrary, it is essential to fully assess and consider the nature and magnitude of underlying constraints at the level of the industrial sector and the economy as a whole. The first advantage is that the general viability of several rehabilitation efforts would be assessed. Secondly, identification would be made of the precise nature of measures, investment studies, market studies, policy and institutional issues, and technical matters which need to be examined in some detail as part of the subsequent work of detailed rehabilitation work at successive subsector and enterprise levels. In other words, only with the broad consideration of current issues and their causes and with the early estimation of the appropriateness of rehabilitation can targetted projects be designed and launched for selected activities of an industrial sector in various African countries.

Regional dimension

17. Furthermore, at this juncture the issue of regional and subregional co-operation is absolutely vital in the African context. In many instances, rehabilitation and restructuring of industries assume expansion of narrow and fragmented domestic markets, as well as joint raw material supplies by several neighbouring countries, and other types of industrial co-operation. Appropriately designed rehabilitation and restructuring programmes need to be seriously considered and assessed against possible industrial co-operation schemes at subregional and regional levels, as the case may be.

III. ECONOMIC REVIEW AND SUBSECTOR SELECTION FOR REHABILITATION AND RESTRUCTURING

African economy overview

18. Despite their development efforts, the performance of African countries has been disappointing, especially in the industrial sector in the 1980s. Per capita income has been either stagnant or has declined in most African countries. In 1986, per capita income in countries such as Ethiopia, Zaire, Mozambique, Malawi, United Republic of Tanzania, Madagascar and Uganda registered less than US\$300 per annum which is only about 2 per cent of the average per capita gross domestic product (GDP) of developed market economy countries. The per capita income of the region as a whole today is lower than in 1970; of the 33 countries listed in UNIDO's Industry and Development - Global Report 1988/89 (ID/360) with a per capita income of less than US\$400, more than two thirds are in Africa.^{1/}

19. The overall economic performance of the African countries has been to a large extent determined by the performance of the agricultural sector which accounts for about two fifths of GDP in these countries.^{2/} Agricultural production declined in per capita terms in each of the first four years of the 1980s. The impact of drought, civil disturbances, destabilization and civil wars has been particularly devastating for the region as a whole.

20. The adverse external environment prevailing in the 1980s, notably the state of primary commodity markets, is also another major determinant of the poor growth and deteriorating industrial performance of the African

^{1/} "Regenerating African manufacturing industry: Approach and programme", UNIDO, December 1988.

^{2/} "The least developed countries 1987 report", United Nations Conference on Trade and Development (UNCTAD), 1988, TD/B/1/53.

countries. A large number of African countries which depend heavily on agricultural or mineral exports performed less well during the 1980s than those whose exports were not based mainly on primary commodities.^{1/}

21. The agricultural sector, a major source of livelihood for several African countries, has not been able to provide a fast growing population at a high rate of 3.1 per cent annually (1985-1990)^{2/} with essential food supplies. In 1986 for instance, an estimated 25 million tons of cereals were imported into the African region^{3/} at great sacrifice of scarce foreign exchange. A good number of African countries have become dependent on food aid as well. In 1985/86 nearly 6 million tons of cereals were brought into Africa as food aid. However, for many African countries the agricultural sector is the mainstay of the economies and the major source of employment, foreign exchange and export earnings, and supplier of raw materials for industrial inputs and feeder of industrial and rural population. The significance of the agricultural sector for underpinning the industrialization process in Africa cannot be overemphasized.

General industrial trends^{4/}

22. Up to early 1980, industrial growth rates of the manufacturing industry in general in Africa resembled those of other developing regions. Since then, however, African industrial performance as a whole has deteriorated sharply in relation to the other regions. In capacity utilization only a few countries reached a rate of 70 per cent of registered enterprises. Utilization rates of installed capacity were far below 50 per cent for most countries. In the mid-1980s, for instance, registered capacity utilization of selected major industries in Sudan (private sector) was about 32 per cent, in Liberia about 36 per cent, in the United Republic of Tanzania about 25 per cent, and in Zambia between 30 and 50 per cent.

23. Since 1985, an upturn was witnessed. Growth in Sub-Saharan Africa measured in manufacturing value added (MVA) terms showed a sudden jump from -0.8 per cent in 1984 to 4.1 per cent in 1985 and was forecast to reach 4.5 per cent in 1988.

24. In spite of this sudden upsurge rate of MVA growth, it is doubtful if the upward trend will continue. This is because domestic markets have reached a plateau or contracted and international markets for primary commodities remained stagnant during most of 1980. Clearly, export earnings are crucial for industrial growth and development in order to import intermediary goods and other required inputs.

25. Structural change in African industry has been slow. On the whole, a shift away from the dominant subsector - food products - in Africa was discernible, but strong grower industries in other developing economies, such as electronics, garments and transport equipment, generally remained modest.

1/ Ibid.

2 "World economic survey 1988: Current trends and policies in the world economy", United Nations, New York, 1988, E/1988/50, ST/ESA/205.

3 "World Development Report 1988", World Bank.

4/ "Regenerating African manufacturing industry: Country briefs", UNIDO, 1988, PPD.97.

Industrial performance 1986/87

26. The manufacturing sector recorded an average annual growth rate of 3.1 per cent (at 1980 prices) during the period 1980-1986. The preliminary estimates for 1987 indicated 3.7 per cent growth which is an improvement over 1986 which registered 2.4 per cent only.

27. Principal causes for the poor performance of the manufacturing industry in 1986/87 were a mixture of structural factors such as the absence or weakness of the capital goods subsector in most countries and a lack of linkages within the manufacturing sector and between industry on the one hand and agriculture and other economic sectors on the other. Limited domestic markets and low incomes were additional reasons. African countries have been overly dependent on imported technology, know-how, industrial skills and raw materials, diverting the course of industrialization from the kind of development which could have made positive impact.

28. In Sub-Saharan Africa, natural and non-natural calamities (drought and desertification, predators, etc.) contributed equally to the plight of industry. The decline in oil prices was a set-back to oil-exporting countries, some of which depend on that commodity for 95 per cent of government revenue and foreign exchange earnings. Fall in foreign exchange earnings affected all economic sectors and in particular the manufacturing sector in the countries concerned. In the case of Nigeria, which accounts for a sizeable share of regional MVA, manufacturing enterprises operated at 20 to 25 per cent of installed capacity.

29. Finally, poor management and organization have also taken their toll. Imported technology unsuited to African socio-economic conditions including inappropriate machinery and the frequent breakdown of equipment continue to militate against industrial growth.

Structure of industry

30. The share of industry and manufacturing in GDP between 1982 and 1986 in the four subregions, North, West, Central, and East and Southern Africa, remained relatively constant and stable, as indicated in table 1 below. This implies that the old pattern of industrial development has persisted despite policy orientation, structural adjustment measures, and rehabilitation programmes carried out recently.

Table 1: Africa: Share of industry and the manufacturing sector in GDP by subregion, 1982 and 1986 (Percentage)*

| | <u>North Africa</u> | <u>West Africa</u> | <u>Central Africa</u> | <u>East and Southern Africa</u> | <u>Developing Africa</u> |
|-----------------------------|---------------------|--------------------|-----------------------|---------------------------------|--------------------------|
| <u>Industry</u> | | | | | |
| 1982 | 49.0 | 32.7 | 34.7 | 25.1 | 38.6 |
| 1986 | 49.3 | 30.8 | 36.1 | 25.5 | 38.8 |
| <u>Manufacturing</u> | | | | | |
| 1982 | 10.1 | 7.7 | 8.0 | 13.4 | 9.4 |
| 1986 | 11.1 | 6.1 | 9.0 | 13.1 | 9.5 |

*/ At 1980 factor cost.

Source: ECA Secretariat, 1988.

31. The manufacturing sector in Africa consists predominantly of consumer goods industries, above all food, beverages and tobacco, textiles and clothing. Industries producing capital goods, essentially machinery and transport equipment, are concentrated in four countries, i.e. Algeria, Egypt, Kenya and Nigeria. In some cases, the vehicle assembly plants operate without backward and forward linkages to local industries. Egypt, Morocco and Nigeria are prominent in chemical production; Algeria, Egypt, Nigeria and to some extent Zimbabwe in metal industries.

Food and beverages

32. Food-processing output in the region declined during 1980-1985 by as much as 4 per cent a year, but increased in 1986 by 3.5 per cent and in 1987 by an estimated 2.5 per cent. The commodities processed include essentially dairy products, coarse grains, fish, cocoa, sugar, fruit, vegetable, animal oils and fats, and bakery products. The main cereal crops and root crops such as cassava and pulses are consumed without processing. The processing of other food products, for example, the roasting of coffee and drying of tea leaves has made very slow progress. An increase in milling capacity for cereals will be required in parallel with recent increases in wheat and maize production in order to reduce dependence on food imports.

Manufactured goods in merchandise trade

33. The absence of or a poor capital goods base in nearly every African country means that a high proportion of total imports consists of manufactured goods, in particular machinery and transport equipment, as shown in table 3, p.21. With few exceptions, the latter imports represent 90 to 100 per cent of national requirements of those goods, a fact which underlines the structural weakness of the industrial sector of African economies.

IV. SIGNIFICANCE OF FOOD PROCESSING

The role of food processing

34. The food-processing industries in Africa play a significant economic and social role in terms of output, employment and MVA. In 1985 the contribution to output of the industry was 14.3 per cent in tropical Africa and 18.3 per cent in North Africa. In the same year, the food-processing manufacturing industry accounted for 10 per cent and 15.9 per cent of total industrial output in developed and developing countries respectively.^{1/} In 1980 the food-processing industry employed 4.5 million of the 20 million workforce employed in the manufacturing sector in the South.^{2/} Food processing accounted on average for about one third of MVA in Africa in 1984 as demonstrated in table 2. Thus, the food-processing subsector binds together a large number of manufacturing activities and represents a very important part of the overall industrial base and economy in many developed and developing countries. Locally processed products in Africa include essentially meat and meat products, dairy products, coarse grains, fish, cocoa, sugar, fruits, vegetables, animal oils and fats, and bakery products.

Table 2: Structure of manufacturing of selected African countries in 1985

| | Distribution of manufacturing value added at current prices (Percentage) | | | | | |
|---------------------------------------|--|-------------------------|-----------------------------|--|-----------|-------|
| | Value added in manufacturing (Current (US\$ million) | Food and agriculture | Textiles and clothing | Machinery and transport equipment | Chemicals | Other |
| 1. Algeria | 6,157 | 26 | 20 | 11 | 1 | 41 |
| 2. Cameroon | 952 | 50 | 13 | 7 | 6 | 23 |
| 3. Côte d'Ivoire | 889 | - | - | - | - | - |
| 4. Egypt | - | 20 | 27 | 13 | 10 | 31 |
| 5. Ethiopia | 492 | 51 | 23 | - | 3 | 22 |
| 6. Ghana | 526 | 53 | 6 | 2 | 4 | 35 |
| 7. Kenya | 631 | 35 | 12 | 14 | 9 | 29 |
| 8. Malawi | 126 | 49 | 13 | 2 | 11 | 25 |
| 9. Morocco | 2,009 | 26 | 16 | 10 | 11 | 37 |
| 10. Nigeria | 7,373 | 29 | 11 | 17 | 9 | 35 |
| 11. Senegal | 474 | 48 | 15 | 6 | 7 | 24 |
| 12. Sierra Leone | 71 | 36 | 4 | - | 38 | 22 |
| 13. Sudan | 498 | 22 | 25 | 1 | 21 | 31 |
| 14. United Republic of Tanzania | 393 | 28 | 26 | 8 | 7 | 31 |
| 15. Zaire | 59 | 40 | 16 | 8 | 8 | 29 |
| 16. Zambia | 513 | 44 | 13 | 9 | 9 | 25 |
| 17. Zimbabwe | 1,314 | 28 | 16 | 10 | 9 | 36 |

Source: Compiled from "World Development Report 1988", World Bank.

1/ "Industry and Development: Global Report 1987", UNIDO, ID/348.

2/ "Industry and Development: Global Report 1986", UNIDO, ID/343.

In Africa, in particular, for several decades to come, food-processing industries are likely to remain the engine for accelerated growth and development of the industrial sector and the economy as a whole because the agricultural and food sector is the mainstay of the economies in most of the African countries.

35. However, inspite of the potential existence of natural endowments for the growth and development of the agricultural sector, the situation is rather disquietening in the African region. The degree of self-sufficiency shows that the food dependency on import and aid of several African countries is critical and will continue to grow worse unless appropriate policy measures are adopted to change the current structure and pattern of food production, processing and trade.

36. A good number of African countries have become dependent on food aid and food imports. In 1986, for instance, an estimated 25 million tons of cereals were imported and a further 5 million tons brought in as food aid^{1/} into the African countries. These imports are costly because they are paid in scarce foreign exchange. A sustained increased domestic food production is the answer in view of the abundant land and water resources available suitable for cereal production on the continent.

37. In this respect, the Third United Nations Development Decade resolution adopted by the United Nations General Assembly strongly emphasized the need for substantive progress towards self-sufficiency and food security in developing countries. An appropriate and well integrated pattern of national, regional and international food production, processing, distribution and consumption was necessary to meet nutritional needs of the population, enlarge the base for industrialization and the diversification of the economic structures, and redress current imbalances in world production.^{2/}

38. The Lima Declaration and Plan of Action on Industrial Development and Co-operation also recognized the basic relationship and complementarity between agriculture and industrial sectors and urged that every effort be mounted to promote agro-based and agro-related industries which assist to arrest rural exodus to the cities and also stimulate food production activities and provide incentive for the establishment of additional natural resource-based industries.^{3/}

39. Given the African situation, a prosperous and successful agricultural sector is crucial for a sustainable dynamic rate and level of the industrialization process. This is because agriculture is a mainstay of the economies. In 1986 the agricultural sector in the African region contributed on average more than 40 per cent to GDP, as compared to about 15 per cent of the manufacturing share to GDP.^{4/} Further, almost all agricultural commodities serve as raw material inputs for industrial transformation. Industrial and food crops, fruits and vegetables, fisheries, livestock and

^{1/} Calculated on basis of table 11.

^{2/} "Goals and objectives: International development strategy for the Third United Nations Development Decade", United Nations General Assembly resolution 36/56, Part II, para.28.

^{3/} "Lima Declaration and Plan of Action on Industrial Development and Co-operation", UNIDO, para.51, PI/38.

^{4/} Calculated on basis of table 8.

livestock products can be locally processed to the benefit of an economy and welfare of the population. The agricultural and industrial sectors, therefore, play complementary and mutually reinforcing roles for growth and development in the African economies.

40. Domestic food production employs on average about 60 per cent of the labour force in Africa often at a low level of productivity. The capital and organizational requirements for absorbing such labour into other sectors of an economy are so prohibitive that a vast number of the people must remain in the rural and food sector for the foreseeable future. Hence a larger portion of the rural population will continue to contribute to the food sector.

41. Increasing agricultural output through change in technology and trade stimulates demands for the products of other sectors such as fertilizers, commercial services, transportation, energy and construction. Equally, agricultural households usually serve as the main markets for a host of consumer items, that is processed foods, textiles and clothing, kerosene and vegetable oils, aluminium hollow ware, radios, bicycles and construction materials for home improvement.

42. As is the case in Asia and some parts of Africa, improved production technology in the leading food sector can provide significant increases in aggregate national income. Growth in real productivity in the food sector enhances real income of small farmers in the rural areas and their purchasing power stimulates production and employment in the industrial and other sectors of the economy.

43. Projections of current trends forecast food imports for Africa by the year 2000 in the order of 40 million tons.^{1/} Within limits, the figure serves to illuminate the relative proportion of impending food problems in Africa in the absence of a realistic, sound and timely structural change of the various economies. The food crisis in Africa should and can be solved in large part by increased national and regional food production.

44. The focus on food processing for consideration for rehabilitation and restructuring is justified on economic, social and political grounds as a major contributor to GDP, employer of a large portion of the working force, potential foreign exchange earner and saver, and it is one of the basic needs of African society. Moreover, in adopting the programme for IDDA (1980-1990), the African Ministers of Industry accorded high priority to the food-processing industry for national and regional food self-sufficiency and also stressed its potential contribution to overall economic and social development through the subsector's widespread linkages.

Past and continuing Consultations on the food-processing subsector

45. Consequently, in view of the strategic industrial importance of the food-processing sector in developed as well as in developing countries, both within the sector and the economy as a whole, a series of Consultations have been carried out since 1977 on various aspects of the food subsector in order to define, clarify and articulate the principal key issues in developing national, subregional, regional and international food-processing policy and programme measures in a more rigorous, systematic, coherent and integrated manner.

^{1/} Alexandratos Nikos: "World agriculture: Towards 2000", study by the Food and Agriculture Organization of the United Nations (FAO), 1988.

46. Some of the main recommendations of past Consultations with reference to food processing are highlighted in the following paragraphs describing the continuing interest attached to the subsector by the UNIDO Secretariat as well as the United Nations.

47. Greater emphasis placed on the integrated approach in agro-industrial and food industry development by the First Consultation is being adopted widely in technical co-operation activities in developing countries. In line with earlier recommendations, Consultations deal with selected subsectors of the food-processing industry in order to focus on priority and crucial industrial development crises.

48. Another issue that has been dealt with in earnest is the question of industrial rehabilitation and restructuring in Africa with special focus on the food-processing subsector in view of the chronic underutilization of installed capacities and industrial stagnation and decline which continue to plague the African region.

49. Recommendations of past Consultations in the agro-industrial sector, especially the food-processing subsector, underline the need for co-operation and consultation with other specialized agencies concerned with the United Nations system. As a result, close working relationships and contacts have been maintained with FAO, UNCTAD and the International Trade Centre (ITC) which brought about a more concerted effort and co-ordinated activities with the UNIDO Secretariat in tackling the obstacles hindering the development of the sector, beginning from raw material production to marketing outlet.

50. The realization of the integrated approach in the whole development of agro-industries involved not only the development of the food-processing industry itself but also the development of up- and downstream industries such as fertilizers and other agro-chemicals to contribute to the increased production on the one hand and on the other to the development of agricultural machinery industries and the forthcoming activities in such closely related industries as food packaging, packaging materials and packaging machinery.

51. The growing contribution of food processing to the rapid industrialization of the African countries requires full mobilization of domestic as well as external resources to realize further growth and development within the sectors and economies concerned. This demands a special effort in intensifying concerted international co-operation within the framework of a South-South and South and North basis. The pattern of international trade also needs to be reviewed and restructured with a view to secure expanded regional and interregional markets, thereby creating opportunities for enhanced export earnings and incentives for the industrialization of African countries.

V. COMPONENTS OF REHABILITATION/RESTRUCTURING: FOOD PROCESSING

52. Industrial rehabilitation and restructuring is a continuing process of activities at macro-industrial, subsectoral and enterprise levels. Such rehabilitation and restructuring programmes encompass not only physical, hardware or financial aspects, but also take into account economic and financial constraints as well as management, policy measures and institutional structure, product and process, technology, and domestic and foreign markets.

Food-processing industrial constraints

53. The rehabilitation and restructuring issues and constraints of the food-processing industry in Africa are considered within the framework of micro- and macro-economic levels.

Micro-economic bottlenecks at the enterprise level

54. At the micro-economic level, food-processing industrial enterprises have to be competitive, efficient, productive and profitable, with optimum levels of production for sustained operation. Efficiency and profitability are determined by input factor prices and market demand.

55. The lesson to be drawn from the two observations of rehabilitation and restructuring in Africa is that in spite of the high protection and subsidy afforded by governments, the food-processing industries could produce neither the quality nor the quantity of products at a price demanded by internal and/or external markets. Insufficiency and unprofitability could be traced to such factors as poor management and organization, out-dated machinery and equipment, lack of spare parts, repair and maintenance, inefficient supplies of raw material, unskilled workforces, limited access to markets and supporting institutions, as well as lack of infrastructure facilities and services. These are, as it were, the immediate causes and manifestations of industrial deterioration. On the other hand, the underlying real causes must be found at the level of macro-economic activities which are discussed at a later stage of the document.

(a) Management and organization

56. The linchpin in an industrial establishment must be proper management and organization. A skilled, knowledgeable, competent and experienced manager knows how to organize people and work, based on clearly laid down policies and programmes and supported with adequate operational funds for achieving the objective of an industrial enterprise.

57. The position of an enterprise in a market is dynamic in terms of business potential, market share and relative competitiveness. The success or failure of an enterprise is related to the ability to adopt quickly to changes in demand and prevailing economic and non-economic environmental conditions.

58. In this situation, the management of an industrial enterprise must be capable of planning and handling financial accounting, stock control, order processing and invoicing, cost and management accounting, production control, purchase order processing and fixed asset accounting. Above all, an industrial enterprise requires flexibility and ability to match demand of current as well as future industrial development.

59. Deficiencies in management - especially at the middle management level - are widely prevalent. In this respect human resources development in general and specialized industrial education and training including the establishment of vocational and technological schools at different levels are an indispensable part of the rehabilitation and restructuring process. In view of the small size of many African countries, it would be economical to establish such industrial education and training facilities at subregional and regional levels. This is an essential input in the rehabilitation and restructuring programme in Africa.

(b) Machinery and equipment

60. Industrial food-processing machinery and equipment imported through aid or otherwise in Africa come in a variety of technologies and capacities. More often than not they tend to be capital intensive with all the consequences of displacement of employment, need for spare parts, replacement parts, repairs, maintenance and related future costs.

61. The selection of machinery and equipment is frequently technologically inappropriate to the conditions in the country. Some are second hand and out of date; the results are frequent production breakdowns, low efficiency and operation below capacity. There is also a lack of spare parts and repair systems.

62. In this case, policy issues relate to the question of adoption of appropriate technology and measures, especially education, training, research and development in order to enhance technological capability. Machinery and equipment imported need to be examined for their appropriateness, usefulness and benefit to the country.

(c) Raw material supply

63. In many African countries, the supply of raw materials is a serious handicap for the food-processing industries. These raw material supplies tend to be unreliable, expensive, not standardized, and of low quality, forcing plants to operate at low capacity. Thus the plant becomes inefficient, leading to losses and liquidity problems. On the other hand, even those raw material supplies that are imported are subject to problems of dependence on foreign suppliers and foreign exchange allocation.

64. The problem of supply of raw materials is also related to excessive investments in import-intensive industries and tends to overstretch the import capability of the industrial sector. The allocation of resources needs to be selective and, as far as it is possible and practicable, the raw material supply should be based on locally available resources. It is essential to ensure the availability of an adequate supply of raw materials in quantity, quality, price and regularity needed by a plant.

(d) Infrastructure

65. Physical infrastructure, principally power (electricity, oil and gas), water and transport network are key lifeline factors for an industrial processing plant. Frequent power failures and shortage of oil and gas are usual causes of inefficiency and capacity underutilization in food-processing plants in many countries.

66. Industrial processing plants consume a vast amount of water in their operations. Several African food-processing industries suffer from shortage of water which is a cause of frequent stoppages. It is essential to secure adequate supplies of water in quality and quantity required in order to operate the plant efficiently. Regular chemical and microbiological tests should also be carried out to ensure an acceptable standard of hygiene and cleanliness.

67. In many countries inadequacy of transportation networks (air, sea, land) and communications (telephone, telex, radio, telefax) seriously constrains trade and business transactions in processed products at national, regional and international levels. Transport costs are a determining factor in competitiveness of a final product.

68. In studying the adequacy of infrastructure, it is necessary to give serious consideration to the location of an industrial plant. Hence, in planning a food-processing plant in any African country, it is necessary to carry out an economic and technical appraisal of major inputs, especially power, water and transportation, and their effective contribution to the costs of a final product. All the components of the infrastructure mentioned hereabove need adequate repair, maintenance and replacement equipment in order to avoid overall deterioration and obsolescence.

(e) Market and supporting institutions

69. Underutilization, idleness and economic losses of many food-processing plants in Africa are mainly attributed to overestimation of actual market capacity. In certain cases, no proper market research has been carried out before a decision is made on the investment. In other cases, the survey might have been superficial and led to inaccurate assessment of current and future demands of a market. The domestic and export markets should be studied carefully on the basis of a short-, medium- and long-term framework.

70. In their search for foreign currency, African countries tend to establish food industries primarily channelled towards the export market. In view of the dwindling overseas market opportunities, it is vital to change old traditions and attitudes. It is important that processed food products are, in the first instance, geared to satisfy the needs and demands of local consumers and any existing surplus exported.

71. The assessment of demand for processed foods by domestic consumers requires precise information. Such information should be able to reveal the size and location of consumers, their tastes, preferences and income. It is important to bear in mind that due to low income a majority of domestic consumers may not be able to afford to buy elaborately processed foods. Hence, the price should be reasonable. Consumption patterns, including taste and preferences could be changed with sales promotion and public education. It is important as well as making economic sense to stress that any food-processing plant has a better chance of survival, growth and future expansion if the output is based on a strong sustained domestic market demand.

72. The assessment of commercial external demand for food products is more difficult and requires further reliable and detailed information on commercial aspects such as packaging, pricing, credit, transport, storage, sales production, trade rules and procedures, quality and access to markets, in particular information on tariff and non-tariff barriers.

73. Food-processing industries can equally benefit from dynamic government-led marketing policies and services. As far as marketing policies go, a government has influence and a role in export and import policies on the development of the food-processing industries as well as in relation to tax exemption and subsidies, as the need arises. Governments can provide useful services in marketing by way of promoting the food-processing industries.

(f) Investment in research and development

74. It is recognized by all concerned that research and development play a key role in creating and promoting material wealth through growth and competitiveness of the food-processing industry. The importance of technology

and know-how transfer cannot be emphasized enough. It should be a primary concern of all food processors, researchers, technicians and engineers. Measures need to be taken for more vigorous moves to raise the productive capacity and competitive level of the food-processing industry in Africa.

75. A strong and dynamic food-processing industry depends, *inter alia*, on the existence of sound agro-industrial strategies, policies and programmes, with adequate investment resources and budgetary allocation. Government strategies and policies on education, training, the transfer of technology, and research and development are key underpinnings for the operation of a sound and successful food-processing industry.

76. The discussion above summarizes some of the issues that need to be addressed to and resolved effectively through rehabilitation programmes at the level of the food-processing enterprises. These problems are essentially of micro-economic industrial activities that have to be tackled within the framework of technical co-operation. This is more of a short-term remedy, a "first-aid patching up" exercise. It is generally recognized that the underlying causes of the low level of industrial development must be found at the macro-economic level of the industry, sector and economy with linkages to regional and international industrial environment.

Macro-economic obstacles to food-processing industries

77. The capacity to change and to adapt is a fundamental characteristic of a healthy industrial enterprise. The process of decline must be detected and arrested in time, but this is a function of research and understanding of changing demand and economic environment. This is the time when existing strategies, policies and programmes are evaluated and the necessary adjustment evolved and implemented accordingly.

78. The growth of the food-processing industry in Sub-Saharan Africa has been slow due to a combination of internal and external macro-economic obstacles.

(a) Internal obstacles

79. Internal obstacles are associated with national strategies, policies, attitudes and supporting institutions, including social and physical infrastructure.

The policy and administrative environment

80. At the national level, the strategies and policies which affect industrial development involve particularly fiscal, monetary and trade issues. More specifically, pricing policies, access to credit facilities and the nature of tax structure and tariff regimes are determining factors in industrial efficiency and competitiveness. It is important to ensure that the policies formulated create a favourable economic environment for competitiveness and that the administrative set-up sees to it that the rules and regulations are implemented in an even-handed way.

81. The industrial policies should be under continuous review to ensure they facilitate growth and that potential obstacles are removed in time.

82. Inappropriate industrial policies, lack of political will and weak administrative structures have so far hampered timely reform and progress.

83. Banking facilities, marketing research, promotional and educational networks are valuable in enhancing the efficiency and competitiveness of industrial development.

(b) Global environment

84. Global macro-economic developments also influence food-processing industries in Africa in several ways, inter alia, exchange rate fluctuations, international interest rates, market access, and the transfer of technology. Above all, the heavy external debt burden and debt servicing is a stumbling block to sustaining domestic industrial policy reforms required for rehabilitation and restructuring in Africa.

85. Exchange rate fluctuations affect trade volumes and the size of debt burdens. High international interest rates induce high costs of new foreign credits and the discouraging effect which high international interest rates have on food-processing industry investment.

86. Steady economic growth in industrialized countries can secure demand and access to markets for processed food exports as well as adequate financial flows. Non-tariff barriers and subsidies pose serious concern in the development of manufactured products for export to the industrialized markets.

87. Of more immediate concern to most manufacturing in Africa is the absence of well-developed regional markets. Despite some slender progress in certain branches of industry, i.e. cement industry, regional and trade expansion remain largely an untapped source of export earnings. This is an area that needs to be explored further by the African countries for intra-regional industrial establishment. This is a natural extension and expansion of domestic industries, while higher scale of economies permit efficient operation of industrial establishments. Regional co-operation holds great potential for the full utilization of installed capacity.

(i) Financial flows^{1/}

88. Africa's total foreign debt grew at an average annual rate of close to 25 per cent during the period 1973-1980. By 1986 the growth rate had slowed down to less than 9 per cent.

89. The sharp decline in growth of the debt reflects the credit squeeze. For most African countries, particularly for those of the Sub-Saharan region, there has been a sharp fall in financial flows. According to the United Nations Secretariat for the Advisory Group on Financial Flows for Africa, the net credit flows in 1985-1987 were US\$2.4 billion lower than in 1979-1981 for Sub-Saharan countries excluding Nigeria. The increase of official grants was US\$1.1 billion. The total net effect was a reduction in financial flows of US\$6.5 billion, including terms of trade losses of US\$2.9 billion, reduced foreign investment of US\$0.2 billion and increased interest payment of US\$2.1 billion.

^{1/} "Regenerating African manufacturing industry: Country briefs", UNIDO, 1988, PPD.97.

(ii) The effects of debt on manufacturing and its rehabilitation

90. Heavy debt servicing burden affects food-processing establishments in many ways. Some of the more direct and significant effects include the net outflow of financial resources (foreign exchange) resulting in:

- reduced capability to import intermediate goods and spare parts;
- reduced availability of investment funds;
- reduced economic policy-making options.

91. The import dependence of African manufacturing for every product, raw material, spare part and capital good means that the lack of foreign exchange resulting from a heavy debt service simply prevents production, regardless whether this would be economically viable. Continuation of this trend would lead to staggering physical and social costs in terms of employment, idle or underutilized installed capacity and social unrest.

92. The process of switching from import dependence to domestic resource-based production does not appear to have taken deep root in the African industry which is an element of the future industrial strategy.

93. The size of the debt issue has also affected future access to investment and other finance. Apart from official aid, renewed credit worthiness and investor confidence are essential for industrial rehabilitation, restructuring, growth and development.

94. Finally, the heavy debt service burden seriously restricts the policy options of governments in planning. In considering the immediate debt problems, crucial long-term development aspects are neglected.

**VI. MAJOR ISSUES IN INDUSTRIAL REHABILITATION/RESTRUCTURING:
FOOD PROCESSING IN AFRICA**

95. The principal issues that emerge for consideration by the African Governments and the international community revolve around:

(a) Appropriate industrial strategy and policy reforms which create a favourable industrial climate for reversing current industrial stagnation and decline towards autonomous growth and development;

(b) Appropriate industrial technological development and innovation for optimum installed capacity utilization for self-reliant and self-sustained industrial growth and development at national, subregional and regional levels;

(c) The need for mobilization of adequate financial resources, domestic as well as external, for effective rehabilitation and restructuring of the food-processing subsector. Problems related to finance, investment flow and the current crushing debt burden and debt burden obligations are key factors in African industrial growth and development and must be tackled appropriately;

(d) The nature and dimension of the industrial dislocation in Africa which demand new and innovative areas of technical co-operation for finding appropriate response to the critical industrial problems on hand. The proposed new approach would require UNIDO and other bilateral and multilateral programmes concerned to improve, upgrade and reinforce their assistance and support in industrial strategies, policy and programme design and subsequent implementation in the African countries individually or collectively at national, subregional and regional levels.

Review and reform of industrial strategies and policies

96. Policies affecting restructuring relate, *inter alia*, to monetary, fiscal and trade aspects such as exchange rate, foreign exchange allocation, tariff regimes, price controls, financial sector policies, development banks for industry, policies affecting capital and labour costs and the impact of policies on the structure of industrial protection. All these policy measures are required to accompany a rehabilitation and restructuring programme, and it is necessary to make sure they facilitate and create further a suitable policy environment for achieving the objective of efficient operation of enterprises, a subsector, the industrial sector and the economy as a whole.

97. An industrial rehabilitation and restructuring programme is not an end to, but a means of attaining a higher order of objectives, initially in terms of efficiency and competitiveness, and then contribute towards the overall development objectives of the country and countries concerned. Hence, there are several issues that African Governments need to consider in parallel to the rehabilitation and restructuring exercise as a reinforcing element.

98. These vital industrial issues relate, among others, to industrial liberalization, small- and medium-scale enterprise development, integrated agro-industrial policies and programmes focussed on strengthening agriculture-industry linkages as well as linkages within the industrial sector itself, technology and development of human resources, and promotion of regional co-operation. Governments need to adopt appropriate strategies and policies on the above issues as prime areas for industrial rehabilitation, restructuring and sustained development.

99. A new industrial environment also demands creation or strengthening of administrative, technical and scientific institutions which facilitate the implementation of new measures to achieve the objectives of rehabilitation and restructuring of the industrial sector on a dynamic and self-sustaining basis.

100. All these institutions and the industries to be rehabilitated would not be fully operational and run efficiently unless they are manned by trained, experienced and disciplined manpower. In this connection, it is absolutely essential to have relevant educational and training facilities that could cater for industrial knowledge and skill, and ability to acquire new technology, adapt, assimilate, modify, innovate, fabricate and diffuse technology internally for higher production and productivity.

101. Technical change is the source of most growth in productivity in the long term, since continued investment of capital that embodies traditional technology quickly faces low marginal returns. Scientific and technological advance in industrial development has made the discovery of technical innovations much more dependent on knowledge and capital investment.

102. Existence of industrial research and development is a prerequisite for enhancing local industrial knowledge, skills and other needs for improving the industrial absorption and productive capacity of a country. Development of human resources coupled with institutions for industrial research and development are the centre-piece for dynamic and efficient rehabilitation, restructuring and development of the food and other industrial sector activities. Most such research is conducted by publicly-funded centres for industrial research and development. It is important for African countries to establish or strengthen industrial research and development institutions, at least on a subregional and regional basis, depending on the merit of the case.

103. Industrial research and development is a possible area where UNIDO could provide advice, support and assistance, be it on a country, subregional or regional basis.

Financing of industrial rehabilitation/restructuring

104. In order to achieve all these measures and tasks required for the rehabilitation and restructuring of food-processing industries, an enormous amount of resources and finance would need to be mobilized from domestic and external sources.

105. Not unnaturally a vast amount of resources, human, material and financial, for the rehabilitation and restructuring exercise would be raised from internal sources, that is mainly through taxation and credit. Since resources are limited, planning and sound financial management are needed. In view of this constraint, great care and consideration must be given to the order of priority, with coherent and consistent administration. An initial estimated fund of US\$5 billion may be needed to finance industrial rehabilitation and restructuring in the African region.^{1/}

106. African Governments in the first instance would need to create a favourable economic climate through fiscal, monetary and other measures in order to attract foreign investors. Approaches which might stimulate investment in industrial rehabilitation/restructuring include inter alia:

- (a) a dynamic and articulate national industrial policy and strategy;
- (b) a system of incentive and other promotional measures;
- (c) replenishment of development banking institutions;
- (d) harmonization of policy and incentive measures to promote specialization and complementarity in a regional framework.

International co-operation

(a) Regional industrial co-operation and integration

107. Regional co-operation offers a patent means for the expansion of markets for processed food and other industrial products. In 1988, intra-African trade reached no more than 4 per cent of total trade. There is ample scope and possibility for expanding and exploiting subregional and regional industrial trade and development among the African countries.^{2/}

108. African countries would need to redouble their efforts, time and resources to reinforce and develop regional markets. Domestic markets complemented with regional and extra-regional markets are the possible answers to give impulse and added justification to industrial rehabilitation/restructuring.

^{1/} An estimate ventured by the UNIDO Secretariat.

^{2/} "Economic report on Africa 1989", ECA, April 1989.

(b) technical and financial co-operation

109. The rehabilitation and restructuring process of the food-processing industries in Africa would consume enormous resources and effort on the part of African Governments. It will certainly tax the will and capacity of these countries in tackling the various issues and problems effectively. There is a need for re-orientation of technical and financial co-operation programmes to achieve efficiently and effectively rehabilitation/restructuring objectives. These could be processed, e.g. on the following:

(a) Design, formulation and implementation of industrial strategies, policies and programmes as prerequisites for the identification, formulation and implementation of specific rehabilitation and restructuring of industrial projects;

(b) Assistance in establishment or strengthening of industrial institutions concerned with:

- (i) industrial education and training;
- (ii) industrial research and development;
- (iii) industrial banking institutions;
- (iv) investment promotion;

(c) Capacity building for spare parts production and repair and maintenance;

(d) Increased financial flows through new and innovative lending mechanisms; strengthening of development banking institutions and investment promotion programmes; and instituting policy measures and incentive measures to stimulate financial flows to the food-processing sector;

(e) Exchange of information and experiences to facilitate policy, programme and project formulation.

Table 3: Africa: Share of manufactures in merchandise trade, 1985

(Percentage)

| | Imports | | | Exports | | |
|------------------------|-------------------|-----------------------|-----------|-------------------|-----------------------|-----------|
| | Machinery etc. | Other manufactures | Total | Machinery etc. | Other manufactures | Total |
| Algeria | 32 | 41 | 73 | - | 2 | 2 |
| Benin | 17 | 30 | 77 | 13 | 3 | 16 |
| Burkina Faso | 24 | 30 | 54 | 4 | 6 | 10 |
| Burundi | 37 | 33 | 70 | - | 16 | 16 |
| Cameroon | 38 | 41 | 79 | - | 2 | 2 |
| Central African Rep. | 36 | 41 | 77 | - | 33 | 33 |
| Congo | 48 | 36 | 34 | - | 5 | 5 |
| Côte d'Ivoire | 22 | 36 | 56 | 2 | 8 | 10 |
| Egypt | 25 | 36 | 61 | - | 10 | 10 |
| Ethiopia | 28 | 23 | 52 | - | - | - |
| Ghana | 40 | 28 | 68 | - | 5 | 5 |
| Kenya | 23 | 26 | 51 | 2 | 11 | 13 |
| Liberia | 27 | 27 | 54 | - | 1 | 1 |
| Libyan Arab Jamahiriya | 36 | 40 | 76 | 1 | 1 | 2 |
| Madagascar | 27 | 30 | 57 | 1 | 8 | 9 |
| Malawi | 25 | 47 | 72 | 1 | 4 | 5 |
| Mali | 26 | 40 | 68 | 1 | 16 | 17 |
| Mauritania | 35 | 20 | 55 | - | 1 | 1 |
| Mauritius | 12 | 39 | 51 | - | - | - |
| Morocco | 16 | 24 | 42 | 1 | 39 | 40 |
| Mozambique | 33 | 26 | 59 | 1 | 24 | 25 |
| Niger | 25 | 49 | 74 | - | - | - |
| Nigeria | 35 | 37 | 72 | - | - | - |
| Rwanda | 35 | 35 | 70 | - | 1 | 1 |
| Senegal | 28 | 32 | 60 | 1 | 9 | 10 |
| Sierra Leone | 15 | 21 | 36 | - | 32 | 32 |
| Somalia | 32 | 24 | 56 | 1 | 1 | 2 |
| Sudan | 31 | 33 | 64 | 1 | 3 | 4 |
| Togo | 11 | 27 | 38 | - | 13 | 13 |
| Tunisia | 31 | 33 | 64 | 5 | 37 | 42 |
| Zaire | 36 | 31 | 67 | - | 10 | 10 |
| Zambia | 29 | 42 | 71 | - | 2 | 2 |
| Zimbabwe | 35 | 26 | 31 | 1 | 24 | 25 |
| Average | 29 | 34 | 63 | 2 | 11 | 13 |

Source: Compiled from "World Development Report 1987", tables 11 and 12, World Bank; and ECA estimates.

Table 4: Employment and productivity^{a/} in the manufacturing sector: 12 selected African countries, 1975-1985

| | <u>Thousand workers employed</u> | | | <u>Annual percentage growth rate</u> | |
|-------------------------|----------------------------------|------------------|--------------------------|--------------------------------------|------------------|
| | <u>1975</u> | <u>1980</u> | <u>1985^{b/}</u> | <u>1975-1980</u> | <u>1980-1985</u> |
| Algeria | 191 | 329 | 422 | 11.5 | 5.1 |
| Cameroon | 29 | 29 ^{b/} | 29 | 0.1 | 0.1 |
| Central African Rep. | 5 | 3 | 4 | -9.7 | 5.9 |
| Egypt | 731 | 868 | 1 003 | 3.5 | 2.9 |
| Ethiopia | 60 | 76 | 91 | 4.8 | 5.1 |
| Ghana | 77 | 80 | 62 | 1.0 | -5.0 |
| Kenya | 120 | 162 | 200 | 6.2 | 4.3 |
| Madagascar | 42 | 40 ^{b/} | 40 | -1.0 | 0.1 |
| Morocco | 151 ^{b/} | 193 | 176 | 5.0 | -1.9 |
| Nigeria | 241 | 291 | 313 | 3.9 | 1.5 |
| Senegal | 24 | 32 | 24 | 5.9 | -5.6 |
| Tunisia | 77 | 125 | 161 | 10.2 | 5.2 |
| United Rep. of Tanzania | 76 ^{b/} | 101 | 109 | 5.8 | 1.5 |
| Zambia | 56 | 59 | 68 | 0.9 | 2.6 |
| Zimbabwe | 152 | 161 | 180 | 1.4 | 6.4 |

Productivity in US dollars

| | <u>1975</u> | <u>1980</u> | <u>1985^{b/}</u> |
|-------------------------|---------------------|----------------------|--------------------------|
| Algeria | 7 672 | 13 589 | 17 059 |
| Cameroon | 6 754 | 14 871 ^{b/} | 15 462 |
| Central African Rep. | 4 364 ^{b/} | 7 239 ^{b/} | 4 367 |
| Egypt | 2 126 | 2 585 | 5 784 |
| Ethiopia | 3 520 | 6 009 | 6 663 |
| Ghana | 6 272 | 11 005 | 2 331 |
| Kenya | 3 161 | 5 482 ^{b/} | 3 509 |
| Madagascar | 3 197 | 5 483 ^{b/} | 3 361 |
| Morocco | 5 646 ^{b/} | 8 925 | 6 371 |
| Nigeria | 7 598 | 12 128 | 32 399 |
| Senegal | 9 957 | 8 164 | 10 567 |
| Tunisia | 4 413 | 7 547 | 6 036 |
| United Rep. of Tanzania | 2 171 ^{b/} | 3 514 ^{b/} | 3 251 |
| Zambia | 8 672 | 13 265 | 9 380 |
| Zimbabwe | 9 205 | 7 258 ^{b/} | .. |

a/ Value added per worker in current US dollars.

b/ Estimates.

Source: Compiled from "Industry and Development: Global Report 1987", UNIDO, ID/348.

Table 5: Africa: Macro-economic indicators: Selected countries, 1986

| | <u>GDP (1980 constant million US \$)</u> | <u>GDP per capita (1980 constant US \$)</u> | <u>Total MVA (current million US \$)</u> | <u>MVA share of GDP (%)</u> | <u>Annual manufacturing labour force</u> | <u>MVA per worker (current thousand US \$)</u> | <u>Manufacturing gross output (current million US \$)</u> | <u>Gross output per worker (current thousand US \$)</u> |
|------------------|--|---|--|---------------------------------|--|--|---|---|
| 1. Algeria | 46689 | 2082 | 8814 | 12.9 | 625694 | 14.0 | 22400 | 35.8 |
| 2. Egypt | 30814 | 621 | 2722 | 13.4 | 1018578 | 2.6 | 10399 | 10.2 |
| 3. Sudan | 7928 | 357 | 424 | 7.5 | - | - | 1343 | - |
| 4. Ethiopia | 4714 | 104 | 614 | 12.1 | 96796 | 6.3 | 1484 | 15.3 |
| 5. Kenya | 8506 | 402 | 36 | 0.5 | 198631 | 0.1 | 191 | 0.9 |
| 6. Somalia | 2238 | 470 | 41 | 2.3 | 18995 | 2.2 | 94 | 4.9 |
| 7. Tanzania | 5433 | 241 | 187 | 4.1 | 93058 | 2.0 | 642 | 6.9 |
| 8. Zambia | 4069 | 589 | 361 | 20.4 | 60449 | 5.9 | 783 | 12.9 |
| 9. Zimbabwe | 6876 | 817 | 1875 | 33.8 | 166816 | 11.2 | 4455 | 26.7 |
| 10. Benin | 1397 | 345 | 70 | 4.6 | 6908 | 10.2 | 244 | 35.3 |
| 11. Burkina Faso | 1699 | 251 | 186 | 13.5 | 8968 | 20.8 | 485 | 54.0 |
| 12. Gambia */ | 256 | 388 | 8 | 5.9 | 1850 | 4.6 | 29 | 15.8 |
| 13. Nigeria */ | 75663 | 849 | 7518 | 9.8 | 325660 | 23.0 | 14485 | 44.4 |
| 14. Cameroon | 9046 | 865 | 1232 | 10.5 | 31585 | 39.0 | 3086 | 97.7 |
| 15. Senegal | 3806 | 575 | 318 | 8.4 | 37662 | 8.4 | 1340 | 35.5 |

*/ 1983.

Source: Compiled from "Economic indicators of African development", UNIDO, 1988, PPD.94.

Table 6: Africa: Food products share indicators in manufacturing, 1986

| | <u>Share in total MVA (%)</u> | <u>MVA per worker (current thousand US \$)</u> | <u>Sharing in manufacturing gross output (%)</u> | <u>Gross output per worker (current thousand US \$)</u> |
|----------------------------|-----------------------------------|--|--|---|
| 1. Algeria | 17.3 | 19.2 | 22.1 | 62.3 |
| 2. Egypt | 15.8 | 2.6 | 19.6 | 12.5 |
| 3. Sudan | 14.2 | - | 22.8 | - |
| 4. Ethiopia | 25.2 | 8.1 | 22.8 | 17.8 |
| 5. Kenya | 24.7 | 0.2 | 31.8 | 1.4 |
| 6. Somalia | 26.3 | 1.6 | 30.7 | 4.2 |
| 7. United Rep. of Tanzania | 18.8 | 1.6 | 20.8 | 6.4 |
| 8. Zambia | 11.8 | 2.5 | 20.1 | 9.3 |
| 9. Zimbabwe | 14.8 | 10.9 | 23.9 | 42.1 |
| 10. Benin | 40.7 | 10.6 | 48.0 | 43.4 |
| 11. Burkina Faso | 42.7 | 26.3 | 47.0 | 75.2 |
| 12. Gambia */ | 35.9 | 3.1 | 57.7 | 17.0 |
| 13. Nigeria - | 12.0 | 22.5 | 12.8 | 46.0 |
| 14. Cameroon | 11.2 | 56.2 | 13.2 | 167.0 |
| 15. Senegal | 40.8 | 6.5 | 42.1 | 28.5 |

*/ 1983.

Source: Compiled from "Economic indicators of African development", UNIDO, 1988, PPD.94.

Table 7: Africa: Foreign debt, selected countries, 1986

| | <u>Foreign debt</u> <u>(current million US \$)</u> | <u>Foreign debt share</u> <u>of GDP (%)</u> | <u>Foreign debt share</u> <u>of exports (%)</u> | <u>Debt service share</u> <u>of exports (%)</u> |
|------------------|---|--|--|--|
| 1. Algeria | 20020 | 29.3 | 229.7 | 57.0 |
| 2. Egypt | 18500 | 83.0 | 474.2 | 33.9 |
| 3. Sudan | 7500 | 133.0 | 3273.4 | - |
| 4. Ethiopia | 1989 | 39.2 | 503.7 | 21.5 |
| 5. Kenya | 3440 | 49.7 | 331.6 | 23.2 |
| 6. Somalia | 1415 | 77.9 | 4567.1 | 44.4 |
| 7. Tanzania | 2981 | 46.5 | 957.4 | 16.4 |
| 8. Zambia | 3570 | 201.3 | 605.6 | - |
| 9. Zimbabwe | 1712 | 30.8 | 237.9 | 19.9 |
| 10. Benin | 780 | 50.9 | 700.1 | 23.0 |
| 11. Burkina Faso | 615 | 44.4 | 1935.3 | 14.8 |
| 12. Gambia | 228 | 157.3 | 747.4 | 11.3 |
| 13. Nigeria | 21880 | 46.2 | 287.9 | 23.0 |
| 14. Cameroon | 2871 | 33.6 | 117.0 | 8.4 |
| 15. Senegal | 2456 | 65.0 | 772.0 | - |

Source: Compiled from "Economic indicators of African development", UNIDO, 1988, PPD.94.

Table 8: Africa: Basic indicators and structure of production

| Low-income economies | Population (Millions) Mid-1966 | Area (Thousands of square kilometers) | GNP per capita Dollars 1966 | GNP (millions of dollars) | | Distribution of gross domestic product (percent) | | | | | | | |
|-------------------------|--------------------------------|---------------------------------------|-----------------------------|---------------------------|--------|--|------|----------|------|---------------|------|----------------|------|
| | | | | 1965 | 1966 | Agriculture | | Industry | | Manufacturing | | Services, etc. | |
| | | | | | | 1965 | 1966 | 1965 | 1966 | 1965 | 1966 | 1965 | 1966 |
| 1 Ethiopia | 43.5 | 1,222 | 120 | 1,180 | 4,960 | 58 | 48 | 14 | 15 | 7 | 10 | 28 | 36 |
| 2 Burkina Faso | 8.1 | 274 | 150 | 260 | 930 | 53 | 45 | 20 | 22 | .. | .. | 27 | 33 |
| 3 Malawi | 7.4 | 119 | 160 | 220 | 1,100 | 50 | 37 | 13 | 18 | .. | 12 | 37 | 45 |
| 4 Zaïre | 31.7 | 2,345 | 160 | 3,140 | 6,020 | 21 | 29 | 26 | 36 | 16 | .. | 53 | 35 |
| 5 Mali | 7.6 | 1,240 | 180 | .. | 1,650 | .. | .. | 50 | 13 | .. | 7 | .. | 37 |
| 6 Mozambique | 14.2 | 882 | 210 | .. | 4,300 | .. | 35 | .. | 12 | .. | .. | .. | 53 |
| 7 Madagascar | 10.6 | 587 | 230 | 670 | 2,670 | 31 | 43 | 16 | 16 | 11 | .. | 53 | 41 |
| 8 Uganda | 15.2 | 236 | 230 | 1,100 | 3,310 | 52 | 76 | 13 | 6 | 8 | 5 | 35 | 18 |
| 9 Burundi | 4.8 | 28 | 240 | 150 | 1,090 | .. | 58 | .. | 17 | .. | 10 | .. | 25 |
| 10 Tanzania | 23.0 | 945 | 250 | 790 | 4,020 | 46 | 59 | 14 | 10 | 8 | 6 | 40 | 31 |
| 11 Togo | 3.1 | 57 | 250 | 190 | 980 | 45 | 32 | 21 | 20 | 10 | 7 | 34 | 48 |
| 12 Niger | 6.6 | 1,267 | 260 | 670 | 2,080 | 68 | 46 | 3 | 16 | 2 | 4 | 29 | 39 |
| 13 Benin | 4.2 | 113 | 270 | 220 | 1,320 | 59 | 49 | 8 | 13 | .. | 4 | 33 | 37 |
| 14 Somalia | 5.5 | 638 | 280 | 220 | 2,320 | 71 | 58 | 6 | 9 | 3 | 6 | 24 | 34 |
| 15 Central African Rep. | 2.7 | 625 | 290 | 140 | 900 | 46 | 41 | 16 | 12 | 4 | 4 | 38 | 47 |
| 16 Botswana | 6.2 | 26 | 290 | 150 | 1,850 | 75 | 40 | 7 | 23 | 2 | 16 | 18 | 37 |
| 17 Kenya | 21.2 | 583 | 300 | 920 | 5,960 | 35 | 30 | 18 | 20 | 11 | 12 | 47 | 50 |
| 18 Zambia | 6.9 | 753 | 380 | 1,060 | 1,660 | 14 | 11 | 54 | 48 | 6 | 20 | 32 | 41 |
| 19 Sierra Leone | 3.8 | 72 | 310 | 320 | 1,180 | 34 | 45 | 28 | 22 | 6 | 4 | 38 | 33 |
| 20 Sudan | 22.6 | 2,506 | 320 | 1,330 | 7,670 | 54 | 35 | 9 | 15 | 4 | 7 | 37 | 50 |
| 21 Lesotho | 1.6 | 30 | 370 | 50 | 230 | 65 | 21 | 5 | 27 | 1 | 13 | 30 | 52 |
| 22 Ghana | 13.2 | 239 | 390 | 2,050 | 5,720 | 44 | 45 | 19 | 17 | 10 | 12 | 38 | 39 |
| 23 Mauritania | 1.8 | 1,031 | 420 | 160 | 750 | 32 | 34 | 36 | 24 | 4 | .. | 32 | 42 |
| 24 Senegal | 6.8 | 196 | 420 | 810 | 3,740 | 25 | 22 | 18 | 27 | 14 | 17 | 56 | 51 |
| 25 Chad | 5.1 | 1,284 | .. | 290 | .. | 42 | .. | 15 | .. | 12 | .. | 43 | .. |
| 26 Guinea | 6.3 | 246 | .. | 520 | 1,980 | .. | 40 | .. | 22 | .. | 2 | .. | 38 |
| Middle-income economies | | | | | | | | | | | | | |
| 27 Liberia | 2.3 | 111 | 460 | 270 | 990 | 27 | 37 | 40 | 28 | 3 | 5 | 34 | 35 |
| 28 Morocco | 22.5 | 447 | 590 | 2,950 | 14,760 | 23 | 21 | 28 | 30 | 16 | 17 | 49 | 49 |
| 29 Zimbabwe | 8.7 | 391 | 620 | 960 | 4,940 | 18 | 11 | 35 | 46 | 20 | 30 | 47 | 43 |
| 30 Nigeria | 103.1 | 924 | 640 | 4,190 | 49,110 | 53 | 41 | 19 | 29 | 7 | 8 | 29 | 30 |
| 31 Côte d'Ivoire | 10.7 | 323 | 730 | 760 | 7,320 | 47 | 34 | 19 | 24 | 11 | 16 | 33 | 40 |
| 32 Egypt | 49.7 | 1,001 | 760 | 4,550 | 40,850 | 29 | 20 | 27 | 29 | .. | .. | 45 | 51 |
| 33 Botswana | 1.1 | 600 | 840 | 50 | 1,150 | 34 | 4 | 19 | 58 | 12 | 6 | 47 | 38 |
| 34 Cameroon | 10.5 | 475 | 910 | 750 | 11,280 | 32 | 22 | 17 | 35 | 10 | .. | 50 | 43 |
| 35 Congo | 2.0 | 342 | 990 | 200 | 2,000 | 19 | 8 | 19 | 54 | .. | 6 | 62 | 38 |
| 36 Tunisia | 7.3 | 164 | 1,140 | 880 | 7,790 | 22 | 16 | 24 | 33 | 9 | 15 | 54 | 52 |
| 37 Mauritius | 1.0 | 2 | 1,200 | 190 | 1,160 | 16 | 15 | 23 | 32 | 14 | 23 | 61 | 53 |
| Upper middle-income | | | | | | | | | | | | | |
| 38 Algeria | 22.4 | 2,382 | 2,590 | 3,170 | 60,760 | 15 | 12 | 34 | 44 | 11 | 13 | 51 | 44 |
| 39 Gabon | 1.0 | 268 | 3,080 | 220 | 3,190 | 26 | 10 | 34 | 35 | .. | .. | 40 | 55 |

Source: Compiled from "World Development Report 1968", World Bank.

Table 9: Africa: Structure of manufacturing

| Low-income economies | Value added in manufacturing (millions of current dollars) | | Distribution of manufacturing value added (percent; current prices) | | | | | | | | | |
|-------------------------|--|-------|---|------|-----------------------|------|-----------------------------------|------|-----------|------|-------|------|
| | | | Food and agriculture | | Textiles and clothing | | Machinery and transport equipment | | Chemicals | | Other | |
| | 1970 | 1985 | 1970 | 1985 | 1970 | 1985 | 1970 | 1985 | 1970 | 1985 | 1970 | 1985 |
| 1 Ethiopia | 149 | 492 | 46 | 51 | 31 | 23 | 0 | 0 | 2 | 3 | 21 | 22 |
| 2 Burkina Faso | .. | .. | 69 | 62 | 9 | 18 | 2 | 2 | 1 | 1 | 19 | 17 |
| 3 Malawi | .. | 126 | 51 | 49 | 17 | 13 | 3 | 2 | 10 | 11 | 20 | 25 |
| 4 Zaire | 286 | 59 | 38 | 40 | 16 | 16 | 7 | 8 | 10 | 8 | 29 | 29 |
| 5 Mali | 22 | 82 | 36 | .. | 40 | .. | 4 | .. | 5 | .. | 14 | .. |
| 6 Mozambique | .. | .. | 51 | .. | 13 | .. | 5 | .. | 3 | .. | 28 | .. |
| 7 Madagascar | 118 | .. | 36 | 35 | 28 | 47 | 6 | 3 | 7 | .. | 23 | 15 |
| 8 Uganda | 158 | 130 | 40 | .. | 20 | .. | 2 | .. | 4 | .. | 34 | .. |
| 9 Burundi | 16 | 87 | 57 | 75 | 19 | 11 | 0 | 0 | 7 | 5 | 17 | 9 |
| 10 Tanzania | 116 | 393 | 36 | 28 | 28 | 26 | 5 | 8 | 4 | 7 | 26 | 31 |
| 11 Togo | 25 | 49 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 12 Niger | 30 | 58 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 13 Benin | 19 | 43 | .. | 58 | .. | 16 | .. | 0 | .. | 5 | .. | 21 |
| 14 Somalia | 26 | 138 | 88 | 46 | 6 | 21 | 0 | 0 | 1 | 2 | 6 | 31 |
| 15 Central African Rep. | 12 | 55 | .. | 44 | .. | 19 | 0 | 0 | .. | 7 | .. | 30 |
| 16 Rwanda | 8 | 260 | 86 | 77 | 0 | 1 | 3 | 0 | 2 | 12 | 8 | 9 |
| 17 Kenya | 174 | 631 | 31 | 35 | 9 | 12 | 18 | 14 | 7 | 9 | 35 | 29 |
| 18 Zambia | 181 | 513 | 49 | 44 | 9 | 13 | 5 | 9 | 10 | 9 | 27 | 25 |
| 19 Sierra Leone | 22 | 71 | .. | 36 | .. | 4 | .. | 0 | .. | 38 | .. | 22 |
| 20 Sudan | 140 | 498 | 39 | 22 | 34 | 25 | 3 | 1 | 5 | 21 | 19 | 31 |
| 21 Lesotho | 3 | 26 | 11 | 12 | 26 | 20 | 0 | 0 | 0 | 0 | 63 | 68 |
| 22 Ghana | 252 | 526 | 34 | 53 | 16 | 6 | 4 | 2 | 4 | 4 | 41 | 35 |
| 23 Mauritania | 10 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 24 Senegal | 141 | 474 | 51 | 48 | 19 | 15 | 2 | 6 | 6 | 7 | 22 | 24 |
| 25 Chad | 51 | .. | .. | 45 | .. | 40 | .. | 0 | .. | 0 | .. | 15 |
| 26 Guinea | .. | 41 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Middle-income economies | | | | | | | | | | | | |
| 27 Liberia | 15 | 49 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 28 Morocco | 641 | 2,009 | .. | 26 | .. | 16 | .. | 10 | .. | 11 | .. | 37 |
| 29 Zimbabwe | 293 | 1,314 | 24 | 28 | 16 | 16 | 9 | 10 | 11 | 9 | 40 | 36 |
| 30 Nigeria | 438 | 7,373 | .. | 29 | .. | 11 | .. | 17 | .. | 9 | .. | 35 |
| 31 Côte d'Ivoire | 149 | 889 | 27 | .. | 16 | .. | 10 | .. | 5 | .. | 42 | .. |
| 32 Egypt | .. | .. | 17 | 20 | 35 | 27 | 9 | 13 | 12 | 10 | 27 | 31 |
| 33 Botswana | 5 | 49 | .. | 52 | .. | 12 | .. | 0 | .. | 4 | .. | 32 |
| 34 Cameroon | 119 | 952 | 47 | 50 | 16 | 13 | 5 | 7 | 4 | 6 | 28 | 23 |
| 35 Congo | .. | 128 | 65 | 47 | 4 | 13 | 1 | 3 | 7 | 9 | 23 | 29 |
| 36 Tunisia | 121 | 981 | 29 | 17 | 18 | 19 | 4 | 7 | 13 | 13 | 36 | 44 |
| 37 Mauritius | 26 | 185 | 75 | 37 | 6 | 34 | 5 | 4 | 3 | 5 | 12 | 21 |
| Upper middle-income | | | | | | | | | | | | |
| 38 Algeria | 682 | 6,157 | 32 | 26 | 20 | 20 | 9 | 11 | 4 | 1 | 35 | 41 |
| 39 Gabon | .. | .. | 37 | .. | 7 | .. | 6 | .. | 6 | .. | 44 | .. |

Source: Compiled from "World Development Report 1988", World Bank.

Table 10: Africa: Total external public and private debt and debt service ratios

| | Total long-term debt disbursed and outstanding | | | | Total interest payments on long-term debt (millions of dollars) | Total long-term debt service as percentage of: | | | | |
|--------------------------------|---|--------|-------------------------|-------|--|--|------|-------------------------------|------|------|
| | Millions of dollars | | As percentage of GNP | | | GNP | | Exports of goods and services | | |
| | 1970 | 1986 | 1970 | 1986 | | 1970 | 1986 | 1970 | 1986 | |
| Low-income economies | | | | | | | | | | |
| 1 Ethiopia | 169 | 1,909 | 9.5 | 35.7 | 6 | 52 | 1.2 | 3.2 | 11.3 | 25.8 |
| 2 Burkina Faso | 21 | 616 | 6.5 | 41.8 | 0 | 12 | 0.6 | 2.3 | 6.5 | 14.8 |
| 3 Malawi | 122 | 910 | 43.2 | 78.6 | 4 | 36 | 2.3 | 9.4 | 7.8 | 40.1 |
| 4 Zaire | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5 Mali | 238 | 1,566 | 69.6 | 95.7 | 0 | 13 | 0.1 | 2.1 | 1.0 | 14.2 |
| 6 Mozambique | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7 Madagascar | 90 | 2,635 | 10.4 | 105.6 | 2 | 63 | 0.8 | 4.5 | 3.7 | 27.7 |
| 8 Uganda | 138 | 929 | 7.3 | 26.8 | 5 | 13 | 0.5 | 0.8 | 2.9 | 6.5 |
| 9 Burundi | 7 | 528 | 3.1 | 44.2 | 0 | 12 | 0.3 | 2.6 | 2.3 | 19.0 |
| 10 Tanzania | 265 | 3,650 | 20.7 | 81.6 | -- | -- | -- | -- | -- | -- |
| 11 Togo | 40 | 882 | 16.0 | 93.7 | 1 | 42 | 0.9 | 13.6 | 3.0 | 32.5 |
| 12 Niger | -- | 1,251 | -- | 62.0 | -- | 49 | -- | 6.6 | -- | 40.3 |
| 13 Benin | 41 | 781 | 15.1 | 56.5 | 0 | 22 | 0.6 | 4.2 | 2.2 | 28.8 |
| 14 Somalia | 77 | 1,415 | 24.4 | 54.4 | 0 | 18 | 0.3 | 2.0 | 1.8 | 62.1 |
| 15 Central African Rep. | 24 | 393 | 13.4 | 41.6 | 1 | 9 | 1.8 | 1.9 | 5.3 | 9.6 |
| 16 Rwanda | 2 | 439 | 0.9 | 23.9 | 0 | 5 | 0.1 | 1.0 | 1.2 | 7.6 |
| 17 Kenya | 406 | 3,700 | 26.3 | 55.5 | -- | -- | -- | -- | -- | -- |
| 18 Zambia | 653 | 3,575 | 37.5 | 240.5 | -- | -- | -- | -- | -- | -- |
| 19 Sierra Leone | 60 | 459 | 14.3 | 37.0 | 3 | 4 | 3.1 | 1.2 | 10.7 | 8.2 |
| 20 Sudan | 307 | 7,057 | 15.3 | 95.9 | 13 | 32 | 1.7 | 0.8 | 10.7 | 7.7 |
| 21 Lesotho | 8 | 182 | 7.8 | 33.4 | 0 | 4 | 0.3 | 2.5 | 2.7 | 4.2 |
| 22 Ghana | 494 | 1,413 | 21.9 | 25.6 | 12 | 28 | 1.2 | 1.8 | 5.5 | 10.8 |
| 23 Mauritania | 27 | 1,637 | 13.9 | 210.0 | 0 | 31 | 1.8 | 9.9 | 3.3 | 17.4 |
| 24 Senegal | 131 | 2,471 | 15.5 | 69.6 | 2 | 99 | 1.1 | 6.0 | 4.0 | 28.2 |
| 25 Chad | 32 | 172 | 9.9 | -- | 0 | 2 | 0.9 | -- | 4.0 | 2.2 |
| 26 Guinea | 312 | 1,421 | 47.1 | 70.4 | 4 | 19 | 2.2 | 3.6 | -- | -- |
| Middle-income economies | | | | | | | | | | |
| 27 Liberia | 158 | 1,002 | 39.3 | 99.0 | 6 | 15 | 4.3 | 2.7 | 8.1 | 6.4 |
| 28 Morocco | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29 Zimbabwe | -- | 1,758 | -- | 33.2 | -- | -- | -- | -- | -- | -- |
| 30 Nigeria | 567 | 21,876 | 5.7 | 45.0 | 28 | 391 | 1.0 | 3.3 | 7.1 | 23.4 |
| 31 Côte d'Ivoire | 266 | 9,455 | 19.5 | 106.8 | -- | -- | -- | -- | -- | -- |
| 32 Egypt | 1,713 | 23,735 | 22.5 | 58.8 | 56 | 766 | 4.8 | 4.8 | 38.0 | 23.8 |
| 33 Botswana | 17 | 355 | 21.2 | 36.2 | 0 | 27 | 0.6 | 4.5 | 0.9 | 4.3 |
| 34 Cameroon | 141 | 2,772 | 13.0 | 25.4 | 5 | 155 | 1.0 | 5.6 | 4.0 | 22.8 |
| 35 Congo | 124 | 2,861 | 46.5 | 152.1 | 3 | 79 | 3.4 | 16.5 | 11.5 | 39.8 |
| 36 Tunisia | 541 | 5,251 | 38.6 | 61.5 | 18 | 304 | 4.7 | 10.0 | 19.7 | 30.7 |
| 37 Mauritius | 32 | 449 | 14.3 | 33.4 | 2 | 29 | 1.4 | 5.1 | 3.2 | 7.7 |
| Upper middle-income | | | | | | | | | | |
| 38 Algeria | 937 | 14,777 | 19.3 | 24.8 | 10 | 1,250 | 0.9 | 8.7 | 3.9 | 54.8 |
| 39 Gabon | 91 | 1,095 | 28.7 | 37.1 | 3 | 61 | 3.7 | 7.1 | 5.6 | 17.5 |

Source: Compiled from "World Development Report 1988", World Bank.

Table 11: Africa: Agriculture and Food

| | Value added in agriculture (millions of current dollars) | | Cereal imports (thousands of metric tons) | | Food aid in cereals (thousands of metric tons) | | Fertilizer consumption (hundreds of grams of plant nutrient per hectare of arable land) | | Average index of food production per capita (1979-81=100) 1984-86 |
|--------------------------------|---|--------|--|-------|---|---------|--|-------|---|
| | 1970 | 1986 | 1974 | 1986 | 1974/75 | 1985/86 | 1970 | 1985 | |
| Low-income economies | | | | | | | | | |
| 1 Ethiopia | 931 | 2,403 | 118 | 1,047 | 54 | 793 | 4 | 47 | 87 |
| 2 Burkina Faso | 126 | 423 | 99 | 82 | 28 | 109 | 3 | 46 | 112 |
| 3 Malawi | 119 | 404 | 17 | 6 | 0 | 5 | 52 | 143 | 90 |
| 4 Zaïre | 505 | 1,739 | 343 | 361 | 1 | 101 | 8 | 10 | 100 |
| 5 Mali | 216 | 548 | 281 | 181 | 107 | 83 | 29 | 129 | 101 |
| 6 Mozambique | .. | 1,385 | 62 | 393 | 34 | 252 | 27 | 12 | 85 |
| 7 Madagascar | 266 | 1,147 | 114 | 208 | 7 | 65 | 56 | 32 | 98 |
| 8 Uganda | 929 | 2,524 | 37 | 17 | 0 | 7 | 13 | 0 | 111 |
| 9 Burundi | 139 | 636 | 7 | 14 | 6 | 6 | 5 | 18 | 98 |
| 10 Tanzania | 673 | 2,367 | 431 | 264 | 148 | 66 | 30 | 76 | 92 |
| 11 Togo | 85 | 318 | 6 | 66 | 11 | 9 | 3 | 69 | 91 |
| 12 Niger | 420 | 952 | 155 | 43 | 73 | 97 | 1 | 10 | 85 |
| 13 Benin | 121 | 657 | 8 | 55 | 9 | 11 | 33 | 66 | 114 |
| 14 Somalia | 167 | 1,335 | 42 | 274 | 111 | 126 | 31 | 36 | 98 |
| 15 Central African Rep. | 60 | 372 | 7 | 40 | 1 | 11 | 11 | 15 | 94 |
| 16 Rwanda | 135 | 733 | 3 | 24 | 19 | 25 | 3 | 14 | 87 |
| 17 Kenya | 464 | 1,770 | 15 | 189 | 2 | 139 | 226 | 460 | 87 |
| 18 Zambia | 191 | 179 | 93 | 148 | 5 | 82 | 71 | 155 | 96 |
| 19 Sierra Leone | 108 | 529 | 72 | 130 | 10 | 49 | 13 | 20 | 97 |
| 20 Sudan | 757 | 2,630 | 125 | 636 | 46 | 904 | 31 | 75 | 96 |
| 21 Lesotho | 23 | 49 | 49 | 144 | 14 | 40 | 17 | 117 | 82 |
| 22 Ghana | 1,030 | 2,014 | 117 | 154 | 33 | 96 | 9 | 44 | 109 |
| 23 Mauritania | 50 | 254 | 115 | 209 | 48 | 137 | 6 | 103 | 88 |
| 24 Senegal | 208 | 838 | 341 | 544 | 27 | 117 | 20 | 55 | 102 |
| 25 Chad | 142 | .. | 37 | 83 | 20 | 74 | 7 | 23 | 100 |
| 26 Guinea | .. | 791 | 63 | 151 | 49 | 55 | 18 | 2 | 93 |
| Middle-income economies | | | | | | | | | |
| 27 Liberia | 91 | 368 | 42 | 124 | 3 | 76 | 55 | 100 | 99 |
| 28 Morocco | 789 | 3,140 | 891 | 1,610 | 75 | 142 | 130 | 356 | 109 |
| 29 Zimbabwe | 214 | 562 | 56 | 54 | 0 | .. | 464 | 622 | 92 |
| 30 Nigeria | 3,575 | 19,964 | 309 | 1,596 | 7 | 0 | 3 | 108 | 103 |
| 31 Côte d'Ivoire | 462 | 2,645 | 172 | 601 | 4 | 0 | 71 | 118 | 105 |
| 32 Egypt | 1,942 | 8,199 | 3,877 | 8,846 | 610 | 1,799 | 1,282 | 3,473 | 105 |
| 33 Botswana | 28 | 45 | 21 | 141 | 5 | 49 | 14 | 4 | 76 |
| 34 Cameroon | 335 | 2,509 | 81 | 149 | 4 | 12 | 28 | 81 | 94 |
| 35 Congo | 49 | 173 | 34 | 104 | 2 | 2 | 112 | 69 | 93 |
| 36 Tunisia | 245 | 1,220 | 307 | 1,312 | 59 | 80 | 82 | 194 | 108 |
| 37 Mauritius | 30 | 178 | 160 | 168 | 22 | 5 | 2,081 | 2,615 | 100 |
| Upper middle-income | | | | | | | | | |
| 38 Algeria | 492 | 7,401 | 1,816 | 4,664 | 54 | 4 | 174 | 376 | 101 |
| 39 Gabon | 60 | 323 | 13 | 74 | | 0 | | 62 | 98 |

Source: Compiled from "World Development Report 1988", World Bank.

Table 12: Africa: Structure of merchandise imports

| | Percentage share of merchandise imports | | | | | | | | | |
|--------------------------------|---|------|-------|------|---------------------------|------|-----------------------------------|------|--------------------|------|
| | Food | | Fuels | | Other primary commodities | | Machinery and transport equipment | | Other manufactures | |
| | 1965 | 1986 | 1965 | 1986 | 1965 | 1986 | 1965 | 1986 | 1965 | 1986 |
| Low-income economies | | | | | | | | | | |
| 1 Ethiopia | 6 | 22 | 6 | 15 | 6 | 3 | 37 | 32 | 44 | 28 |
| 2 Burkina Faso | 23 | 20 | 4 | 2 | 14 | 5 | 19 | 33 | 40 | 41 |
| 3 Malawi | 15 | 7 | 5 | 7 | 3 | 3 | 21 | 34 | 57 | 50 |
| 4 Zaire | 18 | 16 | 7 | 3 | 5 | 4 | 33 | 36 | 37 | 41 |
| 5 Mali | 20 | 13 | 6 | 12 | 5 | 2 | 23 | 46 | 47 | 28 |
| 6 Mozambique | 17 | -- | 8 | -- | 7 | -- | 24 | -- | 45 | -- |
| 7 Madagascar | 19 | 13 | 5 | 15 | 2 | 2 | 25 | 29 | 48 | 41 |
| 8 Uganda | 7 | 6 | 1 | 7 | 3 | 2 | 38 | 46 | 51 | 38 |
| 9 Burundi | 16 | 12 | 6 | 5 | 9 | 4 | 15 | 23 | 55 | 56 |
| 10 Tanzania | -- | 4 | -- | 16 | -- | 2 | -- | 30 | -- | 48 |
| 11 Togo | 15 | 23 | 3 | 8 | 5 | 6 | 31 | 45 | 45 | 17 |
| 12 Niger | 12 | 18 | 6 | 4 | 6 | 11 | 21 | 32 | 55 | 35 |
| 13 Benin | 18 | 16 | 6 | 24 | 7 | 2 | 17 | 17 | 53 | 40 |
| 14 Somalia | 31 | 15 | 5 | 2 | 8 | 5 | 24 | 47 | 33 | 32 |
| 15 Central African Rep. | 13 | 16 | 7 | 1 | 2 | 3 | 29 | 38 | 49 | 41 |
| 16 Rwanda | 12 | 12 | 7 | 10 | 5 | 8 | 28 | 32 | 49 | 38 |
| 17 Kenya | 10 | 9 | 11 | 15 | 3 | 3 | 34 | 39 | 42 | 34 |
| 18 Zambia | 9 | 4 | 10 | 12 | 3 | 1 | 33 | 40 | 45 | 42 |
| 19 Sierra Leone | 17 | 32 | 9 | 10 | 3 | 4 | 30 | 28 | 41 | 26 |
| 20 Sudan | 23 | 21 | 5 | 9 | 4 | 3 | 21 | 30 | 47 | 37 |
| 21 Lesotho | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 22 Ghana | 12 | 7 | 4 | 16 | 3 | 3 | 33 | 36 | 48 | 38 |
| 23 Mauritania | 9 | 25 | 4 | 7 | 1 | 2 | 56 | 39 | 30 | 27 |
| 24 Senegal | 36 | 20 | 6 | 16 | 4 | 2 | 15 | 28 | 38 | 34 |
| 25 Chad | 13 | 17 | 20 | 1 | 3 | 2 | 21 | 32 | 42 | 47 |
| 26 Guinea | -- | 12 | -- | 29 | -- | 3 | -- | 25 | -- | 31 |
| Middle-income economies | | | | | | | | | | |
| 27 Liberia | 16 | 21 | 8 | 17 | 3 | 3 | 34 | 30 | 39 | 30 |
| 28 Morocco | 36 | 17 | 5 | 14 | 10 | 14 | 18 | 26 | 31 | 29 |
| 29 Zimbabwe | 13 | 12 | 8 | 6 | 3 | 2 | 31 | 36 | 46 | 43 |
| 30 Nigeria | 9 | 11 | 6 | 3 | 3 | 3 | 34 | 35 | 48 | 49 |
| 31 Côte d'Ivoire | 18 | 15 | 6 | 7 | 3 | 3 | 28 | 34 | 46 | 41 |
| 32 Egypt | 26 | 22 | 7 | 4 | 12 | 6 | 23 | 29 | 31 | 40 |
| 33 Botswana | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 34 Cameroon | 11 | 11 | 5 | 1 | 4 | 2 | 28 | 37 | 51 | 49 |
| 35 Congo | 15 | 19 | 6 | 6 | 1 | 3 | 34 | 27 | 44 | 45 |
| 36 Tunisia | 16 | 14 | 6 | 7 | 7 | 12 | 31 | 26 | 41 | 42 |
| 37 Mauritius | 34 | 23 | 5 | 6 | 3 | 4 | 16 | 20 | 43 | 47 |
| Upper middle-income | | | | | | | | | | |
| 38 Algeria | 26 | 22 | 0 | 1 | 6 | 5 | 15 | 32 | 52 | 41 |
| 39 Gabon | 16 | 21 | 5 | 1 | 2 | 3 | 38 | 37 | 40 | 38 |

Source: Compiled from "World Development Report 1988", World Bank.

Table 13: Africa: Structure of merchandise exports

| | Percentage share of merchandise exports | | | | | | | | | |
|--------------------------------|---|------|---------------------------|------|-----------------------------------|------|--------------------|------|-------------------------|------|
| | Fuels, minerals, and metals | | Other primary commodities | | Machinery and transport equipment | | Other manufactures | | (Textiles and clothing) | |
| | 1965 | 1986 | 1965 | 1986 | 1965 | 1986 | 1965 | 1986 | 1965 | 1986 |
| Low-income economies | | | | | | | | | | |
| 1 Ethiopia | 1 | 2 | 98 | 97 | 1 | 0 | 0 | 1 | 0 | 0 |
| 2 Burkina Faso | 1 | 0 | 94 | 87 | 1 | 5 | 4 | 7 | 2 | .. |
| 3 Malawi | 0 | 0 | 99 | 84 | 0 | 5 | 1 | 11 | 0 | .. |
| 4 Zaïre | 72 | 49 | 20 | 45 | 0 | 1 | 8 | 5 | 0 | .. |
| 5 Mali | 1 | 0 | 96 | 70 | 1 | 1 | 2 | 29 | 1 | 3 |
| 6 Mozambique | 14 | .. | 84 | .. | 0 | .. | 2 | .. | 1 | .. |
| 7 Madagascar | 4 | 7 | 90 | 81 | 1 | 2 | 4 | 10 | 1 | 6 |
| 8 Uganda | 14 | 2 | 86 | 58 | 0 | 0 | 1 | 0 | 0 | .. |
| 9 Burundi | 1 | 0 | 94 | 88 | 0 | 0 | 6 | 12 | 1 | 0 |
| 10 Tanzania | 4 | 4 | 83 | 79 | 0 | 3 | 13 | 14 | 0 | .. |
| 11 Togo | 33 | 58 | 62 | 22 | 1 | 1 | 4 | 19 | 0 | 0 |
| 12 Niger | 0 | 81 | 95 | 16 | 1 | 1 | 4 | 2 | 1 | .. |
| 13 Benin | 1 | 42 | 94 | 36 | 2 | 6 | 3 | 16 | 0 | .. |
| 14 Somalia | 6 | 1 | 80 | 98 | 4 | 0 | 10 | 1 | .. | .. |
| 15 Central African Rep. | 1 | 0 | 45 | 67 | 0 | 0 | 54 | 33 | 0 | .. |
| 16 Rwanda | 40 | 5 | 60 | 94 | 0 | 0 | 1 | 1 | .. | 0 |
| 17 Kenya | 13 | 14 | 81 | 70 | 0 | 2 | 6 | 14 | 0 | .. |
| 18 Zambia | 97 | 94 | 3 | 1 | 0 | 1 | 0 | 2 | 0 | .. |
| 19 Sierra Leone | 25 | 22 | 14 | 21 | 0 | 0 | 60 | 56 | 0 | 0 |
| 20 Sudan | 1 | 6 | 98 | 88 | 1 | 3 | 0 | 4 | 0 | 1 |
| 21 Lesotho | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 22 Ghana | 13 | 30 | 85 | 68 | 1 | 0 | 2 | 2 | 0 | .. |
| 23 Mauritania | 94 | 34 | 5 | 65 | 1 | 0 | 0 | 1 | 0 | 0 |
| 24 Senegal | 9 | 35 | 88 | 36 | 1 | 7 | 2 | 22 | 1 | .. |
| 25 Chad | 5 | .. | 92 | .. | 0 | .. | 3 | .. | 0 | .. |
| 26 Guinea | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Middle-income economies | | | | | | | | | | |
| 27 Liberia | 72 | 63 | 25 | 36 | 1 | 0 | 3 | 1 | 0 | .. |
| 28 Morocco | 40 | 26 | 55 | 27 | 0 | 1 | 5 | 46 | 1 | 18 |
| 29 Zimbabwe | 24 | 23 | 47 | 41 | 6 | 3 | 23 | 34 | 6 | .. |
| 30 Nigeria | 32 | 94 | 65 | 4 | 0 | 0 | 2 | 1 | 0 | .. |
| 31 Côte d'Ivoire | 2 | 6 | 93 | 85 | 1 | 2 | 4 | 7 | 1 | 1 |
| 32 Egypt | 8 | 74 | 72 | 14 | 0 | 0 | 20 | 13 | 15 | 9 |
| 33 Botswana | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 34 Cameroon | 17 | 50 | 77 | 44 | 3 | 1 | 2 | 5 | 0 | .. |
| 35 Congo | 5 | 64 | 32 | 17 | 2 | 1 | 61 | 18 | 0 | .. |
| 36 Tunisia | 31 | 27 | 51 | 13 | 0 | 5 | 19 | 55 | 2 | 28 |
| 37 Mauritius | 0 | 0 | 100 | 58 | 0 | 2 | 0 | 39 | 0 | .. |
| Upper middle-income | | | | | | | | | | |
| 38 Algeria | 58 | 97 | 38 | 1 | 2 | 0 | 2 | 2 | 0 | 0 |
| 39 Gabon | 50 | 65 | 39 | 22 | 1 | 3 | 10 | 10 | 0 | .. |

Source: Compiled from "World Development Report 1988", World Bank.

Table 14: Africa: Total external debt

| | Long-term debt (millions of dollars) | | | | Use of IMF credit (millions of dollars) | | Short-term debt (millions of dollars) | | Total external debt (millions of dollars) | |
|--------------------------------|---|--------|---------------------------|-------|--|-------|--|-------|--|--------|
| | Public and publicly guaranteed | | Private non-guaranteed | | 1970 | 1986 | 1970 | 1986 | 1970 | 1986 |
| | 1970 | 1986 | 1970 | 1986 | | | | | | |
| Low-income economies | | | | | | | | | | |
| 1 Ethiopia | 169 | 1,909 | 0 | 0 | 0 | 66 | .. | 83 | .. | 2,139 |
| 2 Burkina Faso | 21 | 616 | 0 | 0 | 0 | 0 | .. | 49 | .. | 665 |
| 3 Malawi | 122 | 910 | 0 | 0 | 0 | 124 | .. | 80 | .. | 1,114 |
| 4 Zaïre | 311 | 5,430 | .. | .. | 0 | 786 | .. | 318 | .. | .. |
| 5 Mali | 238 | 1,566 | 0 | 0 | 9 | 85 | .. | 65 | .. | 1,716 |
| 6 Mozambique | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 7 Madagascar | 90 | 2,635 | 0 | 0 | 0 | 184 | .. | 80 | .. | 2,899 |
| 8 Uganda | 138 | 929 | 0 | 0 | 0 | 229 | .. | 35 | .. | 1,193 |
| 9 Burundi | 7 | 528 | 0 | 0 | 8 | 0 | .. | 23 | .. | 551 |
| 10 Tanzania | 250 | 3,650 | 15 | 0 | 0 | 45 | .. | 260 | .. | 3,955 |
| 11 Togo | 40 | 882 | 0 | 0 | 0 | 81 | .. | 87 | .. | 1,050 |
| 12 Niger | 32 | 1,026 | .. | 224 | 0 | 88 | .. | 121 | .. | 1,460 |
| 13 Benin | 41 | 781 | 0 | 0 | 0 | 0 | .. | 109 | .. | 890 |
| 14 Somalia | 77 | 1,415 | 0 | 0 | 0 | 145 | .. | 20 | .. | 1,580 |
| 15 Central African Rep. | 24 | 393 | 0 | 0 | 0 | 33 | .. | 27 | .. | 453 |
| 16 Rwanda | 2 | 412 | 0 | 0 | 3 | 0 | .. | 27 | .. | 439 |
| 17 Kenya | 319 | 3,438 | 88 | 263 | 0 | 431 | .. | 372 | .. | 4,504 |
| 18 Zambia | 623 | 3,575 | 30 | 0 | 0 | 825 | .. | 900 | .. | 5,300 |
| 19 Sierra Leone | 60 | 459 | 0 | 0 | 0 | 72 | .. | 59 | .. | 590 |
| 20 Sudan | 307 | 7,057 | 0 | 0 | 31 | 740 | .. | 475 | .. | 8,272 |
| 21 Lesotho | 8 | 182 | 0 | 0 | 0 | 0 | .. | 4 | .. | 186 |
| 22 Ghana | 494 | 1,413 | 0 | 0 | 46 | 748 | .. | 224 | .. | 2,385 |
| 23 Mauritania | 27 | 1,637 | 0 | 0 | 0 | 36 | .. | 88 | .. | 1,761 |
| 24 Senegal | 100 | 2,456 | 31 | 15 | 0 | 247 | .. | 272 | .. | 2,990 |
| 25 Chad | 32 | 172 | 0 | 0 | 3 | 9 | .. | 7 | .. | 187 |
| 26 Guinea | 312 | 1,421 | 0 | 0 | 3 | 25 | .. | 69 | .. | 1,516 |
| Middle-income economies | | | | | | | | | | |
| 27 Liberia | 158 | 1,002 | 0 | 0 | 4 | 251 | .. | 50 | .. | 1,303 |
| 28 Morocco | 712 | 14,610 | .. | .. | 28 | 1,026 | .. | 2,189 | .. | .. |
| 29 Zimbabwe | 233 | 1,712 | .. | 46 | 0 | 234 | .. | 489 | .. | 2,481 |
| 30 Nigeria | 452 | 21,496 | 115 | 50 | 0 | 0 | .. | 330 | .. | 21,876 |
| 31 Côte d'Ivoire | 255 | 6,500 | 11 | 2,955 | 0 | 623 | .. | 787 | .. | 10,865 |
| 32 Egypt | 1,713 | 22,788 | 0 | 947 | 49 | 31 | .. | 4,790 | .. | 28,556 |
| 33 Botswana | 17 | 355 | 0 | 0 | 0 | 0 | .. | 3 | .. | 358 |
| 34 Cameroon | 131 | 2,267 | 9 | 505 | 0 | 0 | .. | 761 | .. | 3,533 |
| 35 Congo | 124 | 2,861 | 0 | 0 | 0 | 12 | .. | 662 | .. | 3,534 |
| 36 Tunisia | 541 | 5,001 | 0 | 250 | 13 | 183 | .. | 553 | .. | 5,987 |
| 37 Mauritius | 32 | 427 | 0 | 22 | 0 | 158 | .. | 38 | .. | 644 |
| Upper middle-income | | | | | | | | | | |
| 38 Algeria | 937 | 14,777 | 0 | 0 | 0 | 0 | .. | 3,152 | .. | 17,929 |
| 39 Gabon | 91 | 1,095 | 0 | 0 | 0 | 34 | .. | 440 | .. | 1,568 |

Source: Compiled from "World Development Report 1988", World Bank.

Table 15: Africa: External public debt service ratios

| | External public debt outstanding and disbursed | | | | Interest payments on external public debt (millions of dollars) | | Debt service as percentage of: | | | |
|--------------------------------|--|--------|----------------------|-------|---|-------|--------------------------------|------|-------------------------------|------|
| | Millions of dollars | | As percentage of GNP | | 1970 | 1986 | GNP | | Exports of goods and services | |
| | 1970 | 1986 | 1970 | 1986 | | | 1970 | 1986 | 1970 | 1986 |
| Low-income economies | | | | | | | | | | |
| 1 Ethiopia | 169 | 1,909 | 9.5 | 35.7 | 6 | 52 | 1.2 | 3.2 | 11.3 | 25.8 |
| 2 Burkina Faso | 21 | 616 | 6.5 | 41.8 | 0 | 12 | 0.6 | 2.3 | 6.5 | 14.8 |
| 3 Malawi | 122 | 910 | 43.2 | 78.6 | 4 | 36 | 2.3 | 9.4 | 7.8 | 40.1 |
| 4 Zaire | 311 | 5,430 | 9.1 | 96.8 | 9 | 228 | 1.1 | 6.6 | 4.4 | 18.2 |
| 5 Mali | 238 | 1,566 | 69.6 | 95.7 | 0 | 13 | 0.1 | 2.1 | 1.0 | 14.2 |
| 6 Mozambique | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7 Madagascar | 90 | 2,635 | 10.4 | 105.6 | 2 | 63 | 0.8 | 4.5 | 3.7 | 27.7 |
| 8 Uganda | 138 | 929 | 7.3 | 26.8 | 5 | 13 | 0.5 | 0.8 | 2.9 | 6.5 |
| 9 Surundi | 7 | 528 | 3.1 | 44.2 | 0 | 12 | 0.3 | 2.6 | 2.3 | 19.0 |
| 10 Tanzania | 250 | 3,650 | 19.5 | 81.6 | 7 | 26 | 1.3 | 1.5 | 5.3 | 15.3 |
| 11 Togo | 40 | 887 | 16.0 | 93.7 | 1 | 42 | 0.9 | 13.6 | 3.0 | 32.5 |
| 12 Niger | 32 | 1,526 | 5.0 | 50.9 | 1 | 37 | 0.4 | 4.6 | 4.0 | 27.9 |
| 13 Benin | 41 | 781 | 15.1 | 56.5 | 0 | 22 | 0.6 | 4.2 | 2.2 | 28.8 |
| 14 Somalia | 71 | 1,415 | 24.4 | 54.4 | 0 | 18 | 0.3 | 2.0 | 1.8 | 62.1 |
| 15 Central African Rep. | 24 | 393 | 13.4 | 41.6 | 1 | 9 | 1.8 | 1.9 | 5.3 | 9.6 |
| 16 Rwanda | 2 | 412 | 0.9 | 22.4 | 0 | 5 | 0.1 | 1.0 | 1.2 | 7.6 |
| 17 Kenya | 319 | 3,438 | 20.6 | 51.6 | 13 | 174 | 1.9 | 6.5 | 5.9 | 22.5 |
| 18 Zambia | 623 | 3,575 | 35.7 | 240.5 | 29 | 55 | 3.7 | 8.3 | 6.4 | 16.8 |
| 19 Sierra Leone | 60 | 459 | 14.3 | 37.0 | 3 | 4 | 3.1 | 1.2 | 10.7 | 8.2 |
| 20 Sudan | 307 | 7,057 | 15.3 | 95.9 | 13 | 32 | 1.7 | 0.8 | 10.7 | 7.7 |
| 21 Lesotho | 8 | 182 | 7.8 | 33.4 | 0 | 4 | 0.3 | 2.5 | 2.7 | 4.2 |
| 22 Ghana | 494 | 1,413 | 21.9 | 25.6 | 12 | 28 | 1.2 | 1.8 | 5.5 | 10.8 |
| 23 Mauritania | 27 | 1,637 | 13.9 | 210.0 | 0 | 31 | 1.8 | 9.9 | 3.3 | 17.4 |
| 24 Senegal | 100 | 2,456 | 11.9 | 69.2 | 2 | 98 | 0.8 | 5.9 | 2.9 | 19.9 |
| 25 Chad | 32 | 172 | 9.9 | 21.2 | 0 | 2 | 0.9 | 0.4 | 4.0 | 2.2 |
| 26 Guinea | 312 | 1,421 | 47.1 | 70.4 | 4 | 19 | 2.2 | 3.6 | -- | -- |
| Middle-income economies | | | | | | | | | | |
| 27 Liberia | 158 | 1,002 | 39.3 | 99.0 | 6 | 15 | 4.3 | 2.7 | 8.1 | 6.4 |
| 28 Morocco | 712 | 14,610 | 18.2 | 103.9 | 24 | 742 | 1.6 | 10.2 | 8.7 | 40.4 |
| 29 Zimbabwe | 233 | 1,712 | 15.7 | 32.4 | 5 | 117 | 0.7 | 6.4 | 2.3 | 22.3 |
| 30 Nigeria | 452 | 21,496 | 4.5 | 44.2 | 20 | 391 | 0.6 | 3.3 | 4.3 | 23.4 |
| 31 Côte d'Ivoire | 255 | 6,500 | 18.7 | 73.4 | 12 | 532 | 2.9 | 8.9 | 7.1 | 23.3 |
| 32 Egypt | 1,713 | 22,788 | 22.5 | 56.4 | 56 | 703 | 4.8 | 4.3 | 38.0 | 21.3 |
| 33 Botswana | 17 | 355 | 21.2 | 36.2 | 0 | 27 | 0.6 | 4.5 | 0.9 | 4.3 |
| 34 Cameroon | 131 | 2,267 | 12.1 | 20.8 | 4 | 121 | 0.8 | 2.7 | 3.4 | 11.2 |
| 35 Congo | 124 | 2,861 | 46.5 | 152.1 | 3 | 79 | 3.4 | 16.5 | 11.5 | 39.8 |
| 36 Tunisia | 541 | 5,001 | 38.6 | 58.6 | 18 | 286 | 4.7 | 9.3 | 19.7 | 28.5 |
| 37 Mauritius | 32 | 427 | 14.3 | 31.8 | 2 | 28 | 1.4 | 4.8 | 3.2 | 7.3 |
| Upper middle-income | | | | | | | | | | |
| 38 Algeria | 937 | 14,777 | 19.3 | 24.8 | 10 | 1,250 | 0.9 | 8.7 | 3.9 | 54.8 |
| 39 Gabon | 91 | 1,095 | 28.7 | 37.1 | 3 | 61 | 3.7 | 7.1 | 5.6 | 17.5 |

Source: Compiled from "World Development Report 1988", World Bank.

ANNEX

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