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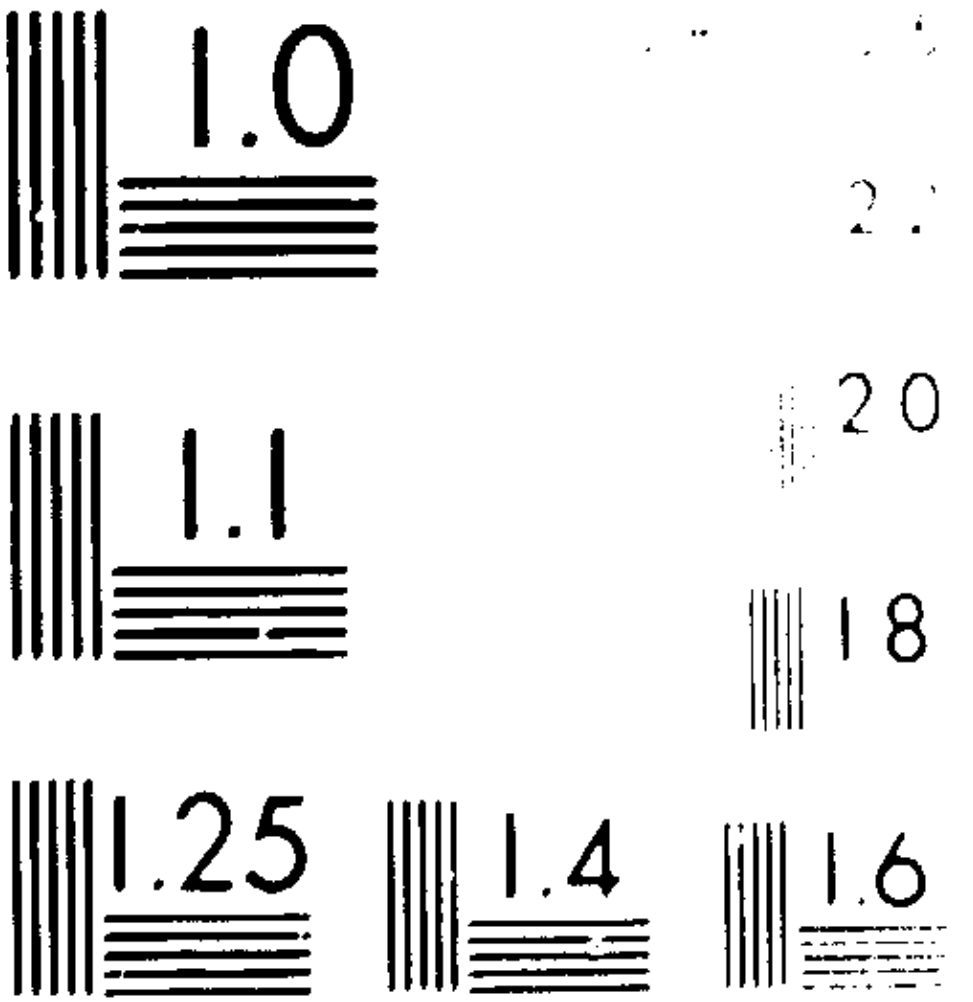
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THE POTENTIAL
FOR RESOURCE-BASED INDUSTRIAL DEVELOPMENT
IN THE LEAST DEVELOPED COUNTRIES

No. 3.

THE UNITED REPUBLIC OF TANZANIA

Prepared by the
Division for Industrial Studies
Regional and Country Studies Branch

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PREFACE

One of the special measures in favour of least developed countries called for in the New Delhi Declaration and Plan of Action adopted at the Third General Conference of UNIDO, was to "assist in the establishment of comprehensive inventories of their resources, particularly alternative energy sources, and prepare industrial surveys of these countries to support endogenous exploitation of their resources".[1/] The Division for Industrial Studies, UNIDO, has therefore, as part of its country studies programme, initiated the preparation of a series of industrial development studies pertaining to the least developed countries.

This study on the United Republic of Tanzania has been prepared during 1981 under subcontract by the Tanzania Industrial Studies and Consulting Organization (TISCO), Dar es Salaam, under the direction of Mr. E. Kamuzora, Director General of TISCO, in consultation with the staff of the Division for Industrial Studies, UNIDO.

It is hoped that the study findings and conclusions will be considered by the Government of the United Republic of Tanzania in connexion with industrial project promotion work and other activities aimed at supporting further utilization of the country's endogenous resources for industrial development. It is specifically expected that the study will contribute to the development of industrial programmes and projects which will enhance the country's technological capabilities and productive capacities in agro- and mineral-based industries and ensure the availability of the energy required for industrialization, especially new and renewable resources. The views and opinions expressed in the study are those of the authors and do not necessarily reflect the views of the secretariat of UNIDO or those of the Government of the United Republic of Tanzania.

1/ Para. 296 of the Declaration and Plan of Action on Industrialization of Developing Countries and International Co-operation, adopted at the Third General Conference of UNIDO, New Delhi, 21 January - 9 February 1980.

EXPLANATORY NOTE

Totals in tables may not add precisely because of rounding. In tables, three dots (...) indicate that data are not available, and a dash (-), that they are not applicable.

The national currency is Tanzanian shilling. Its parity against US dollar 1975-80 has been:[1/]

Average 1975	:	1 Tsh = US $7.41
Average 1976	:	1 Tsh = US $8.38
Average 1977	:	1 Tsh = US $8.27
Average 1978	:	1 Tsh = US $7.69
Average 1979	:	1 Tsh = US $8.25
Average 1980	:	1 Tsh = Us $8.20

1/ International Finance Statistics, Supplement on Exchange Rates, IMF, 1981.

SUMMARY AND CONCLUSIONS

Industrial policies and strategies

Since the adoption of the Arusha Declaration in 1967, Tanzania has chartered a course for its industrial development within the framework of the economic and social policy objectives of equality, socialism and self-reliance.

A long-term industrial strategy - the Basic Industry Strategy (BIS) - was adopted in 1975 within a 20-year perspective. The working party responsible for the preparation of the industrial plan of the Third Five-Year Plan (1976-81) had identified seven national goals which would be affected by the choice of industrial strategy: industrial growth, structural change, employment, income distribution, regional distribution, workers' participation and self-reliance. It was considered that the main objectives to which industry could contribute were structural change and self-reliance. The major burden of achieving other objectives would be left to other policy instruments and other sectoral development strategies.

The Basic Industry Strategy, aimed at effecting fundamental structural changes within a context of self-reliance, provides for industries which meet the basic needs of people, such as food processing, textiles, clothing, footwear, and building materials. With basic consumption needs increasingly met from local production, the strategy selects additional activities which can use local resources to supply these industries with more and more of their required inputs. Metal fabrication is given priority in order to service and supply machinery and equipment and in turn the development of the iron and steel industry is supported to supply both metal fabrication and construction industries. Similarly, glass, ceramics, cement, plastic products, leather and wood products, paper, printing, chemicals, fertilizers, and petroleum industries are all to be developed, either to supply agriculture and the basic consumer goods industries of Tanzania or to supply intermediate goods industries which in turn supply agriculture and consumer goods industries.

Although the objectives of structural change and self-reliance dominated the selection of industries to be developed over a twenty-year period, certain other goals were not neglected. An important feature of the Basic Industry Strategy is thus the emphasis placed on small-scale industry and part of the resources available for industrial investment were to be directed to small-scale production in industries in which small-scale techniques can compete reasonably well in price and quality with large-scale techniques.

The investment priorities set on basis of the BIS were, furthermore, modified to permit some further expansion of processing industry, being important elements of the country's overall economic structure. While there was general agreement on the desirability of increased use and processing of local raw materials, the important issue of resource mobilization for processing for export was not fully clarified. While it was recognized that processing of raw materials before export should increase value added and foreign exchange earnings, it was feared that, quite possible, the extra costs of processing would not always be covered by the extra receipts so that the processing industry had to be subsi . Should Tanzania use scarce investment resources in the processing of raw material for export if production had to be subsidized? However, in the course of the preparations in 1981 for the Union Five-Year Development Plan (1981/82 - 1985/86) a clear policy emerged - in the face of the overriding necessity of increased foreign exchange earnings - for a strengthening and expansion of manufacturing production capacity for export market. In implementing the Union Plan priority is to be placed, inter alia, on industries that contribute to foreign exchange earning, such as leather, textile and packaging industries.

Similarly, the use of local raw materials may in some cases raise the costs for local industries. It being recognized that the use of resources for domestic industry decreases dependency on outside sources of supply (while exporting processed goods rather than raw materials does not generally decrease dependence on external markets) the BIS' guidelines to the planners are in this case explicit on the relationship between costs of production and the use of local raw materials. The local raw material will normally be given preference, limited to 30 per cent above the cost of imported raw materials.

The Basic Industry Strategy was influenced, for instance, in the case of choice of techniques, by considerations primarily directed towards achieving goals, other than structural change and self-reliance, such as increase of economic growth, employment creation, regional dispersal of industry. Thus social cost-benefit analysis will be used to determine the appropriate choice of techniques in the industry sector (as well as in other sectors).

The manufacturing sector at present

In the 1950s there was an introduction into an economy with primarily small-scale manufacturing enterprises, of a few medium- to large-scale investments in industry, largely by transnational corporations. Industrialization post-1961 continued a process of dualism between large-scale capital-intensive enterprises and small-scale production. The 'traditional' areas of food processing, tobacco and beverages, textiles and garments, leather and wood products and printing remained long dominant.

Following the Arusha Declaration in 1967, a number of state-owned enterprises, parastatals, came into being, as the Government nationalized or acquired majority share holding in various larger private sector enterprises as well as embarked on a programme of establishing new industries wholly owned by the state. Initially the responsibility for the operation of these enterprises lay with the National Development Corporation (NDC) which had been established in 1965. Later, when the number of public enterprises increased rapidly, the NDC group was split up into more manageable entities, still of the nature of holding corporations such as TEXCO (National Textile Corporation), NCI (National Chemical Industries Corporation), SUDECO (Sugar Development Corporation), TLAI (Tanzania Leather Associated Industries), TWICO (Tanzania Wood Industries Corporation), and STAMICO (State Mining Corporation). Each of these holding corporations has a number of subsidiary companies or production units which it supervises.

The rapid increase in the public sector manufacturing, while the private sector industries developed more slowly, led to some structural shifts in the 1970s. Notwithstanding this, Tanzania's manufacturing during the last decade has been characterized mainly by (i) continued development of import-substituting light industries producing mass consumption goods like textiles, bicycles, razor blades and radios; (ii) certain expansion of the agricultural processing capacity in, for instance, cashew and sisal to gain manufactured value-added; and (iii) building up of production of intermediates such as steel, aluminium, pipes, cables, farm implements as well as vehicles assembly and, particularly during the most recent years, paper and pulp, fertilizers and cement. However, in the, from long-term technological development point of view, very important area of machinery and transport equipment, no significant structural reorientation has occured and the capacity that exists now, or is being created, is confined to assembly only.

Industrial employment (in firms with 10 or more employees) almost doubled between 1970 and 1980, from 48,000 to 89,000. The average growth rate 1970 to 1980 in the industrial labour force was 6.2 per cent as compared to an average growth rate in MVA (at constant prices) of 2.5 per cent for the same period. Up to 1978 the growth rates of the labour force in manufacturing and those of the MVA were fairly well in step. However, while in 1979 and 1980 a decrease in MVA was registered the employment continued to grow with the consequences of reduced labour productivity. The figures suggest that the Tanzanian industry may be seriously overmanned, a matter to which particular attention has been given recently. However, a number of other factors have also contributed to the problem, in particular

- under-utilized capacity;
- poor project planning and prolonged running-in periods for new industries;
- lack of effective incentives to improve factor productivity.

As of the financial year 1980/81, the problems of labour productivity in the parastatals have been acknowledged and, in a new income policy, material incentives have been accepted and payment by results schemes recommended.

The stagnation of overall exports during the last few years is one of Tanzania's most serious economic problems, since it has greatly affected the availability of foreign exchange to buy necessary imports of raw materials and intermediate goods. Manufactured export performance has, however, shown an encouraging development during the last two years. The proportion of manufactured exports as percentage of total exports which was only 13-14 per cent in 1977 and 1978, has since then steeply increased and constituted in 1980 33 per cent of all exports. It was in value terms (current prices) in 1980 more than double that of each of the years 1977 and 1978. Of crucial importance for a sustaining of this positive development will be the successful tackling of problems, such as:

- the fact that most major industrial investments have been designed for import substitution production;
- low labour productivity and relatively high wages make many potential export products uncompetitive;
- low capacity utilization;
- agricultural supply problems which have reduced the exports of several processed products.

A persistent problem confronting Tanzanian industrialization has been that of excess capacity. This has prevailed in a number of agro-based industries, such as meat and fruit canning, cashew and sisal processing, saw milling and vegetable oil production, but also in industries dependent on imports, such as steel products and fertilizers. The cement production has also suffered from considerable underutilized capacity. The principal reasons have been inadequate infrastructure and equipment (for collection and transport), delay in receiving imports, market constraints and a severe shortage of foreign exchange to buy imported spare parts and raw materials.

Resources

In 1979 agriculture contributed 54 per cent of the total GDP, while 83 per cent of the country's labour force was engaged in agriculture. Main agricultural products being processed include

maize and rice, cotton, sisal, coffee, tea, tobacco, sugar, pyrethrum, groundnuts, cashewnuts and coconuts.

Tanzania has abundant livestock resources. Only one large meat canning factory is presently operating, in Dar-es-Salaam, while two more factories are under construction, in Shinyanga and Mbeya, respectively. The fish resources - both fresh water and salt water - are also large. Lake Tanganyika on the western border has potentially the largest reserve of edible fresh water fish and it has been estimated that with proper means of fishing, Tanzania could obtain up to half a million tons of fish annually from the Lake without any danger of over-fishing. In 1978 (the latest year for which statistics is available) the whole fresh water fish catch of the country was only 163,000 tons. Exports of fish and fish products should have great potential. However, while in 1971 these products were exported at a total value of 15 million Tanzanian shillings, the exports in 1978 were only 3.6 millions Tanzanian shillings.

In 1980 the total forest plantations in the country were estimated to cover an area of 70,000 hectares. At present about 5,000 hectares are planted each year. Emphasis is given to soft wood plantations, which are quick growing for pulp, fuelwood and other uses, such as poles. The saw milling capacity is estimated at 250,000 cubic metres, out of which 105,000 cubic metres comes under the parastatal Tanzania Wood Industries Co. (TWICO). The other capacity refers to a great number of private mills, most of them very small and equipped with poor and worn-out machinery. In 1978 the total production was about 180,000 cubic metres whereof 25 per cent from TWICO. These are two plywood mills and one particle board and one fiber board plant in the country. Other wood processing industries are a match factory, joinery and furniture industries.

A major pulp and paper plant is currently under construction at Mufindi in the southern part of the country. When fully operational it will produce 60,000 tons per year of paper products ranging from newsprint, printing papers, kraft board, sack kraft and wrapping papers.

Regarding mineral resources, the government's policy for known deposits and new mining possibilities is to give priority to (i) minerals used by the basic local industries, like limestone, clays and sands, (ii) foreign exchange earners or savers, like diamonds, gold and coal and (iii) mineral industries with linkage possibilities, like iron and chemical industries.

Prospects for resource-based industries

Provided that the various difficulties (lack of foreign exchange, management and skill shortages, and other constraints) facing the Tanzanian industry are largely overcome, the potentials for the further development of industrial capacities supporting endogenous exploitation of the country's resources are very real. Thus, although most agricultural processing industries operate under capacity, a variety of further agro-industry opportunities have been brought attention to. These are, for instance, in the fields of sugar production, tobacco processing, cashewnuts processing.

Further expansion of the textile industry, based on increased production of local cotton, to satisfy local demand and possibly export markets in the case of speciality products, is given particular attention. In view of the sharply increased price levels for synthetic products, the prospects for a further revival and continued growth of the sisal processing industry, including production of sisal products, such as rope, twine, bags and carpets, are most promising. The potential export markets in neighbouring countries for, in particular, sisal bags, would seem quite interesting.

Fruit and vegetable canning for export purposes may be looked into in the context of establishing small- to medium-sized processing plants in places where surplus fruits and vegetables are available.

As for forest-based industries, there seems to be scope for establishing some wood-processing factories for domestic and foreign markets in specific locations (although there is excess capacity in most saw mills and other related plants such as plywood, particle board and fibre board factories in the country). Depending on the availability of primary wood products, the possibility of starting secondary wood processing industries should be actively considered. Joinery, furniture, pre-fabricated houses, various components and special wood products would all be suitable for new development. At present, there exist only one or two medium-size furniture factories which produce high quality products.

When the two meat canning factories, now under construction, become operational, the potential of a project for utilization of various by-products for domestic market and exports should be looked into. Now, the potential further development of the tanning, leather and leather goods industry should be investigated, in particular with a view of expanding exports of leather products.

The fish resources of the country would seem to offer good prospects for the development of fish processing industry, with very large reserves of fish, in particular in Lake Tanganyike and, of course, in the Indian Ocean.

The prospects for various agro-based chemicals have also been briefly reviewed. Raw materials in this context are the by-products from the sugar mills, molasses and bagasse. At present, the possibility of producing starch, glucose and industrial alcohol from cassava is being looked into.

Much attention has been given to the possibilities of exploiting the country's mineral resources, iron ore and coal, for the development of the iron and steel industry. Although in the longer perspective the

development of an indigenous integrated iron and steel industry would form an important base, immediate priority attention is given to the further development of the country's metal making industries. A development plan for these industries which has recently been carried out by TISCO for the National Development Corporation, shows that significant unfulfilled demand exists for a variety of products. Preliminary steps are taken for the establishment of some further key metal working industries, to supplement the capabilities and capacities of existing industries as required.

Plans are underway to build further cement factories. including one in southern Tanzania to serve that part of the country and for export. The Government is considering the possibility of building mini-cement factories to serve specific market requirements where, due to the geographical situation, it becomes too expensive to transport cement from existing factories.

The country's first ceramic plant is being constructed in the Morogoro area where almost all the basic raw materials are locally available. A fairly large portion of the output will be earmarked for exports, in particular to neighbouring countries. A brick and tile plant is under construction near Dodoma and consideration is being given to the possible setting up of a refractory plant at Tanga.

Considerable deposits of phosphates exist near Arusna and project is under implementation with Finnish assistance to for use in the plant of the Tanzania Fertilizer Company.

An agreement has been signed with an American company for the exploitation of the Songo Songo natural gas reserves and the subsequent production of ammonia. Part of this ammonia will be exported and the rest will be used in the production of fertilizers such as urea and ammonium sulphate.

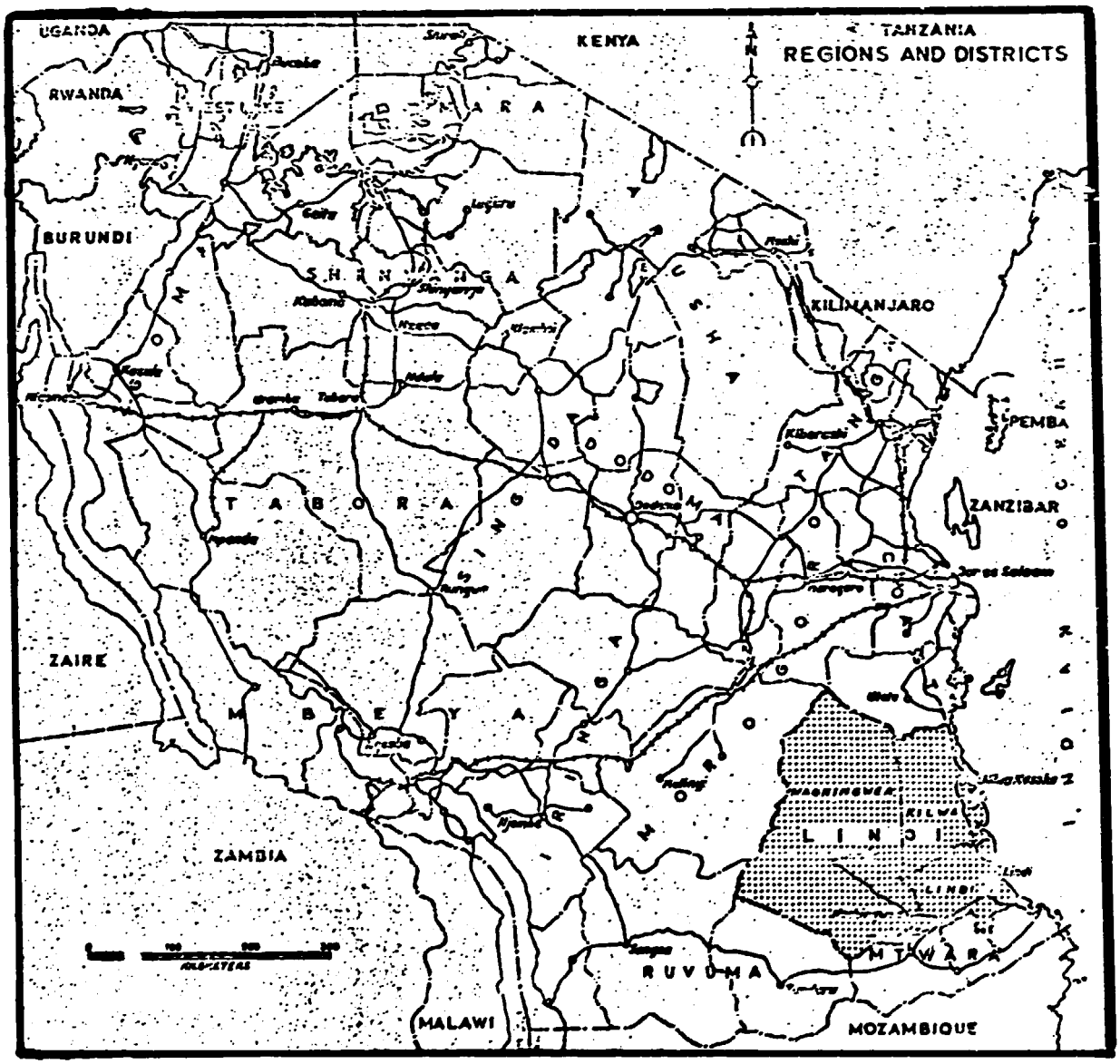
Considerable deposits of bauxite clays exist and, although the aluminium content of these deposits is too low for the production of aluminium, the possibility of using these clays to produce alum, important chemical in water treatment, could be studied.

Good quality silica sand deposits used in the manufacturing of glass exist near Dar es Salaam and along the shores of Lake Victoria. Also good quality quartz is available in the country. Further expansion of the glass industry is given attention to.

The country has a very great potential for expanding its salt production (by evaporating sea water). In view of the shortage of salt in the country and the export potential to neighbouring land-locked countries, small- to medium-size salt projects should be studied.

The possibility of utilizing the coal reserves of the country to produce chemicals, such as explosives, synthetic rubber and phenolic resins should be considered in the context of comprehensive exploitation of the coal reserves.

MAP OF THE UNITED REPUBLIC OF TANZANIA



Chapter I

INTRODUCTION

1.1 The objective of this study report is to analyse and assess the prospective industrial development of the United Republic of Tanzania and the effective utilization of the country's human and natural resources in that context.

1.2 The industry sector analysis is presented within the general economic setting of the country, key elements of which are as follows:[1/]

- the country has an area of 945,000 km^2 and a population of 19 million, with a population growth rate of 3.3 per cent; the urban population is only 1.6 million of which more than half is in Dar es Salaam;
- the Gross Domestic Product 1980 was TShs 35.6 billion which equals US $4.3 billion, corresponding to a per capita GDP of US $240;
- the labour force in the monetary sector is just over 0.5 million, of which about 100,000 are in industry;
- the inflation rate has been high during 1981; the consumer price index is increasing at an annual rate of 30 per cent;
- for 1981 imports are estimated at TShs 9 billion and exports at TShs 4.5 billion; the deficit is being covered mainly by development aid as grants and loans

1.3 The study report is structured in the following manner. After this introductory part, four chapters provide the basic review and analysis, namely, Chapter II, 'Policies, strategies and machineries for industrial development', which reviews the policy and planning approaches used and the institutional infrastructure developed to support the industrial development; Chapter III 'Structure of the industrial sector', in which the country's manufacturing activities are assessed; Chapter IV 'Resources', in which an inventory is provided, as comprehensive as possible, of the resource base which

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1/ A more detailed description of the general economic background is given in Appendix 1.

has direct or indirect bearing on Tanzania's industrial development; and Chapter V, 'Prospects for industries to support endogenous exploitation of the country's resources', where the potential for the further development of industrial capacities on basis of the effective use of the country's resources is examined. Some 50 brief 'project profiles' or project ideas with identified potential local sponsoring agency or company are given in a listing at the end of Chapter V.

Chapter II

POLICIES, STRATEGIES AND MACHINERIES FOR INDUSTRIAL DEVELOPMENT

2.1.1 At the time of Independence in December, 1961, Tanzania had only a rudimentary industrial structure with a few medium- to large-scale industries. Production of sugar, beer, cigarettes, textiles, and shoes was not sufficient to meet domestic demand. The only export industries were canned meat and wattle extract. There were some small establishments producing clothing, bread, bricks, footwear, and the like. Manufacturing and handicrafts contributed about 7 per cent of GDP and the share of manufacturing employment in total wage employment was 8 per cent.

2.2 Policies and strategies after independence

2.2.1 The newly independent Government inherited an industrial strategy based upon reports by A.D. Little, Inc. and the World Bank.[1/] This strategy was to encourage private investors, mostly foreign, to produce goods for the domestic market. Processing of local raw materials for export was seen as a longer term possibility, but at that time the most promising prospect was to substitute domestic production for the import of cotton textiles, cigarettes, shoes, beer, sugar, cement and tyres.

2.2.2 The First Five-Year Plan[2/] - 1964-1969 - proposed a more ambitious programme of industrial development without changing the broad outline of the inherited strategy. The analysis underlying the First Five-Year Plan strategy was that industrialization was limited by two factors: the availability of capital and the extent of the market. The capital constraint could only be overcome by reliance on private, mainly foreign, investment. Three-quarters of total industrial investment during the First Five-Year Plan period was to come from the private sector. The Government was pre-

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1/ A.D. Little, Inc., Tanganyika Industrial Development, Dar es Salaam, 1961, and IBRD, Economic Development of Tanganyika, Baltimore, 1961 - see also Government of Tanganyika, Development Plan for Tanganyika, 1961-62, 1963-64, Dar es Salaam, 1961.

2/ The United Republic of Tanzania (URT), Tanganyika Five-Year Plan for Economic and Social Development 1 July 1964 - 30 June 1969, Dar es Salaam, 1964.

pared to participate in financing through its Tanganyika Development Corporation, but the main policy instruments to achieve industrial investment targets were to be accelerated depreciation allowances, tariff protection, and guarantees for the repatriation of capital for the foreign investors.

2.2.3 The Plan proposed a wider range of import substitution investments for the domestic market, including the production of rolled steel, oil refining, and fertilizer. It also proposed that processing of sisal and cashewnuts for exports be initiated on a modest scale. Finally, it extended the concept of import substitution to embrace the entire East African Common Market of Kenya, Tanzania and Uganda. Nevertheless, the industrial strategy, remained broadly consistent from the time of independence until the Arusha Declaration in 1967 (see below). The aim was to increase the rate of economic growth by exploiting some obvious opportunities for industrial investment. However, manufacturing output was apparently valued largely for its potential contribution to GDP rather than for its linkage effects, external economics or role in structural changes as discussed in Chapter III. The early industrial strategy also paid little attention to three other aspects of industrial structure: pattern of ownership; choice of technique and comparative advantage.[1/]

2.3 Post - Arusha industrial strategy

2.3.1 The Arusha Declaration adopted in February 1967 chartered a completely new course for Tanzania based upon equality, socialism and self-reliance. It reversed a basic principle of the previous industrial strategy; dependence on foreign investment as the major instrument of industrial development. Instead most major industries 'National Industries' would now be publicly owned and most new investment would be made by the public sector.

2.3.2 Foreign investment could no longer be the principal agent of industrial development, first, because the requisite amounts of foreign capital were not forthcoming and, second, because dependence on foreign investment would not be consistent with political independence, self-reliance or socialism.

1/ IBRD, Tanzania Basic Economic Report, Annex V - Industry: Perspective and strategic choices, by Gene Tidric, December 1977.

2.3.3 A second consequence of the policy changes following the Arusha Declaration was increased attention to employment creation in industry. One concern which led up to the Declaration was the rapid growth of wages, particularly in large-scale industry. This was believed to be responsible for growing inequality between urban workers and peasants and for the stagnation of overall employment growth. A new incomes policy based upon an ILO report[1/] was introduced to reverse these trends. The wage guidelines established by the new incomes policy set an upper limit of 5 per cent for annual wage increases.

2.3.4 The Arusha Declaration also attempted to define the role of industry within the overall strategy of economic and social development. Development was seen as the development of people, not as income growth or structural change. But since the development of people is not primarily a matter of investment, this did not mean that investment in industry would be greatly changed.

2.3.5 Tidric[2/] points out that the Arusha Declaration made no connection between the structure of production and its underlying concept of development. It therefore had almost no implications for the structure of production and investment, though it did, of course, imply a better distribution of income between urban and rural areas. In the absence of any link between the production structure and development, investment in industry was to continue much as before, except that now it would be undertaken by public enterprises.

2.3.6 This interpretation of the strategic implications for industry of the Arusha Declaration is supported by the subsequent development plan.

1/ ILO, Report to the Government of the United Republic of Tanzania on Wages, Incomes and Price Policy, Government Paper No.3, Dar es Salaam, 1967. This is frequently called the Turner Report after its author Professor H.A. Turner. The Government's response was contained in United Republic of Tanzania, Wages, Incomes, Rural Development, Investment and Price Policy, Government Paper No.4, Dar es Salaam, 1967.

2/ Gene Tidric (IBRD, Tanzania Basic Economic Report, Annex V), op. cit.

The Second Five-Year Plan[1/] - 1969-1974 - the first to be prepared after the Arusha Declaration, set a target rate of growth for manufacturing of 13.0 per cent, double the target rate of 6.5 per cent for total GDP. This differed little from the First Five-Year Plan with a planned rate of industrial development of 14.5 per cent and a target rate for total GDP of 6.7 per cent.

2.3.7 In addition to being ambitious on the size of the industrial programme, the Arusha Declaration gave no positive guidance on the content. The industry chapter of the Second Five-Year Plan, however, extended the range of possibilities. In addition to producing simple import substitution goods, intermediate and capital goods (later), manufacture for exports and simple manufactures from small-scale industries, the Plan provided that industry was to be decentralized, labour-intensive techniques were to be encouraged, social cost-benefit analysis was to be used to evaluate all industrial investments consistently, and cost reduction was to be enforced through reducing tariffs over time. Nevertheless, the industrial sector as it finally emerged was little more than a list of 385 projects of which 70 per cent were expected to be completed. However, there was increasing concern about what industrial commodities should be produced, the market orientation of industry, the cost of production, and linkages with other sectors, but no guiding doctrine emerged nor was there any visibly coherent pattern of policy with respect to these aspects of industrial strategy. The definition of a long-term industrial strategy was left until the preparation of the Third Five-Year Plan started.

2.3.8 The Third Five-Year Plan[2/] - 1976-1981 - which for industry was also the first part of the Basic Industry Strategy (BIS) (see below), set a target rate of growth for manufacturing of 9.3 per cent compared to 6.0 per cent for total GDP.

1/ United Republic of Tanzania, Tanzania Second Five-Year Plan for Economic and Social Development 1st July 1969 - 30 June 1974, Dar es Salaam, 1969.

2/ United Republic of Tanzania Third Five-Year Plan for Economic and Social Development 1 July 1976 - 30 June 1981, Dar es Salaam, 1976.

2.4 Long-term industrial strategy 1975-1995 - the Basic Industry Strategy (BIS)

2.4.1 After the Arusha Declaration there was general agreement that Tanzania must pursue a socialist industrial strategy. However, apart from the implication that the role of the private sector would be limited, there was little agreement about what constituted a truly socialist strategy. While not everyone concerned with Tanzania industrial policy had a fully-articulated strategy, most subscribed, either implicitly or explicitly, to one of four main models[1/] of socialist industrial development: a maximum growth strategy, a processing strategy, a basic industry strategy or small-scale industry strategy.

2.4.2 During the preparation of the Third Five-Year Plan a long-term industrial strategy was also to be included in that exercise. The strategy finally adopted by the Government incorporated elements of several of the above mentioned strategies, but the main rationale, product composition and policy recommendations were drawn from the basic industry strategy. To emphasize this link, the Government has called its chosen strategy the Basic Industry Strategy (BIS)

2.4.3 The working party responsible for the preparation of the industrial plan of the Third Five-Year Plan had identified seven national goals which would be affected by the choice of industrial strategy: industrial growth, structural change, employment, income distribution, regional distribution, workers' participation and self-reliance. It further reasoned that the main objectives to which industry could contribute were structural change and self-reliance and these would be the main considerations influencing industrial strategy. The argument was based on the assignment of particular policy objectives (structural change, on the grounds that the link between instrument and objective was particularly strong in this case. The major burden of achieving other objectives would be left to other policy instruments and other sectoral development strategies. Finally, it followed that since structural change was the main objective to be served in the choice of industrial strategy, the strategy chosen was the only one which

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1/ See M. Boemer, Models of Socialist Industrial Development, Dar es Salaam, mimeo, September 1972.

produced the greatest structural changes - the BIS.

2.4.4 The Basic Industry Strategy provides for industries which meet the basic needs of the people first. Food processing, textiles, clothing, footwear and building materials are important components of the selected activities. With basic consumption needs increasingly met from local production, the strategy selects additional activities which can use local resources to supply these industries with more and more of their required inputs. Hence, the metal fabrication industry receives considerable impetus in order to service and supply machinery and equipment, and fabricated metal construction materials; and iron and steel is produced to supply both metal fabrication and construction industries. Similarly, glass, cement, plastic products, leather, wood products, paper, printing, chemicals, fertilizers, ceramics and petroleum industries are all to be developed, either to supply agriculture and the basic consumer good industries of Tanzania, or to supply intermediate goods industries which in turn supply agriculture and consumer goods industries.

2.4.5 Although the objectives of structural change and self-reliance dominated the selection of industries to be developed over a twenty-year period, other goals were not entirely neglected. The BIS also incorporates some ideas from the advocates of the small-scale industry, maximum growth, and processing strategies. There are several features of the BIS which should be highlighted.

2.4.6 A pure basic industry strategy would give top priority to industries supplying goods for the minimum needs of the masses and to the production of intermediate or producers goods. Emphasis would be given to products using local resources and to production for the local market. The BIS is also based on the assumption that the economy must be restructured to reduce relative dependence on international trade, thus "developing Tanzania's resources to meet Tanzanian needs". Such industries will be developed as fully as possible to meet domestic demand, subject to the availability of resources and to certain technical requirements. However, the selection of industries to be included in the strategy, especially for the early years, was modified in several ways.

2.4.7 First, plans for several new investments were already far advanced and even though some of them would not have been given high priority under the BIS, they were commitments for which it would have been too costly to change. Consequently, the new investment priorities of the BIS would only gradually begin to shape the structure of industry. This has been evidenced by the data presented on the structure of industry in Chapter III.

2.4.8 A second way in which investment priorities were modified was to permit some further expansion of processing industry. This was deemed necessary in order to avoid disruption of the economy. Activities like cashew processing and diamond cutting do not fit the essential aims of the BIS, but were important element of the economic structure. It was therefore deemed necessary, particularly because of the foreign exchange constraints, to continue and even expand some of these activities. However, several influential policy makers have defined the aims of the BIS to include processing local raw materials for the domestic market as well as for export.

2.4.9 In one of the guidelines to planners, it is expressed that, should there be additional resources for industrial expansion when all possible basic industries have been selected, other (non-basic) industries will be included and judged in large part on the basis of efficiency, i.e. their ability to earn a high rate of return on capital or save foreign exchange with the lowest possible expenditure of local resources.

2.4.10 There has been general agreement on the desirability of increased use and processing of local raw materials. However, there are some aspects of this which the authors of the BIS felt needed classification. As indicated above one important issue concerns processing for export. Processing of raw materials before exporting almost always increases value added and net foreign exchange earnings. However, it is possible that the extra cost of processing is not covered by the extra receipts, so that the processing industry has to be subsidized. Should Tanzania invest in the processing of raw material, for export if production has to be subsidized?

2.4.11 Similarly, the use of local raw materials may in some cases raise the costs for local industries. It should be noted, however, that using local resources for local industry and processing raw materials for export are not symmetrical. The use of resources for domestic industry decreases dependence on outside sources of supply; exporting processed goods rather than raw materials does not decrease dependence on external markets, unless a large proportion of production is also for the domestic market.

2.4.12 The BIS' guidelines to the planners are therefore explicit on the relationship between costs of production and the use of local raw materials; local raw materials will normally be given preference but this preference will be limited to a specified percentage (30 per cent) above the cost of imported raw materials.

2.4.13 There is quite often a conflict between using local resources and satisfying consumer preferences. The Working Party on the Long-Term Industrial Strategy tried to give some guidance on this issue in the following proposal: "Preference should be given to the production of products using local resources. Products which fulfil similar needs but which are produced from imported materials should usually be made available, but at a price which reflects their higher social costs of production. When the product using imported materials is a close substitute in price and quality for a locally-based product, as in the case of garments, the imported-based products should only be made available in very limited supply and at a high price premium".[1/] This proposal points to a willingness to rely on market signals and a reluctance to override consumer wants. However, judged by the policies of the Third Five Year Plan it is evident that production based on needs (as determined by central planners or political leaders) rather than wants (as determined by market demand) is becoming more important.

2.4.14 The Tanzanian BIS thus reverses conventional growth-oriented strategies; they choose products, market orientation, and source of raw materials on the basis of efficiency, with choice constrained by employment, dependence and other considerations. The Tanzania strategy chooses products,

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1/ United Republic of Tanzania, Report of Working Party No. 7 on Long-Term Industrial Strategy, mimeo, Dar es Salaam, 1974.

market orientation and sources of raw material on the basis of their role in restructuring the economy and reducing dependency subject to efficiency constraints.[1/]

2.4.15 An important feature of the BIS is the emphasis placed on small-scale industry. "Part of the resources available for industrial investment should be reserved for small-scale production in those industries in which small-scale techniques can compete reasonably well in price and quality with large-scale techniques".[2/] From this proposal in the BIS it is evident that although small-scale industry may require some protection, the intention is to limit the degree of cost protection and thus the extent to which the consumer interests are not fully taken into account.

2.4.16 There is opportunity to choose labour-intensive or small-scale techniques in several industries: food processing, wood furniture and soap making may be carried out in small-scale, labour-intensive plant; also production of clothing and some metal fabrication may use small plants.

2.4.17 Chapter III below discusses the organizational structure as laid down in the Third Five-Year Plan in which industries are divided into three levels, later reduced to two: 'National Industries' including most large-scale activities producing for the national or export market and 'Regional/ District Industries', including 'Village Industries', which cover small- and medium-scale firms producing mainly simple consumer goods for the local market. The idea behind the latter type of firms is to decentralize production in order to save on transportation costs and to expand industrial activities in small towns while the former type would be concentrated in a few industrial centres. Attempts are being made to improve the regional distribution of such centres (and of 'National Industries' in general).

1/ Gene Tidric, op. cit. page 72.

2/ United Republic of Tanzania, Report of Working Party No.7, op. cit. page 16.

2.4.18 Another way in which the adopted strategy was influenced of other strategies is that the choice of techniques within sectors is supposed to be made with a view to achieving goals other than structural change and self-reliance which are taken care of by the choice of activities. Techniques are to be chosen which would increase industrial growth, employment creation, and the regional dispersion of industry.[1/] This implies that social cost-benefit analysis will be used to determine the appropriate choice of techniques within sectors. This conclusion, however, must be modified to take into account the guideline on small-scale industry and other aspects of the choice of technique discussed elsewhere in this section. Nevertheless, efficiency will be a prime consideration in the choice of technique within a sector.

2.4.19 The aim is to do something more than just simply maximize static efficiency. However, Tidric[2/] argues that the abstract ideal is to choose techniques which not only are efficient in static terms, but which are also consistent with Tanzania's existing skill level and which have potential for generating further technological change and institutional development. The practical implications are that Tanzania should, if possible, avoid turnkey projects which will be dependent on expatriate management for the foreseeable future, techniques which can only be obtained under strict controls from large multinational firms, and techniques which have little potential for technological change or development of generalized skills (such as hand processing of cashewnuts).

2.4.20 A recent UNIDO report[3/] presents various steps towards increased technological self-reliance which may be developed within the framework of a national technology policy. One such step would be the further exploring of the economic and technical potential of its local resources through intensive geological and technological investigations, to be undertaken

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1/ The hierarchy of assigned instruments and objectives is as follows: (1) Allocation of investments among sectors will be guided primarily by goals of self-reliance and structural change; (2) Techniques of production within sectors will be chosen to encourage industrial growth, employment generation, and regional balance; (3) General macro economic policies and the organization of industry will be the instruments used to influence income distribution and worker participation.

2/ G. Tidric, op. cit., p.74.

3/ Tanzania: Development Strategy and Technological Transformation for Self-Reliance, draft report. UNIDO Technology Programme, 2 November 1981.

with the aim to discover materials which could reduce the present heavy reliance upon imported inputs for agriculture, construction and manufacturing industry.

2.4.21 An important feature of the Basic Industry Strategy is the sequencing of the selected industries. The ultimate aim of the strategy is the development of an industrial structure and national input-output flows which differ significantly from the pattern of 1975. However, the rate of which structural change can be achieved will depend on the growth and change in Tanzanian demand for specific commodities and the related technical requirements of the industries (economies of scale); and also on the co-ordination of industries with backward and forward linkages. The speed of structural change may also be slowed by the existing structure, under which Tanzania's essential foreign exchange earnings are dependent on the very industries which the strategy would reduce in importance.

2.4.22 The sequencing of the strategy would require the balancing of three major factors. First, the basic needs of consumers must be met. In most cases this will also provide a basis for structural change. However, to the extent that there are conflicting objectives, some limitation will be placed on the speed of structural change. Second, it was acknowledged that activities such as processing of certain agricultural raw materials (e.g. cashew and sisal) and the export of semi- or unprocessed commodities (e.g. cotton and coffee) did not fit the essential aims of the strategy. They are, however, established and important elements of the present economic structure and therefore it may be necessary to continue and even to expand some of these activities which will not, in the long run, be given an important place in the industrial structure. Third, there are numerous technical considerations which will play a part in determining the sequence in which the selected industries can be developed. The eventual production of semi-finished steel from Tanzanian iron ore and coal is a prime example of the type of industrial development at which the strategy is aimed. It will be essential, however, to develop user industries (i.e. forward linkages) in engineering and metals first to provide a base for the efficient production of steel.

2.5 The Union Five-Year Development Plan, 1981/82-1985/86

2.5.1 The First Union Five-Year Development Plan, 1981/82-1985/86 will be the first phase of the Long-Term Programme 1981-2000 and is jointly prepared between the Tanzania mainland and Zanzibar. According to issued guidelines, in preparing the programme account is being taken of all the development activities that took place within the period of 1964/65-1980/81. The strategies and the development of the industries are specifically taking into account the Long-Term Industrial Strategy Plan 1975-1995 the implementation of which commenced from the Third Five-Year Development Plan 1975/76-1980/81. The industrial plan targets in the Union Five-Year Development Plan 1981/82-1985/86 do not in principle deviate from the targets of the preceeding Third Five-Year Plan. They have been accentuated by the Minister of Industries in his speech on the 1981/82 budget to the National Assembly,[1/] as follows:

(a) To increase efficiency and capacity utilization of existing industries.

(b) To expand and establish new industries in line with the long-term industrial plan. Emphasis will be put on establishing heavy industries in the field of iron and steel, and chemicals with the objective of restructuring the industry sector towards achieving self-reliance.

(c) To establish a system which would promote and harmonize the development of small and big scale industries to make them interdependent.

(d) To prepare the industries to start utilizing locally available raw materials, inputs and spares.

(e) To strengthen and expand production capacity for export market.

(f) To improve industrial technological infrastructure so as to reduce problems affecting industries.

(g) To make use of various international strategies that will have a positive impact on the efforts to increase production.

1/ The United Republic of Tanzania: Speech by the Hon. B.P. Mramba, M.P., Minister for Industries to the Budget Session of the National Assembly for the 1981/82 period, Dar es Salaam, 1981.

2.5.2 Furthermore, in implementing the Union Five-Year Plan first priority, as far as the industry sector is concerned, is to be placed, it was noted in the budget speech, on the following areas, considering the capability and requirements of the country:

(a) Industries that cater for basic needs of the majority of the population such as food, clothes, shoes and soap.

(b) Industries that sustain agricultural and rural development, like agricultural implements, tractors and insecticides.

(c) Industries that cater for construction, water and electricity sectors, such as cement, pipes and electrical cables.

(d) Industries that support transport and communications, like motor vehicle assembly and manufacture of railway wagons.

(e) Industries that contribute to foreign exchange earning, such as leather, textile and packaging industries.

(f) Industries that increase our technological capacity and self-reliance, for example machine and machine tools.

2.5.3 Although the strategy of implementing the Union Five-Year Plan 1981/82-1985/86 will not differ from the one used in the Third Five-Year Plan, greater attention will be put on improving the planning and monitoring of project implementation as well as setting acceptable standards for evaluating performance at all stages.

2.6 Parastatal manufacturing enterprises

2.6.1 Following the Arusha Declaration, the policy has been that most major industries should be publicly owned and most new investment would be made by the public sector. The policy of socialism meant, among other things, placing the ownership of the major means of production and distribution in the hands of the people through the Government. In order to implement these policies and the build up of the public sector a number of enterprises were either nationalized or the Government acquired majority shares. Apart from nationalization the Government embarked on a programme of establishing industries which were wholly owned by the public. The new industrial plants would be the tool through which the Government could play a considerable role in affecting structural change. The importance the Government attaches to the implementation of these policies has been reflected by the establishment of a special sub-committee of the National

Executive Council (NEC) to monitor the conduct and performance of the public enterprises.

2.6.2 From the above it follows that the Government has assumed the prime responsibility for the industrial development of Tanzania. In so doing it has been necessary to build up a considerable institutional machinery to execute and support this development. On the direct production side a number of parastatal holding corporations and authorities (for various cash crops processing) have been established to which a number of subsidiary companies belong. These are all shown in Appendix 2.A and, as could be observed, not all of them fall under the jurisdiction of the Ministry of Industries but also Ministry of Agriculture, Ministry of Water and Energy, Ministry of Livestock Development and Ministry of National Resources and Tourism. The organization and control of public enterprises is discussed in Chapter III, Section 3.8.

2.6.3 Although the First Five-Year Plan mostly relied on private investments there were indications already during that time that public sector investments were to be strengthened. In January 1965 the National Development Corporation (NDC) was established by absorbing the Tanganyika Development Corporation and the Agricultural Corporation. According to the Act the NDC was to facilitate and promote the economic development of the country. It was established to spearhead attempts to shift control of the economy from the private hands to the public. In 1965 the President had referred to the NDC as a government investor and a socialist organization in the sense that it was the people's institution of economic ownership and expansion. In its initial phase NDC became responsible for the continuing operations of the new public enterprises along commercial lines maintaining existing management during this period. These operations were not only in manufacturing but included also such diverse activities as mining, agriculture and tourism. Later, when the number of public sector enterprises increased rapidly the NDC was split up into more manageable entities and has been placed under the supervision of the Ministry of Industries - its so called parent ministry.

2.6.4 The State Mining Corporation (STAMICO), whose parent ministry is the Ministry of Mining was established to take over from NDC all mining and related enterprises. The agricultural activities of NDC were given to a number of corporations under the relevant ministries. Having rationalized

the holding corporations in such a way that each corporation was attached to its parent ministry,[1/] the diversity of the remaining industrial activities under the NDC warranted further rationalization. Thus, NDC's activities were recently divided along sectoral lines so that NDC itself now concentrates on metal and engineering industrial enterprises only. All other remaining activities have been allocated to various other recently created holding corporations as shown in Table 2.1.

2.6.5 This rationalization carried the sectoral specialization a step further. Each holding corporation has a group of subsidiary companies which it supervises. Usually these subsidiaries are the producing units.

Table 2.1. Parastatal manufacturing holding corporations

Holding corporation	Type of industrial activity
National Development (NDC)	Metal and engineering
National Textile Corporation (TEXCO)	Textiles
Tanzania Saruji Corporation (Saruji)	Cement and related non-metallic building materials
Tanzania Leather Associated Industries (TLAI)	Leather and leather products
Tanzania Cigarette Company (TCC)	Cigarettes and other tobacco products
Tanzania Breweries Co. Ltd. (TBL)	Brewing
National Chemical Industries Corporation (NCI)	Chemicals
Tanzania Karatasi Associated Industries (TKAI)	Paper and paper products, publishing and printing
Sugar Development Corporation (SUDECO)	Sugar (plantations and manufacturing)
National Milling Corporation (NMC)	Food manufacturing
Tanzania Wood Industries Corporation (TWICO)	Wood and wood products, including forestry
Tanzania Petroleum Development Corporation (TPDC)	Petroleum products
State Motor Corporation (SMC)	Motor vehicle assembly

1/ Except for the Southern Pulp and Paper Mill at Mufindi, which remained under NDC.

However, this is not true for two of the firms listed in Table 2.1. The Tanzania Cigarette Company and the Breweries had the technical and managerial capacity to stand on their own, independent from any holding corporation.

2.7 Supporting institutions

2.7.1 In support of industrial development a number of organizations or institutions in the fields of consultancy, research, training and finance have been established. On training of industrial manpower and financing industrial investments detailed presentation are made in Chapter IV and therefore they will not be repeated in the discussion below.

2.7.2 Towards the end of 1973 the Small Industries Development Organization (SIDO) was formed with assistance from UNIDO. It succeeded the National Small Industries Development Corporation which was previously in charge of supporting this type of industries. SIDO is a parastatal under the Ministry of Industries. It is not only responsible for assisting already existing small industries but, primarily, for planning and promoting the establishment of new ones. In its operations SIDO uses a number of different approaches, such as: identification of opportunities for various types of industrial activities in small-scale, feasibility studies, work on regional committees and other locally oriented bodies, technology transfer and a financing (hire-purchase) scheme. However, the most visible of SIDO's activities are the small industries estates and its training centres. There are plans to have at least one estate in every region and so far four have been completed while a number of others are in various stages of completion. The training centres were inherited from the NSIDC and their function is to train people in simple technologies, primarily on how to utilize local raw materials. A polytechnic centre in Mandaka has also been created by SIDO. The organization is represented in every region through its Small Industry Promotion Officer (SIPO).

2.7.3 At the regional level there are also Regional and District Development Corporations which among other activities are also parent companies for medium- and small-scale industries. Because of the proclaimed policy of socialism it follows that this type of corporations or co-operative ventures rather than individuals get first priority in the promotion of

production and retailing at the smallest administrative unit, the village. The institutional framework for establishing new manufacturing units at the village and district level is discussed more in detail later in this chapter.

2.7.4 The BIS in the Third Five-Year Plan put much emphasis on the development of metal working industries and it was strongly recommended that some kind of a supporting organziation for this industrial branch should be created. Consequently, in 1979 the Metals and Engineering Industrial Development Association (MEIDA) was registered. It was created with support from Sweden and its counterpart organization there, Swedish Federation of Metal Engineering Industries (Mekanförbundet) and therefore works along similar lines. Thus it was formed to be a forum for interchange of information and experience among industrialists in metal engineering industry. MEIDA acts as a link between the metal engineering industry and governmental institutions. It is expected to identify current problems affecting the metal engineering industry and involve and recommend measures for the solution of these problems. In addition, MEIDA promotes export sales in the metal engineering industry and generally assist member companies in their marketing efforts. Working closely with MEIDA is Tanzania Agricultural Machinery Testing Unit (TAMTU) which is assigned the responsibility of testing, modifying and designing prototype farm machinery and equipment. TAMTU as well as the Tanzania Engineering and Manufacturing Design Organization (TEMDO) are parastatals under the Ministry of Industry.

2.7.5 In order to create local competence in the field of industrial consulting the Tanzania Industrial Studies and Consulting Organization (TISCO) was established in 1977 as a parastatal under the Ministry of Industries. It is a multi-disciplinary consulting organization and concentrates on industrial development promotion of modern technology and management techniques. At present TISCO's expertise covers the area of management, marketing, finance, economics and engineering. Its main activities so far have been industrial feasibility studies at the request of existing industries or industrial promotion agencies in the country. When it is fully developed, it is expected to offer such services as project management and engineering designs for the industrial projects which it investigates and evaluates on behalf of its clients.

2.7.6 The Tanzania Bureau of Standards (TBS) was established in 1975. This institution is also a parastatal under the Ministry of Industries. TBS is responsible for determing specifications for the quality of industrial goods. It is also responsible for promoting the standardization of industrial products and specifications, so that Tanzania industry will be in a better position to offer quality goods to the local and export markets. In the areas of substituting imported raw materials TBS works in close collaboration with TIRDO (see below). TBS has the role of specifying the standards of raw materials to be used in industry and advising industrial enterprises on the techniques of raising the standards of raw materials before they are processed in industry.

2.7.7 With the task to stimulate activities in science and technology for development and to co-ordinate e scientific research and establish research priorities, the National Scientific Research Council (UTAFITI) was established as a parastatal organization in 1972. Prior to that a National Research Plan had been prepared which was formally received by UTAFITI at its first meeting in June, 1972. The parent Ministry of UTAFITI is at present the Ministry of Planning and Economic Affairs. The functions of the council are divided into advisory and executive. The advisory functions relate to establishing of priorities in scientific research; the allocation and utilization of research funds, national matters relating to scientific research; training and recruitment of research personnel; instruction on scientific subjects in educational institutions within Tanzania; and, the initiation, formulation and implementation of research policies and programmes. The executive functions relate to: the co-ordination of all types of scientific research carried out within the country; the promotion of documentation and dissemination of information on all research; collaboration with people or institutions or organizations within the country or elsewhere in matters pertaining to scientific research.

2.7.8 The Tanzania Industrial Research and Development Organization (TIRDO) become operational in 1979 as a parastatal under the Ministry of Industries. TIRDO has been established as an agency for industrial research and development of industrial technology. It is still in its implementation stage, however, and is assisted by UNIDO. Laboratory facilities for the development of production processes and for analysis of local raw materials

for use in manufacturing are being constructed. Also under construction are workshop facilities for the development of prototype plant adapted to local conditions. It will also establish and operate a system of documentation and dissemination of information on any aspect of applied research carried out by or on behalf of the organization.

2.7.9 Further research which is also related to manufacturing is undertaken by the Bureau of Resources Assessment and Land Use Planning (BRALUP). The Bureau is an interdisciplinary institution established in 1967 and is one of the main research wings of the University of Dar es Salaam. It initiates and undertakes research on behalf of the various government ministries as well as the University. It has broadly worked in six areas of interest: population resources and human settlement; environment and natural resources; water development; agricultural systems including food production; distribution of social services, particularly health and education; and transportation impact. Well over 150 research papers and reports have been produced in addition to a significant number of consultancy reports. Most of the findings of BRALUP are to be found in their Research Paper and Research Report series.

2.7.10 Another department of the University which carries out research also related to industry is its Faculty of Engineering and, in particular, the newly formed Institute for Production Innovation (IPI). The institute was formally established in May 1979 with assistance from the Federal Republic of Germany. IPI collaborates with industry, the Faculty of Engineering (FOE) and also other Tanzanian institutions supporting industrial development. The collaboration between the FOE and the IPI shall help to develop courses and research plus development activities at the FOE which are adopted to the needs of industry. IPI offers consultancy to local industry and villages. It also deals with applied research and prototype construction of appropriate machinery including setting up of an archieve on feasible technology literature and curriculum development at the FOE. IPI also works closely with TIRDO.

2.7.11 The training aspects of the activities of the University are dealt with in Chapter IV and so is also those of the National Institute of Productivity (NIP). However, NIP which was founded in 1974 through ILO assistance does not only conduct courses designed to improve productivity and efficiency, it

also arranges for the publication and general dissemination of materials produced in connection with the work of the institute including training materials, hand books and the recorded results of its research project. NIP carries out applied research studies and surveys aimed at developing practical techniques for the minimization of industrial and manpower problems in Tanzania. Its parent Ministry is that of Labour and Social Welfare.

2.8 Distribution and export

2.8.1 In the wake of the Arusha Declaration nine separate private companies were nationalized early in 1967. These companies then operated under the umbrella of the State Trading Corporation (STC), which was formed for this specific purpose and their working relationship with the STC was essentially that of holding corporation.

2.8.2 In 1970 the STC had opened eighteen branches to ensure that the corporation's distribution network embroided all the regions. In the same year a Presidential Directive was issued which confined all the importing and wholesale business to the STC. However, by the end of 1972 STC experienced a lot of operational problems. This led to the appointment of a Parliamentary Select Committee which came up with some far reaching proposals on STC. The Government having been satisfied that the majority of the weaknesses and problems of the corporation were inherent in the structure then decided that the STC had to be restructured.

2.8.3 As a start it was felt that some of the functions then performed by STC and its subsidiaries had to be streamlined by transferring them to other existing organizations as a measure of rationalization. The Shipping Agency Operations which formed a self contained unit was hived off and formed the nucleus of the National Shipping Agencies Co. Ltd. (NASACO). The Export Marketing Division which mainly handled agricultural products was also detached to form the General Agricultural Products Export Company (GAPEX), other functions which were similarly detached includes the Giraffee Extract Company, Tanzania Hides and Skins Ltd., Tanzania Elimu Supplies, the importation of steel, jute bags and hessian cloth, hard and soft boards.

2.8.4 In restructuring the STC it was also decided that six Importing Companies based in Dar es Salaam and eighteen Regional Trading Companies

(now twenty) be set up (see Appendix 2:A, item 24). The RTCs were to be established purely according to administrative regions. Above these groups of companies would be a Board of Internal Trade (BIT) whose main tool would be to supervise, co-ordinate and control their activities. BIT was thus formed in 1973. In the beginning the Importing Companies were in charge of importing the type of goods each was specialized in. Subsequently they have more and more become the confinee of these goods, i.e. they also buy and distribute the local production of their respective goods. In many cases this means that the Importing or Confinee Company imports the raw materials or intermediate good, distribute it to local producers, then buy up the final goods which is then distributed to the retailers. Consequently, the retailing system, including the Regional Trading Companies, is now dependent on these Importing or Confinee Companies for most of their goods.

2.8.5 The Government's long-term policy is to ultimately eliminate private retailing, at least in the country side, and put the responsibility for retailing in the hands of the RTCs (shops in major towns) and co-operative or village shops. In the cities, however, it is quite likely that private retailing will remain for some time.

2.8.6 The new trade system can be conceived more or less as triangle with the BIT the apex and the Importing Companies and the Regional Trading Companies at the base angles. BIT is then linked to the parent Ministry of Trade organizationally through its own Board of Directors. The composition of the local boards of the Regional Trading Companies is more or less the same in all regions with either the Regional Commissioner or the Regional Development Director as Chairman; the rest of the members include the Manager of the local branch of the National Bank of Commerce, one or two members of Parliament, the Regional Commercial Officer, a member from the local Regional Co-operative Union and some times a leading local businessman.

2.8.7 BIT does not in the strict sense have direct vested economic interests in its specified companies and is not even represented in the companies' Boards as is the case with the parastatal holding corporations mentioned above. Rather it is like a management trustee on behalf of the Treasury which is the sole shareholder. Thus, one of the key features of the new trade set up is the interdependence of all the group companies not only between the Importing and Regional Trading Companies but also with the BIT.

2.8.8 BIT is expected to develop and recommend to the Ministry of Trade policies on trade in the key areas of imports, distribution, pricing, trade credit and transportation. Upon approval of these policies by the Government, BIT is to ensure that they are being followed by all its companies. BIT is also expected to supervise, regulate and co-ordinate the operational activities of the companies to ensure that they are trading in the country's economic, political and social interest.

2.8.9 In order to promote exports a new institution was created in 1978 with similar relationship to the Ministry of Trade as that of BIT. The Board of External Trade (BET) was established to create a firm base of operations in bringing about the necessary co-ordination between markets and Tanzanian exporters, mainly to advise those institutions engaged in trade with the outside countries.

2.8.10 In order to increase exports of the traditional crops BET is to play the advisory role in the areas of local financing, transport, documentation and export promotion. For non-traditional products the main concern of BET will be to help, by all means possible, manufacturers increase output and to secure markets for them first in the neighbouring countries and the world over.

2.8.11 On local financing, BET will liaise with NBC in trying to help exporters secure the necessary finances. BET shall collect, assemble and disseminate all information related to external trade. It is to organize and supervise the preparation of Internal Trade Fairs and carry on export promotion campaigns to the outside world on both existing and potential export commodities. It is also to advise the government on potential commodities that can be produced for export markets.

2.9 Decentralization

2.9.1 Until the early 1970's the planning approach in Tanzania was "planning from above," i.e. plans were made by the Ministry of Economic Planning which directed the regions to implement. But like many other African Governments Tanzanians found it imperative to review the administrative structure inherited from the colonial power. The rationale for the decentralization reform in Tanzania, however, was predominantly political, i.e. a measure to adopt government administration to the needs of socialist rural development. The decentralization reform delegated

planning power not only to the regions, but further down to the district level and eventually also to the village level.

2.9.2 The main objectives of decentralization can be listed as follows:

(a) to manage development in the regions on basis of co-ordination of all functional activities within these units rather than on the basis of individual functional ministries run from the capital;

(b) to make the regions autonomous accounting units allowed to administer their own development funds instead of handling only recurrent funds;

(c) to achieve a reallocation of resources, including staff from the advanced regions to the less privileged ones;

(d) to ensure that delegation of authority does not stop at the regional level but is gradually pushed to the lower levels of administration;

(e) to make the senior officers in the regions more involved in policy-making (managers) and not only administrators of policies made by central government authories.

2.9.3 Before 1972 government activities were co-ordinated within independent functional ministries. Project and programmes in the regions were administered from the centre.

2.9.4 Delays resulting from this "over centralization" was a major reason for the decentralization reform. With this reform regions were elevated to the same status as ministries. The Regional Commissioners, while not in the cabinet, were now equal to the Ministers. The Regional Development Director, the Chief Administrative post created under decentralization, was the equivalent of the Principal Secretary in a Ministry. The regions became the chief employers of government staff, leaving only a skeleton number in the headquarters of those ministries whose activities had been decentralized. A chart of the present regional administrative structure is presented in Appendix 2:B.

2.9.5 In the rural areas proposals for new projects are now normally expected to come from the village level (see Appendix 2:C). The village government formulates programmes for development of their areas which is then forwarded to the district level where the different plans and programmes for the villages are discussed and scrutinized at various committees. During this process some proposals are deleted and eventually new ones are

initiated at the district level. A District Plan is then sent to the Regional Planning Officer who collects and co-ordinates the different district plans into one regional proposal which is then processed through the Regional Development Committee after which it is sent to the Regional CCM Executive Committee for ratification. At this final stage the regional plan has been divided by sector and area.

2.9.6 In the guidelines issued for the preparation of the Union Five-Year Plan 1981/82-1985/86 it is pointed out that, before giving any recommendations on regional programmes, it will be necessary for each region and the district to review the implementation of the past programmes so as to analyse the problems and get an appraisal which will be the basis in the designing of new programmes, bearing in mind the projects to be implemented on self-help basis and those for which government resources were required. Concerning the industrial sector, regions and districts must emphasize the establishment and the development of small industries as one of the ways to supplement the villagers income. Furthermore, town councils must design programmes to establish small industries. The activities of these industries must match with the activities of the heavy industries situated in various towns in the country.

2.10 International and regional co-operation

2.10.1 Tanzania is one of the signatories of the two Lome Conventions which provides for preferential trade arrangements between the European Common Market Countries and the APC (Africa, Pacific and the Carribean) countries. This should make it possible for Tanzania to export some manufacturing products, e.g. textile, despite difficulties in being competitive on the world market. Through the Lome Conventions the EEC countries have also pledged financial support to projects in the APC countries.

2.10.2 The East African Development Bank (EADB) in Kampala is the only remaining institution created under the East African Community which Kenya, Uganda and Tanzania decided to dissolve in 1977[1/] The Governing Council of the EADB has recently set up a five-member international panel to advise the bank on its financial policies and funding. The World Bank is financing

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1/ The border between Kenya and Tanzania is temporarily closed since January 1977.

a project to expand EADB's activities.[1/] According to its charter the EADB investments in Tanzania may be up to 38.75 per cent of its total investmen .

2.10.3 Another subregional group of countries which Tanzania has joined is the Organization of the Management and Development of Kagera River Basin, which was established in August 1977 by the Rusumo Agreement. The member states are Burundi, Rwanda, Tanzania and Uganda. One of the major projects to be undertaken by this Organization is the proposed Rusumo Falls hydro-power project. Plans for construction were approved in May 1981. This project will be of capital importance in the realization of the entire programme. Two railroads are also proposed, one running from Uvinza, Buyangwe to Rusumo: and the other line starting from Gisenyi through Ruhangeri, Kigali, Rusumo to Kemondo Bay on Lake Victoria. Possible assistance in the construction of these rail roads is being sought from UNDP, Austria and Italy. A multidisciplinary mission to the Organization consisting of twenty people of various professions has recently prepared a report with detailed information on selected bankable projects. The mission identified multipurpose development priorities in the basin in following fields: communications and transport: agriculture; energy; industry; and training. The final report is to be circulated to foreign aid donors.

2.10.4 Of more recent date is the grouping of the Southern African Development Co-ordination Conference (SADCC). The nine member states of SADCC are: Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania. Zambia and Zimbabwe. The SADCC co-operation was initiated at a conference in July 1979 in Aursha of Ministers of the five, so called, 'Front Line States' Angola, Botswana, Mozambique, Tanzania and Zambia, at which a declaration was drafted on their strategy for a closer integration of their economies, with a view to accelerating development and reducing dependence on South Africa. This declaration was adopted in April 1980 in Lusaka by a summit of the leaders of the nine countries, members of SADCC.

2.10.5 The second conference (SADCC 2) was held in Maputo, Mozambique, in November 1980. At SADCC 2 the nine countries met with potential donors who would fund projects envisaged under SADCC. The highest priority projects are within the transport and communications sectors. This is parti-

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1/ Africa Economic Digest, 28 August 1981.

cularly important since six of the nine countries are landlocked. The task before the nine members states is to rehabilitate existing railways and harbours following the successful liberation struggles in Mozambique, Angola and Zimbabwe and also of railways in other frontline states which were affected by the struggles. Also considered is the construction of new lines to connect with the existing transport and communication network in the region. Earmarked is also the co-ordination of airline schedules to make practicable movement within the region. Present estimates show that more than US $1.5 billion would be needed to finance urgent transport and communications projects over the next ten years. SADCC 2 was regarded as a success with donors pledging US $650 million over the next five years, 1981-86, for national and regional projects. A further US $800 million had already been allocated before the conference through the Lome Convention. This fund will also finance projects in the fields of food security and manpower training.

2.10.6 A second summit meeting between the leaders of the SADCC-countries was held in Salisbury, Zimbabwe in July 1981 where it was announced that 22 of the original 97 transport and communications projects identified at SADCC 2 were being under implementation, while a further 29 had been prepared and submitted to international financing agencies. In November 1981 the officials level SADCC 3 was held in Blantyre, Malawi to prepare for the sub-region's 1982 summit.

2.10.7 Various committees have been established to monitor and co-ordinate development potentials in different fields of economic activity. Thus, Tanzania is responsible for co-ordinating projects on industrial projects. A plan has been drawn up by Tanzania which envisages a three stage process to increase regional industrialization, to be tackled simultaniously. Short-term measures would concentrate on building up trade in regionally produced industrial goods in order to stimulate existing industrial capacity. For the medium-term, attention would be concentrated on development of industries able to satisfy basic needs in the region. Textiles, simple engineering to provide pumps and water pipes for irrigation, for example were suggested. Long-term measures would focus on the development of core industries, such as iron and steel.

2.10.8 The progress evidenced during the first two and a half years reflects a steady progress towards the ultimate goal of closer mutual economic ties between the SADCC countries which together constitute an area rich in

minerals, hydroelectric power and farm land. The immediate attention has been concentrated in the transport field where the dependence on South Africa is greatest and the scope for mutual co-operation between the front-line states most apparent.

2.10.9 Note should also be taken of the plans of Tanzania and Mozambique for setting up a free trade area in accordance with a recommendation made by their joint commission at a meeting in Maputo in March 1981. Under the free trade treaty, tariff barriers between the two countries will be progressively removed.

2.10.10 Finally, mention should be made of the plans, pursued in discussions during the last three years, with the support of the Economic Commission for Africa (ECA), for concluding a treaty on preferential trade agreement between 18 southern and east African states (including the SADCC states). A highest level conference was held in Lusaka on 21 December 1981 at which several of the prospective member countries of the treaty signed while others are expected to sign within three months time to ensure founder-member states. Tanzania, which did not sign, said, in an explanatory statement issued before the conference, that the "implications of the treaty for Tanzania's existing commitments for intra-African co-operation had not been adequately studied".[1/]

1/ African Economic Digest, 22.1.1982.

Chapter III

STRUCTURE OF THE INDUSTRIAL SECTOR

3.1 Development of manufacturing industry

3.1.1 The Tanzania economy is still highly dependant on foreign trade, imported manufactured goods and foreign technology, in return for export of processed or unprocessed primary products. Local manufacturing capability is inadequate and much resources are centralized in export crops. Transport systems follow the same pattern. No really fundamental changes have yet taken place in the structure, although industrialization is well on the way.

3.1.2 In the 1950s there was an introduction, into an economy of primarily small-scale enterprises, of a few medium- to large-scale investments in industry, largely by multinational corporations. At independence in 1961 Tanzania had six major companies: East African Tobacco, E.A. Breweries, Coca-cola, Tanganyika Packers (meat), Metal Box Company and Bata Shoes. Industrialization post 1961 continued through a process of dualism between large-scale capital-intensive enterprises and small-scale production. Large-scale units were set up as joint ventures with multinational corporations, causing important changes in the structure of industrial output, scale of technology, and location of industry. Examples are the Italian ENI - Agip financed refinery, the Portland Cement Company and the Kilombero Sugar Plant.

3.1.3 For the 1960s the available data demonstrate a steady growth of output (9.8 per cent per annum at constant prices) which increased the share of manufacturing in GDP from 7 per cent to 10 per cent and wage employment from 8 per cent to 14 per cent, increasing at about 12 per cent per annum. If sisal processing had been included the rate of growth would have been somewhat reduced. Furthermore, despite the apparent diversification of the industrial base, available data demonstrates that between 1961

and 1967 there was no significant changes. The "traditional" areas of food, drinks, tobacco, garments, textiles, leather, wood, and publishing remained dominant.

3.1.4 Following the Arusha Declaration in 1967 a massive increase in the number of parastatal firms took place, while the private sector manufacturing developed more slowly. This led to some structural shifts in the 1970s, with concentration mainly on: import-substituting light manufacturing of mass consumption goods like textiles, bicycles, razor blades and radios; expansion of the agricultural processing base in cashew, sisal and leather to gain manufactured value-added; and the building up of production of intermediates such as steel, aluminium, pipes, cables, farm implements as well as vehicles assembly and, more recently, paper and pulp, fertilizers and cement.

3.1.5 However, in the specially important area of machinery and transport equipment, which is a key sector from the point of view of long-term technological development, structural re-orientation was not significant and the capacity that exists now or is being created is confined to assembly only. Therefore this sector remains today a neglected area, accounting for less than 10 per cent of manufactured value added.

3.1.6 The steady expansion of agricultural processing capacity in leather, cashew and sisal has continued up to the present time. In sisal and cashew this has resulted in that the factories can only work at 20-60 per cent capacity given the decrease in production of sisal fibre and raw cashewnuts.

3.1.7 The total manufacturing output declined during the last year with the effect that the share of manufacturing output in GDP was back to its 1968 value. Table 3:1 illustrates the manufacturing sector contribution to the GDP since 1971 at current and constant (1966) prices.

3.1.8 In general the structural development of Tanzanian industry 1961-80 has followed a typical pattern of primary processing and light import substitution manufacturing. A small group of heavy, intermediate goods,

Table 3:1 Contribution of the manufacturing sector in Gross Domestic Product of Tanzania at current and constant (1966) prices

(TShs. million)

Year	Manufacturing sector's contribution to GDP(MVA)		Annual change		Total GDP		Percentage of MVA	Total GDP
	At current prices	1966 Prices	At current prices	1966 Prices	At current prices	1966 Prices	At current prices	1966 rices
1971	947	784	+14.4	+9.5	8,857	8,001	10.7	9.8
1972	1,144	850	+20.8	+8.4	10,032	8,539	11.4	10.0
1973	1,260	888	+10.1	+4.5	11,490	8,800	11.0	10.1
1974	1,482	900	+17.6	+1.4	14,010	9,020	10.6	10.0
1975	1,774	903	+19.7	+0.3	16,988	9,553	10.4	9.4
1976	2,047	961	+15.4	+6.4	20,606	10,165	9.9	9.5
1977	2,424	1,017	+18.4	+5.8	26,123	10,832	9.3	9.4
1978	2,860	1,051	+5.6	+3.3	29,993	11,445	9.5	9.2
1979	3,277	1,020	+14.6	-2.1	32,963	12,084	9.9	8.5
1980	3,262	893	-0.5	-13.2	35,637	12,516	9.2	7.1

Source: Annual Economic Surveys/Statistical Bureau - Dar es Salaam.

industries has been established; these, however, with the exception of glass and cement, are highly import-dependent (e.g. fertilizer, petroleum, tyres, aluminium, steel rolling and metal products) and have minimal linkages with domestic resources, either raw materials or technology. They therefore retain characteristics of simple import substitution rather than any basic industrial strategy. Table 3.2 below gives a summary of trends in manufacturing for the 1970s up to 1978 (on basis of latest industrial census data). These trends will be discussed in more detail in the following sections of this chapter. In Appendices 3:A and B some more detailed figures on the manufacturing industry development in Tanzania are given.

Table 3:2 Summary of trends in manufacturing, 1970-1978[a/]

	1970-72	1976-78	Ratio 1976-78 / 1970-72
Value added, in constant (1966) prices (TShs. m.)	536.9	874.3	1.63
Employment ('000)	51,560	84,819	1.65
Capital (TShs. m.), in constant (1966) prices	1,049.3	1,833.0	1.75
Capital - Output ratio (3:1)	1.95	2.10	1.08
Capital - Labour ratio (3:2)	20.35	21.61	1.06
Output per worker (1:2)	10,413	10,308	0.99
Labour cost as share of value added (%)	41.3	34.2	0.83
Real product wage (TShs. per worker)	4,065.3	3,579	0.88
Actual real rate of return on capital (%)	21.1	21.0	1.00

Sources: Table 3:5, 3:8, Bureau of Statistics.

a/ Firms with 10 or more employees.

3.1.9 In the two following sections an attempt is made to analyse the development of manufacturing output and employment for the period 1970 to 1980. It is possible to obtain a fairly good picture over the period, but statistics for the sector are not sufficiently comprehensive, accurate

or comparable to establish with certainty the performance. In spite of these data limitations some inferences can be drawn about the performance of the manufacturing sector.

3.2 Manufactured output and value added

3.2.1 Table 3:3 below shows the value of industrial output in current prices for consumer, intermediate and capital goods from 1970 to 1978 and in Table 3:4 industrial output is divided by branches for the period 1975-1978. Table 3:5 gives physical production figures for a number of selected industries for the year 1971-1980.

Table 3:3 Structure of gross output in manufacture, 1969-1978

(at current prices)

	Gross output (TShs million)					Share of total (%)				
	1969	1974	1976	1977	1978	1969	1974	1976	1977	1978
Consumer goods	964	2,050	2,875	3,350	4,049	63.3	52.7	51.4	50.8	58.6
Textiles and clothing	228	392	520	581	891	15.0	10.1	9.3	8.8	12.9
Intermediate goods	392	1,441	1,938	2,282	2,159	25.7	37.1	34.7	34.6	31.2
Capital goods	140	294	568	735	598	9.2	7.6	10.2	11.2	8.7
Other	27	103	203	222	103	1.8	2.7	3.7	3.4	1.5
Total	1,523	3,888	5,584	6,589	6,910	100.0	100.0	100.0	100.0	100.0

Source: Data provided by the Bureau of Statistics.

3.2.2 While the production statistics shown in the table depict positive trends in many industries at the aggregate level, the problem of capacity under-utilization has been rather common at the enterprise level. This implies that the figures understate the existing industrial potential. The various factors that account for the inadequate utilization of existing capacities will be discussed in section 3.5. Here it is worthwhile mentioning that, while the majority of factors - such as water and power interruptions, lack of experienced management and skilled operatives, transportation bottlenecks, etc. - apply variously to different enterprises, one factor has stood out as the common problem to the industrial sector as a whole. This

Table 3:4 Gross industrial output by branches, 1975-1978

(TShs. '000 at current prices)

	1975	1976	1977	1978
Food manufacturing	896,642	1,333,394	1,528,807	1,779,531
Beverage industries	235,253	267,222	329,816	399,077
Tobacco manufacturing	196,770	202,851	208,820	232,834
Textile manufacturing	691,936	829,488	974,757	1,148,264
Footwear and others	216,846	329,126	435,214	572,742
Sawmilling	78,994	83,949	115,041	137,359
Carpentry	29,142	27,571	43,448	50,225
Printing and paper products	202,214	242,803	28,826	367,783
Leather products	52,429	63,685	101,895	136,132
Rubber products	160,524	199,091	225,512	294,293
Chemical, petroleum products	656,176	646,968	743,134	928,918
Non-metallic manufacturing	191,552	109,772	124,617	155,522
Metallic maufacturing	436,749	485,235	583,709	750,650
Manufacture and repair of machinery	143,313	275,537	304,358	416,362
Automobiles assembly and repair	220,013	288,623	367,952	468,771
Miscellaneous	128,547	132,623	155,320	184,520
Total	4,537,600	5,584,306	6,588,796	8,022,984

Source: Bureau of Statistics.

is the problem of the inadequacy of foreign exchange for the importation of raw materials and essential machinery spare parts.

3.2.3 Of more interest than looking at gross output is, of course, to study manufactured value added and its real growth, on which information is given in Table 3:6. Manufactured value added has increased by approximately 28 per cent between 1970 and 1980 in constant 1966 prices and the average rate of real growth was 2.5 per cent compared to an average growth rate of 4.9 per cent of total GDP. However, for the period 1970-1978 the increase in manufactured value added was 47 per cent at an average annual growth rate of 4.8 per cent. During 1979 and 1980 the growth rates have, however, been negative.

Table 3:5 Production in selected industries, 1971-1980

Commodity	Unit of measure	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Textiles	'000 sq.meters	67,008	74,136	80,763	86,399	87,435	82,716	77,232	83,456	88,636	93,500
Beer	000 litre	53,915	64,823	62,234	63,659	64,264	69,511	75,129	85,764	82,396	64,000
Cigarettes	000,000 pieces	2,923	3,287	2,890	4,649	3,511	3,625	4,064	4,064	4,328	4,900
Cement	metric tons	179,313	236,956	314,000	296,000	266,000	244,339	246,500	272,000	289,000	326,000
Petroleum[a/]	metric tons	716,524	763,083	731,000	753,000	669,000	746,423	610,536	590,000	468,632	N.A.
Iron sheets	metric tons	21,869	20,800	20,800	26,000	25,617	25,943	27,506	30,183	29,985	21,332
Enamelware	000 pieces	5,561	4,267	4,150	1,378	2,657	2,183	2,838	2,331	2,193	N.A.
Blankets	000 sq. meters	4,077	4,533	5,476	2,686	4,309	3,676	3,514	2,706	2,549	2,181
Fishnets	metric tons	286	229	524	463	210	248	528	234	532	N.A.
Aluminium	metric tons	3,427	3,602	3,332	3,660	3,247	3,446	4,005	4,048	4,030	N.A.
Sisal ropes	metric tons	23,238	22,675	25,354	29,496	25,492	42,377	19,020	31,423	31,521	N.A.
Pyrethrum extract	metric tons	177	204	156	148	189	138	128	62	44	N.A.
Wheat flour	metric tons	50,002	47,459	51,979	34,194	35,485	72,690	80,975	87,940	85,690	N.A.
Canned meat	metric tons	8,362	4,878	1,401	4,740	2,193	1,650	580	734	685	N.A.
Batteries	000 pieces	24,012	36,552	45,049	48,001	50,301	57,870	64,664	70,914	71,436	76,700
Shoes	000 pairs	1,600	2,457	2,320	2,800	2,700	3,689	6,331	3,363	5,760	4,900
Rolled steel	metric tons	-	-	4,776	8,591	9,298	10,500	11,912	16,423	17,950	18,867
Darbrew	000 litres	-	-	7,092	6,203	9,612	10,365	13,560	15,226	18,636	13,422
Fertilizer	metric tons	-	-	32,594	58,778	59,327	42,146	36,886	44,443	45,897	54,358
Konyagi	cases	-	-	56,127	42,500	52,200	52,966	60,333	50,233	47,907	N.A.

Source: Government Paper "Economic Report", Document 1, March 1980, Bank of Tanzania, "Economic Bulletin", December 1979, and speech by the Hon. B.P. Mrambe, M.P. Minister for Industries to the Budget Session of the National Assembly for the 1981/82 period, Dar es Salaam 1981.

a/ Production by TIPER Refinery.

Table 3:6 Manufacturing value added, 1970-1980

(At constant 1966 prices)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Value added (TShs millions):											
Total manufacturing	716	784	850	888	963	914	1,123	1,175	1,295	1,227	1,141
Large- and medium-scale[a/]	485	525	600	644	703	667	820	858	945	896	833
Small-scale[b/]	259	259	250	244	260	247	303	317	350	331	308
Growths rates (%):											
Total manufacturing	6.5	9.5	8.4	4.5	8.4	-0.5	22.9	4.6	10.2	-5.2	-7.0[c/]
Large- and medium-scale	12.6	8.2	14.3	7.3	9.2	-5.1	22.9	4.6	10.1	-5.4	-7.0
Small-scale	-4.1	12.1	-3.5	-2.4	6.6	-0.5	22.7	4.6	10.4	-5.4	-7.0
Share of total											
Manufacturing in GDP (%)	9.3	9.8	10.0	10.1	10.7	9.6	11.0	10.8	11.3	10.2	9.1

Source: Calculated from data in Economic Surveys and data from Bureau of Statistics.

a/ Firms employing 10 or more workers. Constant price estimate obtained by using implict total manufacturing deflator.

b/ Residual obtained by substracting large- and medium-scale from total manufacturing. This estimate is subject to greater error than the other two.

c/ Estimates.

3.2.4 Tables 3:7 and 3:8 show the structure of value added in manufacturing for the years 1979 and 1980 at current prices. As will be elabrated on later, a decline in large/medium scale manufacturing was largely offset by increased production at the small-scale level. A detailed breakdown of value added in manufacturing (with the small-scale sector) for 1974-1978 is given in Appendix 3:A.

3.2.5 However, capacity continued to expand in large/medium scale manufacturing and therefore significant under-utilized capacity has emerged. As it was mentioned above this has largely been due to supply problems rather than to a decline in demand. There has been excess demand for many industrial goods but production has not been forthcoming for a variety of reasons. The low performance in 1979-1980 as well as the low growth gigures in 1974-75, as noted above, primarily due to foreign exchange problems. The adjustments of oil prices of 1974 and 1978 are clearly reflected in the performance of Tanzania's manufacturing sector. The situation was further aggrevated by the draught experienced in 1973/74, the declining coffee prices from 1978 and the war in Uganda in 1979. All this had the effect of making extremely scarce the foreign exchange available to buy spare parts and necessary intermediates and raw materials.

3.2.6 The decline in industrial production is a matter of greatest concern for the Tanzania Government, as shown in the targets for the short-terms strategies, declared by the Minister of Industries at his 1981/82 budget speech [1/] which are:

(a) To increase production in existing industries

(b) To reduce operating costs in industries and holding parastatals.

(c) To raise productivity in industries.

1/ The United Republic of Tanzania, Speech by the Hon. B.P. Mramba, M.P., Minister for Industries to the Budget Session of the National Assembly for the 1981/82 period, Dar es Salaam, 1981. (See also para. 2.5.1 above.)

Table 3:7 Industrial sector's GDP

(At current prices in T3hs '000)

	1979		1980	
	GDP	%	GDP	%
Food processing	313,315	9.6	296,396	9.1
1. Meat and meat processing	23,674	0.7	22,396	0.7
2. Milk	-	-	-	-
3. Grain milling	56,071	1.7	53,043	1.6
4. Bakery and sweets	52,379	1.6	49,551	1.5
5. Sugar	51,258	1.6	40,490	1.5
6. Tea	60,668	2.1	64,959	2.0
7. Other food items	61,265	1.9	57,957	1.8
Beverages	502,585	15.3	475,444	14.6
1. Beer	461,516	14.0	436,595	13.4
2. Soft drinks	41,067	1.3	38,849	1.2
Tobacco	360,858	11.0	341,372	10.5
Textiles and garments	615,240	18.7	582,017	17.8
1. Spinning, weaving and finishing	417,036	12.7	394,516	12.1
2. Twines	109,765	3.4	103,838	3.2
3. Kapok cotton	1,273	-	1,204	-
4. Garments	56,046	1.7	53,020	1.6
5. Carpets	31,120	0.9	29,439	0.9
Leather products and footwear	52,013	1.6	49,204	1.3
1. Shoes	40,900	1.2	38 775	1.2
2. Leather processing	11,025	0.3	10,429	0.3
Wood based products and lumbering	19,497	0.6	18,444	0.6
Paper products and printing	56,499	1.7	53,440	1.6
1. Paper products	4,154	0.1	3,930	0.1
2. Printing	52,345	1.6	49,518	1.5
Rubber products	35,982	1.1	34,039	1.0
Chemicals and chemical products	112,210	3.5	106,151	3.3
1. Chemicals, soap and petroleum products	97,054	3.0	91.813	2.0
2. Paints	15,156	0.5	14,338	0.5
Bricks, glass and cement	86,334	2.6	81,672	2.5
Iron (Metal)	162,558	5.0	153,780	4.7
Machinery and equipment	54,059	1.6	51,140	1.6
Motor vehicle assembling and repairs	125,670	3.9	118,884	3.6
1. Motor vehicle assembly	28,935	0.9	27.373	0.8
2. Spares	96,735	3.0	91,511	2.8
Small-scale industries	780,000	23,8	901,000	27.8
Total	3,276,818	100.0	3,262,991	100.0

Source: Statistical Bureau/National Accounts.

Table 3:8 Structure of value added in manufacturing, 1979 and 1980

(percentage distribution, based on current prices)

	1979 (%)	1980 (%)
Large and medium industries[a/]		
Consumer goods	56.2	53.3
Intermediate goods	14.5	13.7
Capital goods	5.5	5.2
Small-scale industries	23.8	27.8
Total	100.0	100.0

Source: Statistical Bureau/National Accounts.

a/ Firms with 10 or more employees.

(d) To utilize part of development grants and credit funds from friendly donor countries and international institutions for productive activities in existing industries.

(e) To promote foreign exchange earning by the industries even at the cost of starving to a certain extent domestic consumption.

(f) Cutting down expenditure of foreign exchange and exercise caution in utilizing the amount so saved.

(g) To conceive new possibilities of increasing utilization of local raw materials, inputs and machinery. Wherever possible, industries will be motivated to produce their own raw material requirements to enable them operate at satisfactory production capacity level.

3.3 Employment and productivity

3.3.1 Industrial employment[1/] almost doubled between 1970 and 1980. The average growth rate 1970 to 1980 in the industrial labour force was 6.2 per cent as compared to an average growth rate in manufactured value added of 2.5 per cent for the same period. The employment figures for the years 1970 to 1980 are shown in Table 3:9.

1/ Only establishments with 10 or more employees are included in the statistics available.

Table 3:9 Industrial employment, 1970-1980[a/]

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980 (prov/)
Industrial employment (number)	48,314	53,516	62,119	63,335	69,974	73,218	75,003	78,090	81,216	85,493	89,255
As percentage of total employment (%)	12.9	13.6	15.3	13.4	14.5	15.6	15.7	15.7	15.9	15.6	16.0
Annual growth of industrial employment (%)		10.8	16.1	2.0	10.4	4.6	2.4	4.1	4.0	3.5	4.4

Source: Bureau of Statistics: 1971-74 Industrial Production Statistics, 1975-80 Annual Economic Surveys.

a/ Employment in firms with 10 or more employees.

3.3.2 The target in the Third Five-Year Plan was for the sector to employ 130,000 people by 1981, a figure which could not been reached due to various problems. According to preliminary estimates by the Fourth Five-Year Plan preparatory committee 140,000 people will be employed in manufacturing by 1985.

3.3.3 Table 3:10 depicts the structure of employment in manufacturing for the years 1974-1978. The figures indicate only a very slight development in terms of structural change. Further information is given in Appendix 3:C.

Table 3:10 Structure of employment in manufacturing, 1974-1978

	1974	1976	1977	1978
Consumer goods	68.6	64.8	63.7	69.5
Food and food products	22.8	25.5	24.9	26.2
Non-food products	45.8	39.3	38.8	43.2
Textile and clothing	24.0	17.5	16.5	25.5
Intermediate goods	25.1	25.5	27.2	25.1
Basic chemicals, non-edible oils, petroleum products	1.9	2.0	1.4	3.2
Capital goods	4.3	4.5	4.6	4.3
Other manufacturing	2.4	6.3	4.9	1.1
Total manufacturing	100.0	100.0	100.0	100.0

Source: Survey of Industrial Production, 1974 and data provided by the Bureau of Statistics.

3.3.4 Figures in Table 3:11 indicate that employment and manufactured value added in firms employing 10 or more workers grew at more or less the same rate in the 1970s up to 1978 and consequently labour productivity up to then remained fairly constant.[1/] However, the figures of 1979 and 1980 showing a growth of 3.5 and 4.4 per cent respectively, in employment in manufacturing (in respect of firms with 10 or more employees) over the previous year, and a decrease by 5.4 and 7.0 per cent respectively in MVA during the same periods led to a reduction of labour productivity. The value added per worker (in constant 1966 prices) which had been TShs 11,636 in 1978, was TShs 9,333 (est.) in 1980. Further information is given in Appendix 3:B.

3.3.5 The figures in the table further suggest that the Tanzanian industry is overmanned, a matter to which particular attention has been given recently.[2/]

3.3.6 A number of other factors have also contributed to the productivity problem in Tanzania:

- Under-utilized capacity, which is discussed below in section 3:5. Temporary stoppages due to an interruption in materials or utility supplies reduce annual output, but are less likely to be accompanied by a corresponding fall in employment; output per worker on an annual basis therefore falls.

- Poor project planning and prolonged learning or running-in periods for new industries have lowered aggregate labour productivity.

- In very few places in the parastatal companies is there a strong incentive to improve factor productivity. Wage payments are generally not linked to work efforts. Good work is not specially rewarded while disincentives for poor performance are weak.

1/ See further J. Jedruszek: Development in employment and productivity in Tanzania 1967-1977, ERB Paper 78.5 and 78.6, Dar es Salaam, 1978, see e.g. Table VII, p.82.

2/ E.g. the Prime Minister Hon. Ndugu Cleopa Msuya (formerly Minister of Industries), in addressing authorities at the Mwanza Textile Mill on 6 December 1980, cautioned industries throughout the country against overstaffing. He noted that many industries had already made the mistake of employing more people than their requirements and that this adversely affected efficiency at work.

Table 3:11 Employment and productivity in manufacturing, 1970-1980

Year	Value added[a/] in constant (1966) prices (TShs. million)	Employment[a/] (number)	Value added per worker, in constant (1966)
1970	485	48,314	10,038
1971	525	53,516	9,810
1972	600	62,118	9,659
1973	644	63,355	10,160
1974	703	69,974	10,047
1975	667	73,218	9,110
1976	820	75,003	10,933
1977	858	78,090	10,988
1978	945	81,216	11,636
1979	896	85,495	10,480
1980	833 (prov.)	89,255 (prov.)	9,333

Source: Tables 3:5 and 3:9.

a/ Firms with 10 or more employees.

3.3.7 From the financial year 1980/81, however, the problems of labour productivity in the public enterprises have been acknoweldged, and in a new income policy, material incentives have been accepted and payment by results schemes recommended. These are still at their infancy stage but public industrial enterprises have been asked to devise appropriate incentive schemes for their areas and submit them for government ratification.

3.4 Export of manufactures

3.4.1 The stagnation of exports during the last few years is one of Tanzania's most serious economic problems, since it has greatly affected the availability of foreign exchange to buy necessary imports of raw materials and intermediate goods. Manufactured export performance has, however, shown a most encouraging development during the last two years. The proportion of manufactured exports as a percentage of total exports (excluding petroleum and petroleum products) declined from 22 per cent in 1971 to only 13 per cent in 1977 and 14 per cent in 1978. Thereafter it has steeply increased and constituted in 1980 33 per cent of all exports (see Table 3:12).

Table 3:12 Contribution of manufactured exports to total exports, 1970-1980

(TShs. '000 at current prices)

Industry	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Food	99,826	106,821	110,787	120,199	139,160	160,907	235,339	203,219	167,638	218,136	278,664
Beverages and cigarets	175	267	175	824	2,618	6,094	4,447	4,628	11,603	17,352	20,771
Pyrethrum extracts	10,983	18,359	21,664	16,502	11,685	19,804	19,984	17,750	16,828	9,694	13,279
Petroleum and petroleum products	111,499	143,345	215,493	87,639	132,360	139,298	172,955	144,870	82,471	136,483	199,549
Animal and seed oil	3,873	3,661	2,630	4,326	4,526	3,018	7,489	5,946	5,709	11,177	9,397
Chemicals	16,535	15,832	21,522	33,696	58,076	33,891	48,377	51,118	28,588	47,863	31,937
Products manufactured from processed materials	69,709	115,612	97,686	150,293	222,891	140,611	188,228	153,924	172,928	316,429	525,400
Machinery	11,824	15,554	10,404	11,712	13,765	13,966	23,351	11,112	11,605	22,609	29,631
Other manufactured products	13,387	16,538	10,564	19,188	18,801	19,338	25,382	15,759	10,605	93,314	167,985
Grand total											
(a) Total manufactured exports	337,811	435,989	490,925	437,479	602,043	536,927	725,554	598,326	507,931	873,048	1,269,553
(b) Total exports	1,851,851	1,988,820	2,276,655	2,586,804	2,967,840	2,763,840	4,092,108	4,518,588	3,553,906	3,922,000	3,833,878
Percentage change for manufactured exports		+29.90	-13.80	-10.88	+37.61	-10.80	+35.10	-17.50	-15.10	+71.80	+45.4
Percentage of manufactured exports to total exports	18.24	21.92	21.56	16.91	20.15	19.4	17.7	13.2	14.3	22.3	33.1

Source: Annual Trade Reports and speech by the Minister of Industries at 1981/82 budget session of the National Assembly.

Note: Total manufactured exports include re-exports.

3.4.2 A breakdown at product level is given in respect of the manufactured exports in 1980 in Table 3:13. Further information, regarding the period 1970-79 is given in Appendix 3:D.

3.4.3 Although in full recognition of the emphasis which the Basic Industry Strategy (BIS) gives to production for the domestic market, it is clear that the performance of manufactured exports will be an important issue for the next several years. The size of the trade gap, the outlook for some traditional agriculture exports, the decline of the diamond exports, and the slow gestation period of many import-substitution projects all point to the conclusion that manufactured exports must increase in the near future if Tanzania is to achieve substantial economic growth in the medium-term. Unless manufactured exports can be increased, there is little prospect of generating enough foreign exchange, growth, and savings to implement the BIS in the longer term. Indeed, in the 1981/82 budget speech by the Hon. Mr. B.P. Mramba, Minister for Industries, one of the short-term strategies freefully put forward was "to promote foreign exchange earning by our industries even at the cost of starving to a certain extent domestic consumption".[1/]

3.4.4 Of crucial importance for a sustaining of the growth of manufactured exports which has been achieved in the last year, will be the successful tackling of problems such as:

(a) Most major industrial investments have been for import substitution production.

(b) Low labour productivity and relatively high wages have made a number of products uncompetitive.

(c) Low capacity utilization.

(d) Agricultural supply problems have reduced the exports of several processed products.

(e) An overvalued exchange rate has put exports at a competitive disadvantage.

(f) The structure of protection and pricing policy have discriminated against exports. Exports are discouraged not only by high costs for inputs, especially locally manufactured inputs, but also by the relatively favourable price for output sold in the domestic market.

1/ United Republic of Tanzania. Speech by the Hon. B.P. Mramba, M.P., Minister for Industries to the Budget Session of the National Assembly for the 1981/82 period.

Table 3:13 Exports of manufactured goods, 1980

ISIC	Type of product	Value (TShs. '000)
01 013 801	Canned beef	2,159.9
02 023 024	Butter and ghee	746.2
04 048 423	Flours and others	4,409.8
053	Fruit preserved and fruit preparations (jams and juices)	695.6
055	Vegetables, roots and tubes preserved n.e.s.	356.4
06	Sugar and sugar preparations	51,182.8
07 073	Chocolate and other food preparations	21,720.5
08	Feeding stuff	60,438.5
09	Other food preparations	13,032.5
0 Sub-total	Food preparations	278,663.6
1. 11	Beverages, soft drinks spirits	2.0
112	Tobacco manufacturing e.g. cigarettes	20,718.6
1 Sub-total	Beverages and tobacco	20,720.6
2 292 915	Pyrethrum extracts	13,279.0
3 33	Petroleum and petroleum products	199,549.0
4 43	Animal and vegetable oils and fats processed	9,386.8
5 51	Chemical elements and compounds	4,011.5
5 53	Dyeing, tanning extracts, pigments, paints etc	24,554.2
54	Medical and pharmaceutical products	4.3
55	Essential oils and perfume materials	169.6
57	Explosives and pynotechnic products	0.8
58	Plastic materials, regenerated cellulose Chemical materials	0.8
59	Chemical materials	1,140.8
509	Insecticides	1,892.7
5 Sub-total	Chemicals	254,152.0
6 61	Leather, leather manufacturing and dressed from skins	13.3
629	Rubber tyres, tubes for vehicles and craft	4,099.4
63	Wood and cork manufacture (excluding furniture)	2,285.7
64	Paper and paper board	782.9
65	Textile yarn, fabrics made up articles and related products	249,912.7
655 613	Sisal fabrics	226,949.6
661 202	Cement for building purposes	4,354.6
665	Glass ware	6,346.4
67	Iron and steel	7,926.2
68	Non-ferrous metals	3.5
684	Aluminium	12,831.1
69	Manufacture of metals n.e.s.	9,894.2
6 Sub-total	Manufactured intermediate goods	525,399.6
7 71	Machinery, other than electric	287.9
72	Electric machinery, apparatus and appliances	2,095.0
724 722	Radio broadcast receivers/batteries and cells	18,706.4
73	Transport equipment	1,541.2
7 Sub-total	Manufacture of machinery	22,630.5
8 81	Sanitary plumbing, heating, lighting, fixtures, and fittings	661.1
82	Furniture	2,976.2
83	Travel goods, handbags and similar articles	63.8
84	Clothing	114,517.8
85	Footwear	1,946.7
86	Professional, scientific and controlling instruments	5.4
89	Miscellaneous manufacture articles n.e.s.	47,814.0
8 Sub-total	Miscellaneous manufacture	167,985.0
	Grand total (1980)	1,269.553.0
	Grand total (1979)	873,048

Source: Customs Department.

Note. Re-exports are included.

(g) Increased domestic consumption has reduced the exportable surplus of a number of goods.

(h) A number of administrative restrictions and cumbersome bureaucratic procedures have hampered exports.

3.5 Capacity utilization

3.5.1 A persistent problem confronting Tanzanian industrialization has been that of excess capacity, mainly associated with large-scale production and plants dependent on imports and/or exports. Excess capacity has occurred particularly in agro-based industries such as meat and fruit canning, sisal processing, saw milling and vegetable oil production, but also in industries dependent on imports such as steel products and fertilizer. These latter industries have suffered from excess capacity particularly in the last few years. Cement production has also suffered considerable excess capacity. The principal reasons have been inadequate infrastructure and materials (for collection and transport), delay in receiving imports, market constraints and, most recently, severe shortage of foreign exchange to buy imported spare parts and raw materials.[1/] However, it should not be overlooked that Tanzanian manufacturing also suffers from severe lack of qualified people in the management of factories and from overstaffing (see para. 3.3.5), particularly the public enterprises.

3.5.2 The highly restrictive import licencing policy with regard to industrial raw materials and intermediates during the last couple of years has resulted in the sector receiving totally inadequate allocations of foreign exchange. The prospects for 1981 are even worse. The table below (Table 3:14) indicates actual and projected figures of foreign exchange allocations as percentage of requests.

3.5.3 The result of the inadequate foreign exchange allocations has been a sharp fall in already low capacity utilization in 1979 and 1980 and has made it impossible to achieve the targets set in the Third Five-Year Development Plan which expired at the end of June 1981.

1/ In 1976 Dr. Wangwe of the University of Dar es Salaam studied the capacity utilization of a sample of 53 manufacturing enterprises. This study revealed a number of other factors affecting capacity utilization in Tanzania, although the major ones were the ones discussed above. The findings of Dr. Wangwe's study are presented in Appendix 3:E.

Table 3:14 Foreign exchange allocation to manufacturing, 1977-1981

(T.Shs. million at current prices)

Year	Industrial raw material			Machinery spares		
	Requested	Allocated	Share of allocation to requests (%)	Requested	Allocated	Share of allocation to requests (%)
1977	2,649.6	1,574.5	59	362.1	106.2	29
1978	4,158.1	2,138.1	51	532.8	154.8	36
1979	6,092.0	1,339.3	22	481.4	55.7	12
1980[a/]	7,855.0	1,960.0	25	690.0	55.0	8
1981[b/]	10,000.0	600.0	6	900.0	45.0	5

Source: Government Paper "Economic Report", Document 1, March 1980, Bank of Tanzania, estimates and projections.

a/ Estimates.

b/ Projects based on allocations for the first six months.

3.5.4 Indeed, average capacity utilization in both the parastatal sector and the private sector has fallen steadily during the Third Five-Year Plan. According to the Ministry of Planning, in branches representing about half of the industrial production in 1978 and 1979, and excluding beer and tobacco processing, the average capacity utilization was below 60 per cent. The indications are that these rates were even lower in 1980 and 1981. As it has not been possible for this study to examine the capacity utilization for the entire manufacturing sector, data was collected from the public sector manufacturing which is more readily available. Table 3:15 depicts the figures on installed and utilized capacity collected for the manufacturing branches as divided in the Basic Industry Strategy. Notwithstanding all the other problems the manufacturing sector in Tanzania is facing, the seriousness of the foreign exchange problem is clearly reflected in these figures.

3.5.5 Among major industries steel products have been dependent on imported billets of a non-standard specification, and the 22,000 ton steel rolling mill has operated at below 50 per cent capacity because of both import supply bottlenecks and domestic market constraints. Fertilizer, cement and textile plants have operated at well below capacity at various times because of the above-mentioned problems. Consequently, the manufacturing

Table 3:15 Installed and utilized capacity in parastatal manufacturing enterprises, 1975-1980 and target for 1981

Products	Unit	1975	1980	1981 target	Utilized capacity %	
					1979	1980
Sugar processing	Tonnes	115,000	176,000	300,000	58.2[a/]	58.5[a/]
Cashew processing	Tonnes	25,000	41,000	93,000	85[a/]	53[a/]
Other food processing	Tonnes	n.a.	n.a.	n.a.	45-70[a/]	30-65[a/]
Beer	Mill. cases	7.51	7,58	11	89.73	76.22
Tobacco	Cig.nos. bill.	3.6	7.2	7.2	56.0	69.5
Sisal processing	Bags ('000)	2,887	5,319	6,524	n.a.	n.a.
Textiles	Mill m^2	n.a.	148.6	152	55.6	49.4
Clothing	Pieces	n.a.	1,500	n.a.	n.a.	n.a.
Leather	Mill. sq.ft.	6.5	28.8	32	53	49
Footwear	Mill. pairs	n.a.	4,050	n.a.	66	62
Wood products	Cu.m.	n.a.	105,000	n.a.	38	38
Paper and products	Tonnes	12,000	n.a.	65,000	n.a.	n.a.
Fertilizer	Tonnes	105,000	150,000	150,000	36	34
Pyrethrum extract	Tonnes	7,000	n.a.	10,500	18	27
Petroleum refining	Tonnes	750,000	750,000	1,800,000	82.3	82.1
Paints	'000 litres	2,900	3,209	2,900	n.a.	n.a.
Pharmaceuticals	Mill. doses	n.a.	5.3	5.3	n.a.	n.a.
Soap	Tonnes	21,000	28,000	30,000	n.a.	n.a.
Tyres	Nos.	250,000	350,000	550,000	52	53
Plastic products	Tonnes	n.a.	7,000	7,000	36	22
Glass	Tonnes					
Cement	Tonnes	400	600	1,350	50	48
Aluminium	Tonnes	n.a.	97.6	n.a.	51.0	39.7
Metal fabrication	TShs. mill.	375	n.a.	545	23-50	15-49
Motor vehicles	Nos.	3,000	3,500	3,000	33	25

Source: Data from individual companies.

a/ Figures are for financial year July-June.

public enterprises failed to achieve their targets both to increase their share of the domestically manufactured value added and to generate surplus for further re-investments.

3.6 Industrial financing

3.6.1 Total fixed investments in the manufacturing sector more than doubled from 1970 to 1979, from TShs. 281 million to TShs. 595 million in constant (1966) prices. The figures for the ten-year period are shown in Table 3:16. The manufacturing sector's share of total investments also increased over the period, from 15.4 per cent in 1970 to 22.6 per cent in 1979. This can primarily be attributed to the rapid increase in parastatal manufacturing enterprises following the Arusha Declaration in 1967.

3.6.2 The figures for the share of manufacturing investments may not necessarily be interpreted as a positive development, i.e. the increase from approximately 40 per cent in 1970 to 50 per cent in 1979. Rather, these relatively high figures do not seem to have generated correspondingly higher increases in value added as a comparison of Tables 3:6 and 3:16 reveals. While investment in manufacturing increased by around 112 per cent over this period value added increased only by 28 per cent. The high figure for 1979 then is merely a reflection of the increasing under-utilization of capacity, which was discussed in the previous section.

3.6.3 A major portion of industrial investments is financed from local institutions. In Chapter IV a review is given of their activities. Here might be noted that all banks in Tanzania are wholly owned by the public except for one, the Tanzania Development Finance Company Ltd (TDFL) in which the Government through the Tanzania Investment Bank (TIB) has a 30 per cent share, the remaining share being owned by foreign organizations. TIB, TDFL, Tanzania Housing Bank (THB) and Tanzania Rural Development Bank (TRDB) give loans for fixed capital investments and the first two can also participate in projects via equity holdings. The National Bank of Commerce (NBC) and the People's Bank of Zanzibar give loans for working capital on short-terms. However, NBC does have a subsidiary, the Karadha Company which give short-term loans also for the purchase of fixed assets like trucks, tractors and small milling machines. Table 3:17 gives the figures for these banks lending to manufacturing from 1970. It should be observed that only the commercial banks and TDFL were in existance in 1970, the other banks

Table 3:16 Manufacturing investment, 1970-1979[a/]

(at constant 1966 prices)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Investment in manufacturing (TShs million)	281	268	185	204	277	301	454	469	492	595
Manufacturing investment as percentage of total investment (%)	15.4	12.3	10.6	11.2	13.4	15.9	21.5	21.7	22.0	22.6
Manufacturing investment as percentage of manufacturing GDP (%)	39.2	34.2	21.8	23.0	28.8	32.9	40.4	39.9	38.0	48.5

Source: National Accounts of Tanzania 1966-1977 and published estimates by Bureau of Statistics. Implicit investment price deflator derived from current and constant price estimates of total investment prices in Economic Survey 1979/80.

a/ All investment figures exclude change in inventories and refer to fixed capital formation only.

Table 3:17 Manufacturing sector financing by local financial institutions and commercial banks, 1970-1980

(TShs million at current prices)

	1970	1971	1972	1973	19 4	1975	1976	1977	1978	1979	1980
1. Commercial banks[a/]	214.0	223.0	255.5	360.4	627.8	458	543	562	635	710	655
2. Financial institutions					44.25	91.18	116.98	143.56	310.15	370.81	380.58
TDFL	n.a.	n.a.	n.a.	n.a.	13.1	27.83	26.81	34.50	53.71	88.09	47.73
TIB[b/]	-	3.9	5.65	21.07	25.51	53.10	74.42	100.80	231.81	261.57	269.70
TRDB[b/]	-	n.a.	0.25	0.11	0.84	6.65	0.85	0.66	3.94	14.05	35.25
THB	-	-	-	n.a.	4.8	3.6	14.9	7.6	21.4	7.10	27.90
3. Total lending					79.1	549.2	660.0	705.6	945.15	1,080.8	1,035.58
4. Total fixed capital manufacturing investment	319	319	258	308	473	636	1,024	866	1,019	1,259	n.a.
5. Share of (2) in (4)					9.4	14.3	11.4	16.6	30.4	29.5	n.a.

Source: Individual Annual Reports, Bank of Tanzania "Economic Bulletins", Central Bureau of Statistics and data provided by the financial institutions.

a/ NBC and People's Bank of Zanzibar for 1970-74 and NBC only for 1975-1980. Includes also mining.

b/ Figures represent financial year July-June and have been recorded here for the calendar year of the second half of the financial year.

commenced operations in the subsequent years as indicated in the table. The sub-totals give the lending each year for fixed assets and working capital, respectively.

3.6.4 Tanzania receives development assistance from a number of bilateral and multilateral aid/donor organizations. Table 3:18 below shows major donor countries and their contributions for the financial year 1980/81 for the financing of industrial development. These countries' assistance to other sectors has also been included for comparison. The data has been collected from a project by project list compiled in the Ministry of Industries.

Table 3:18 Foreign financing to manufacturing by major donor countries for the financial year 1980/81

(TShs. '000 at current prices)

Donor country	Assistance to manufacturing	Assistance to other sectors	Total assistance
Sweden	108,000	253,198	461,298
Germany, Fed. Rep. of	87,000	184,690	271,690
Netherlands	52,138	209,579	261,717
Norway	5,000	172,405	177,405
Denmark	87,000	102,374	159,174
Finland	51,352	n.a.	n.a.
Total	360,380	922,246	1,331,284

Source: Ministry of Industries.

3.6.5 Detailed information as to the financing of the parastatal manufacturing enterprises, for the period 1970 to 1978 is given in Appendix 3:F where a breakdown of source and applications of funds is shown. The fixed-capital formation for all parastatal organizations involved in the manufacturing sector increased from TShs. 203 million in 1970 to TShs. 431 million in 1977 and fell again to TShs. 171 million in 1978 in current prices. It was estimated at TShs. 184 million in 1979. Machinery and equipment took the largest share of total investment during the period. Other investments were for land and land improvements, civil works and transport equipment. There were four major sources of finance for the above investment; internal (project) sources, from government, borrowing from local financial institutions and external sources. Internal sources were

in the form of retained profits and depreciation. Government finance was in the form of loans and grants.

3.7 Distribution of industrial establishments by size and region

3.7.1 The last industrial census in Tanzania was made in 1974. Table 3:19 shows the then total number of establishments and total employment by region and size. Dar es Salaam alone had 180 our of 499 establishments and provided 33,983 jobs out of 69,974. Other important areas are the northern coastal town of Tanga, the southern area of Lake Victonia (Mwanza), the Arusha/ Moshi (Kilimanjaro) regions and the Morogoro region. See also Appendix 3:G.

Table 3:19 Number of establishments in manufacturing industry by size and region, 1974

Region	Establishments engaging (number of persons)					Total number of establish-ments	Total employ-ment
	10-19	20-49	50-99	100-499	500+		
Arusha	9	10	8	13	2	42	4,590
Coast	-	-	2	2	-	4	400
Dar es Salaam	30	50	45	43	12	180	33,983
Dodoma	1	-	1	-	-	2	74
Iringa	3	1	2	7	-	13	1,648
Kigoma	-	1	-	-	-	1	34
Kilimanjaro	9	12	5	9	2	37	4,362
Lindi	3	4	-	-	-	7	171
Mara	3	-	3	3	-	9	755
Mbeya	-	5	1	1	-	7	456
Morogoro	11	13	8	1	2	35	4,360
Mtwara	1	2	-	-	1	4	669
Mwanza	10	8	13	14	1	46	6,086
Rukwa	-	-	-	-	-	-	-
Ruvuma	-	1	-	-	1	2	787
Shinyanga	1	2	1	8	-	12	1,380
Singida	2	-	-	-	-	2	20
Tabora	3	8	2	3	-	16	1,053
Tanga	18	21	10	17	2	68	7,739
Kagera	5	1	1	5	-	12	1,427
All regions	109	139	102	126	23	499	69,974
Percentage	21.8	27.9	20.0	25.3	4.6	100.0	

Source: Survey of Industrial Production, 1974.

3.8 Public sector industrial enterprises

3.8.1 The role and rationale of public industrial enterprises in Tanzania can well be explained from a historical perspective. Prior to independence the colonial government owned 50 per cent of Williamson Diamonds, 51 per cent of Tanganyika Packers - a canning factor in Dar es Salaam -, 81 per cent of Nyanza Salt Mines and shares in a number of public services enterprises. At the time of independence, the country's level of industrial development was still very small. The industrial sector contributed only 3.4 per cent of total GDP (1960-62). Most of the industrial units were privately owned. The newly independent Government adopted an industrial strategy based on encouraging private investors particularly the African enterpreneur to produce goods for the home market.

3.8.2 The First Five-Year Plan (1964-1969) proposed a more ambitious programme of industrial development without changing the inherited strategy. It was envisaged during that period that 75 per cent of total industrial investment was to be financed through private sector. The role of public investment was that of filling gaps left by private investment and to concentrate in expansion of socio-economic infrastructure such as building roads, railways, schools, hospitals, etc. However, the amount of private capital envisaged in the plan was not forthcoming. Therefore the government had to strengthen the public sector as an alternative major tool of industrial investment in the country. The National Development Corporation (NDC) which was started in 1965 was directed to concentrate more on direct public productive investment.

3.8.3 In 1967 came the Arusha Declaration which proclaimed two main principles - socialism and self-reliance. The policy of socialism meant among other things placing the ownership of the major means of production and exchange in the hands of the people through the Government. The Arusha Declaration made clear areas where public ownership and control was required and vice versa. Following the Arusha Declaration a number of enterprises were either nationalized (with fair compensations) or the Government acquired

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1/ Most of the information in this section comes from Dr. Wangwe, et al: "Public Industrial Enterprises in Tanzania" University of Dar es Salaam, 1980.

majority shares. Apart from nationalization, the Government established industries which were wholly owned by the public.

3.8.4 During the Second Five-Year Plan (1969-1974), although emphasis on industrial development was now placed on public investment, it was still recognized that the private industrial sector had a mutually beneficial role to play. Foreign private minority investors were regarded as of particular value in facilitating the transfer of technology and training of Tanzanian personnel. The allocation of projects by ownership pattern was planned as shown in Table 3:20.

Table 3:20 Ownership category allocation on new projects, 1969-74

Ownership category	No. of projects (%)	Investment	Output	Employment (%)
Parastatal	43	84	79	77
Workers and co-operative	21	4	5	7
Private	36	12	16	16
	100	100	100	100

Source: Government of Tanzania: Second Five-Year Plan for Economic and Social Development 1969-74, Dar es Salaam, 1969, Vol.1.

3.8.5 The Third Five-Year Development Plan distinguished three levels of organizational structures in industry i.e.'National Industries' consisting of medium and large industries;'Regional/District Industries'- medium- and small-size industries - and 'Village Industries'. This structure is now modified in so far that now there are only two types of industries - National and Regional/District, including village industries.

3.8.6 Despite the Government's efforts to substantially increase the public and co-operative shares of manufacturing in Tanzania, the major share of production is still in the hands of private firms. In Table 3:21 industrial parastatals' contribution to GDP is analyzed. The parastatals' contribution to GDP continued to grow for sometime also after the share of the whole industrial sector started to decline in 1974, due to a relative increase

in parastatal production capacity. However, this capacity has been utilized at decreasing rates (see section 3:5) which has, since 1977 resulted not only in a lower share of GDP but also a lower share of total industrial production.

Table 3:21 Industrial parastatals contribution to GDP (MVA), 1966-1979

(at constant 1966 prices)

	1966	1971	1972	1973	1974	1975	1976	1977	1978	1979
Total industrial sector (MVA), shs. million	525	784	850	888	963	914	1,123	1,175	1,295	1,227
Percentage share of total GDP	8.1	9.8	10.0	10.1	10.0	9.4	9.5	9.4	9.2	8.3
Industrial parastatals' MVA, shs. million	42	220	264	311	333	354	358	393	348	304
Percentage of total GDP by parastatals' MVA	0.6	2.6	3.1	3.5	3.7	3.7	3.6	3.7	3.1	2.6
Ratio of industrial parastatals' MVA to total industry. MVA, %	8	28	31	35	35	39	32	34	27	25

Sources: Analysis of Accounts of Parastatals 1966-77 and Economic Surveys 1977-80, Ministry of Planning, - Table A:24 of Appendix 1.

3.8.7 The industrial sector employed in 1979 15.6 per cent of all employees in the country (up from 10 per cent in 1967). Between 1967 and 1979, as Table 3:22 depicts, the industrial sector generated 51,000 new jobs which is about 31 per cent of total new jobs created (165,000) during this period. Out of the total employment generated within the industrial sector during the same period 81 per cent occurred in the public enterprises raising its share in total industrial employment from 15.5 to 54.9 per cent in 1979.

3.8.8 The extent of public industrial enterprises in industrial production varies from one industrial activity to another. Among the metal based industries, the public industrial enterprises are most predominant in the iron and steel industry where 98.8 per cent of this industry is in the public sector. While the public sector industrial enterprises dominate the manufacture of metal construction material (except nails), metal containers, farm implements

Table 3:22 Employment in industrial parastatals, 1967-79

Year	Industrial sector employment (no. of persons)	Industrial parastatals employment (no. of persons)	Percentage industrial parastatal employment to total industrial employment (%)
1967	34,157	5,302	15.5
1968	42,387	8,792	20.7
1969	43,396	12,350	28.5
1970	48,314	15,454	31.9
1971	53,516	24,836	46.4
1972	62,118	25,387	40.9
1973	63,355	29,595	46.7
1974	69,974	34,778	49.7
1975	73,218	35,278	48.2
1976	75,003	35,300	47.1
1977	78,090	43,054	56.1
1978	81,216	43,541	53.6
1979	85,493	46,905	54.9

Sources: Economic Survey, Analysis of Parastatal Accounts, and Hon. Minister of Industries' speech to the Parliament on Estimates 1979/80. - Table 3:9.

and spares and components, the private sector enterprises have their stronghold in the manufacture of household metal products, assembly of electrical equipment and apparatus and in the assembly of motor vehicle bodies.

3.8.9 In the group of chemical industries the public industrial enterprises dominate the manufacture of tyres, fertilizers and pharmaceuticals. The private sector enterprises have control over the manufacture of plastics (60 per cent), mosquito coils, pesticides, paints, soap and cosmetics, and glass. In the paper-based industry the public sector commands 74 per cent of the output. Cement production is a wholly public sector industrial activity.

3.8.10 In the textile industry there are in all about 100 establishments of which only five are public sector enterprises. However, in view of the fact that the public sector enterprises are large the textile industry is a

predominantly public sector activity. The public industrial enterprises command 83 per cent of total output.

3.8.11 The leather industrial output is dominated by the public sector enterprises. In shoe production alone for instance, the only public sector enterprise controls about 60 per cent of the output while in leather tanning virtually all output originates in the public sector.

3.8.12 From the above it is evident that the relative size of the public sector in terms of production capacity has been increasing over time in the manufacturing industry - its share of manufacturing value added was also increasing over time up to 1978 - and its share has become dominant in the industries which are central in effecting structural change. The dominance of public sector industries in chemicals, basic metals, cement and paper and to some extent also in textiles, leather, publishing and printing would be expected to equip it with the foundation to bring about the envisaged change in the structure of manufacturing. In particular, the public sector expansions which are under way indicates an increasing role of the public industrial enterprises in the basic industries.

3.8.13 The recent expansion of the steel rolling mills and the billet casting unit suggest an increasing role of public industrial enterprises in the iron and steel industry. The projects which are underway in the manufacture of transport equipment will certainly shift the control of this branch from the private to the public sector. It should be remembered, however, that for some time this will almost entirely consist of assembly work and therefore the body making private firms will maintain a higher level of value added. The new public glass producing plants which are now being implemented will definitely make the public dominant in that branch. The planned fertilizer plant based on the natural gas deposits in Songo-Songo is another example. There are also new areas like the manufacture of machine tools, transformers and switch gears and electrical wires in which the pioneering industrial projects are in the public sector. The importance of chemicals has been underlined by establishing the National Chemical Industries Corporation. The chemical industrial projects which are being considered are dominantly in the public sector.

3.8.14 Thus, the nature of industries in which the public manufacturing enterprises are dominant indicate that the public sector could play a

considerable role in effecting structural change. However, it was pointed out in section 3.1 that, with the exception of glass and cement, a lot of these new public industries are highly import-dependent, like aluminium, steel rolling and metal products and have minimal linkages with domestic resources presently available. Considering the serious difficulties Tanzania now faces in earning necessary foreign exchange one must be extremely cautious when making any judgement on the possible developments for the next few years.

3.9 Private sector industrial enterprises

3.9.1 There are clear indications that for most new investments in the industrial sector parastatals will be the dominant organizational mode. However, the private sector remains important and will continue to play an important role during the foreseeable future. It still produces 60-70 per cent of manufacturing GDP even after nearly 15 years of effort to expand the parastatal manufacturing.

3.9.2 The Government does not have the resources - neither financial nor technical, managerial, and business skills - to extend its control over the full range of manufacturing activity in the near future. The corollary of this is that some of these resources (both financial and human) which do exist in the private sector could not be tapped for use by the public sector; some of the private savings which currently go into self-financed investment would be lost as would some of the skills. These considerations are particularly relevant to the small-scale industrial sector, which includes the bulk of the vital engineering industry. It might, however, be assumed that co-operatives, District Development Corporations, and even parastatals will extend their activities into small-scale operations or sectors which are presently mainly in the private sector.

3.9.3 The most important requirements for making better use of the private sector is to define its role more precisely. In some industries (such as sawmilling) uncertainty about their future role and of the investment plans of parastatals has caused some private firms to let their capital equipment deteriorate. The Arusha Declaration attempted to define the role of the private sector, but guidelines set out in that document need to be updated. Some of the industries which were to be left open to the private sector have since been nationalized, while other industries reserved for

the public sector should perhaps be reconsidered or their definition clarified.

3.9.4 In 1974, the year of the latest published industrial census, out of 524 manufacturing establishments with ten or more workers, 477 were private and 47 parastatal companies, of which the latter were substantially bigger than average.

3.9.5 In spite of the important role played by private industries in Tanzania, their potential contributions were not estimated during the preparation of the three five year development plans. As a result it is now difficult for the Government to review the performances of this sector and then, of course, even more difficult to give planning guidelines on private sector investments. In order to remedy the situation the Ministry of Planning and Economic Affairs has just recently established a new Department of Private Sector Monitoring. It is presently engaged in setting up a register of the private industries. In the following paragraphs information collected so far by this Department will be discussed and supplemented where necessary with data collected by us.

3.9.6 Regarding exports by private industries it has not been possible to collect data for all private firms and/or all commodities. However, Table 3.23 shows the value of exports by major exporting private manufacturers. It is not known how great a share these companies have of the total exports by private manufacturing enterprises. A qualified guess would be approximately 50 per cent.

3.9.7 An attempt is made (Table 3:24) to compare private firms' exports with total exports of manufacturers. The data in Table 3:23 above is given for the financial years, while data in the Annual Reports follows the calendar year.

3.9.8 Table 3:25 depicts the amounts of requests and allocations of foreign exchange to the private firms for 1980. The amount for the whole manufacturing sector is also given. Of the total foreign exchange allocation to manufacturing 41 per cent went to private industries.

Table 3:23 Value of exports by selected private industries, 1975-1979

(TShs million at current prices)

Name of firms	1975/76	1976/77	1977/78	1978/79	1979 July-Dec.
Amboni Sisal Ltd.	n.a.	6.8	13.2	15.1	9.6
Dar Ocean Products	n.a.	n.a.	1.3	n.a.	n.a.
Fida Hussein and Co.	n.a.	n.a.	n.a.	n.a.	1.7
Matshushita Electric Co. E.A. Ltd.	16.9	14.2	11.2	15.3	11.8
Sisal Kamba Spinning	23.6	15.4	12.3	17.1	15.9
Tanganyika Industries Corp.	17.1	25.8	26	28.7	15.9
Tanganyika Wattle Co. Ltd.	14.6	28.8	n.a.	36.7	12.8
Henkel Chemicals (EA) Ltd.	n.a.	7.8	4.6	9.7	3.6
Phillips Co. Ltd.	5.6	5.8	n.a.	0.2	3.6
Usambara Spinning Corporation	13.0	16.2	23.3	15.0	10.0
Yuasa Batteries	n.a.	n.a.	n.a.	n.a.	n.a.
Total	90.8	120.7	92.2	145.9	84.0

Source: Ministry of Planning and Economic Affairs.

Table 3:24 Private and total exports of manufactures, 1976-79

(TShs. million at current prices)

Year	1976	1977	1978	1979
a) Private major exporters	105.8	106.5	119.0	157.0
b) Estimated total private sector manufactured exports	210.0	215.0	240.0	315.0
c) Total manufactured exports	725.6	598.3	507.9	873.1
a:c (%)	15	18	23	18
b:c (%)	29	36	47	36

Source: Tables 3:13 and 3:23.

Table 3:25 Foreign exchange allocation to private manufacturing, 1980

(TShs. million at current prices)

Type of importing private industry	Number of requesting companies	Requested amount	Requested amount	Total allocation by private industries
Industries manufacturing essential goods	151	3,890.1 46%	552.8 14%	51
Industries using local raw materials	27	277.4 3%	65.6 24%	21
Industry under category "C" a/	12	98.3 1%	38.3 39%	29
Industry under category "B" b/	51	693.8 8%	120.7 17%	84
Industry under category "E" c/	267	874.5 10%	50.4 6%	99
Small industry	71	83.75 1%	1.7 2%	100
Total private industry	579	5,917.85	829.5	41
Total manufacturing	885	8,545.1 100%	2,017.1	-

Source: Bank of Tanzania.

Note: There are a small number of firms of joint public and private ownership, but since their share of the allocation is marginal 10 per cent or less, they have not been included in this table.

a/ Exporting industries

b/ Classified as "Vital industries"

c/ Other industries.

3.9.9. Table 3:26 gives the breakdown of loans by the banks to the private sector manufacturing from 1975 to 1980.

3.9.10 Due to Tanzania's foreign exchange shortage the Government have made arrangements with some foreign governments to supply goods to the basic industries under a programme of import support. In the national accounts of Tanzania this programme is included under foreign transfers. The assistance in TShs. million for the last two years are as shown in Table 3:27.

3.10 Small industry

3.10.1 Like in other parts of Africa the people living in what is now Tanzania had long ago acquired different forms of skills and craftmanship with which they carried out various activities to produce tools and other

Table 3:26 Loans from financial institutions to private manufacturing, 1975-1980

(TShs. million at current prices)

	1975	1976	1977	1978	1979	1980
TDFL	30.0	26.8	24.8	69.5	96.8	n.a.
TIB[a/]	1.5	5.7	2.4	5.9	108.9	46.4
TRDB[a/]	n.a.	n.a.	n.a.	n.a.	3.4	0.7
THB	n.a.	3.7	3.7	8.6	1.1	26.9
Commercial banks[b/]	60.0	61.0	90.0	156.0	216.0	194.0
Total	91.5	97.4	120.9	240.0	426.2	

Source: Individual bank reports and data provided by the banks.

a/ Financial year July-June and have been recorded for the calender year of the second half of the financial year.

b/ NBC and its subsidiary Karadha.

Table 3:27 Import support programme, 1979-1981

Year	Ownership	Amount (TShs million)	Source
1979/80	Private industries	60	Danish
	Public/private	30	Swiss
	Public	40	Swiss
1980/81	Private	166.2)	
	Public/private	122)	Dutch
	Public	63)	

Source: Ministry of Finance.

essential requirements in their lives. The village black-smith produced tools and other essential requirements in their lives. The carpenter made basic furniture items like beds and chairs, helped in house or hut construction, etc. A lot of people also knew how to make mats, baskets and pottery. Artistic activities, such as wood carving, were also well established.

3.10.2 Another feature in common with other parts of Africa is that Tanzania's industrialization history was shaped by colonial powers. The

objectives of the economic system imposed was, of course, to exploit the natural resources (minerals and cash crops) for the benefit of the colonial power. Consequently, the pattern of development which had taken place before was broken and in the process a lot of artisan skills were lost. In combination with an influx of mass produced imported manufactured goods, nearly all the traditional skills and indigenous techniques, e.g. from smelting and cotton textile production were lost. The economy became, and still is very sensitive to foreign trade. In sum, the economy became highly dependent on foreign trade, imported manufactured goods and foreign technology in return for exports of processed or unprocessed primary products. A major feature of industrial development after World War II was the emergence of the dual growth of large capital-intensive enterprises and a handful of large number of small labour-intensive enterprises.

3.10.3 At independence the industrial structure consisted mostly of small-scale agro-processing and extractive industry, crafts and some light manufacturing industry. However, in the 1970's the small units share of gross output has declined and the larger units have steadily increased their output share. According to David Phillips[1/] the stagnation of small enterprises was caused by two complementary trends, firstly, the emergence of the parastatal sector at national level which controls all the largest enterprises; secondly, the relative decline of the private sector which was previously engaged in relatively small-scale production.

3.10.4 Sectors in which larger-scale units have not been established are characterized still by private ownership; these include furniture, wearing apparel (including knitwear), printing, paper products (except for one state-owned packaging enterprise), rubber and plastics (one state enterprise). Sub-sectors in which the private sector predominates include oil milling, soft drinks, soap, glue, insecticides, bricks and concrete products. These have also remained at a fairly small scale.

3.10.5 According to the preliminary count of the 1977/78 small industries census carried out by SIDO, it was revealed that there are about 4,000 small-scale industries in Tanzania involving a total fixed capital investment of about TShs. 350 million which employ around 52,000 persons and have an estimated output of around TShs 850 million as shown in Table 3:28. As it

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1/ D. Phillips: Industrialization in Tanzania; Small-scale production; Decentralization and Multi-technology Programme for Industrial Development, Economic Research Bureau Paper 76.5, Dar es Salaam, 1976.

Table 3:28 Summary results of the 1977/78 small industries census

Zone	Region	No. of units	Employment (No.)	Total investment (TShs '000)	Total output (TShs '000)	Total operating costs (TShs '000)
	Tanga	124	2,830	8,466	27,993	13,462
	Kilimanjaro	169	2,152	19,184	84,262	9,457
	Arusha	165	4,272	28,914	90,180	65,560
1.	Sub-total	458	9,254	56,564	202,436	88,479
	Mara	71	1,012	6,720	14,424	4,230
	Mwanza	120	1,434	4,988	17,720	5,237
	Shinyanga	60	1,396	10,069	22,268	33,157
	Bukoba	80	1,267	3,265	4,623	3,125
2.	Sub-total	331	5,109	25,042	59,035	15,749
	Dar es Salaam	2,095	27,796	216,932	447,865	108,770
	Coast	83	1,579	2,301	8,883	1,234
	Morogoro	496	2,051	20,714	35,463	6,067
3.	Sub-total	2,674	31,326	239,947	492,211	116,071
	Singida	32	646	6,544	11,673	2,058
	Dodoma	50	733	12,052	15,265	9,028
	Tabora	61	959	10,450	18,176	3,924
	Kigoma	42	530	867	1,859	1,021
4.	Sub-total	185	2,868	29,913	46,973	16,031
	Iringa	68	840	4,384	13,694	14,374
	Mbeya	70	865	4,867	14,097	4,304
	Rukwa	23	386	318	1,129	787
5.	Sub-total	161	2,091	9,569	28,920	9,664
	Ruvuma	18	196	779	2,128	262
	Lindi	73	1,102	4,741	9,880	4,696
	Mtwara	76	1,058	3,157	2,759	410
6.	Sub-total	167	2,356	8,677	15,767	5,368
	Grand total	3,979	52,284	369,712	843,342	251,351

Source: 1977/78 Small-scale industries census in Tanzania. Small Industries Development Organization (SIDO).

can be seen from the table, the northern and coastal industrial zones rank highest in all aspects as regards to the number of units, investments output and employment. Table 3:29 shows a summary of the factory type of units which indicates that in 1977/78 there were 782 factory type units employing around 30,000 people with total investment of TShs. 231 million and commanding an annual output of around TShs. 452 million.

3.10.6 Table 3:30 shows the regional distribution of small-scale industries by sector. It might be useful to note that the distribution of small-scale industrial units has been effected by various factors namely:

(a) The high rate of urbanization for places like Dar es Salaam, Arusha and Mwanza;

(b) Rail position which favours growth points like Tabora;

(c) General development of an agrarian economy (Kilimanjaro, Kagera and Mbeya);

(d) Proximity to busy highways like Iringa;

(e) Availability of raw materials and other inputs, including utilities (Morogoro);

(f) Proximity to large-scale units which supply inputs to small-scale units and vice vesa (Tanga, Arusha, Morogoro and Dar es Salaam).

3.11 Interlinkages

3.11.1 Until now domestic inter-industry linkages have not been established to any significant extent. As pointed out in a study by Dr. K.A. Kim in 1976[1/] rapid expansion of basic and modern industries, given the characteristics of the Tanzanian industrial structure, may give rise to unintended effects of making the economy more import-dependent in the short run and at the same time be likely to have little expansionary impact on the output of the economy. Important exceptions are, however, food and food-processing industries. For these industries the basic policy objectives of industrialization (structural change) appeared to be fully compatible with the more immediate policy goals to maximize value added, employment and foreign exchange revenue.

3.11.2 The lack of inter-industry linkages has meant that some of the production anomalies characteristic of underdevelopment and dependency have

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1/ K.S. Kim, The linkage effects of basic industries in Tanzania. Some policy issues and suggestions. ERB Paper 76.II, Dar es Salaam 1976. A summary of the main findings in the paper is given in Appendix 3:H.

Table 3:29 Factory type of small-scale industry units, 1977/78

Zone	Region	No. of units (Nos)	Total employment (Nos)	Total investment (TShs)	Total output (TShs)
1	Tanga	46	1,287	5,949,089	22,341,700
	Kilimanjaro	89	1,929	15,494,000	20,778,000
	Arusha	30	404	8,983,269	55,586,260
	Sub-total	165	3,620	30,426,358	98,706,000
2	West Lake	25	527	1,382,766	2,548,752
	Mwanza	39	704	2,652,394	4,751,600
	Shinyanga	24	1,096	7,159,553	14,653,000
	Mara	34	679	4,196,415	11,164,230
	Sub-total	122	3,006	15,391,128	33,117,000
3	Dar es Salaam	206	15,777	134,255,189	226,070,258
	Coast	58	1,387	2,193,326	6,998,846
	Morogoro	46	1,058	10,815,507	15,647,456
	Sub-total	310	18,222	147,264,022	248,715,000
4	Tabora	17	70	10,309,550	16,604,000
	Kigoma	25	389	767,180	1,207,700
	Dodoma	16	591	10,808,840	12,618,845
	Singida	12	487	4,826,310	6,637,000
	Sub-total	70	2,174	25,944,000	37,068,000
5	Iringa	13	127	2,924,000	12,244,797
	Rukwa	11	202	109,516	518,000
	Mbeya	13	708	3,010,000	11,265,143
	Sub-total	37	1,137	6,043,000	24,090,000
6	Mtwara	30	906	2,487,094	2,025,659
	Ruvuma	8	144	295,917	1,847,239
	Lindi	40	822	3,216,009	6,996,000
	Sub-total	78	1,872	5,999,000	10,868,000
	Grand total	782	30,033	231,067,000	452,564,000

Source: 1977/78 Small-Scale Industries Census in Tanzania. Small Industries Development Organization (SIDO).

Table 3:30 Sectoral distribution of small-scale industries, 1977/78

(Percentage)

Zone	1 Food and beverages	2 Weaving apparel and foot-wear	3 House-hold items	4 Building materials	5 Wood work and car-pentry	6 General engineer-ing metal fabrica-tion and repairs	7 Handi-crafts	8 Print-ind and publica-tion
Tanga	23.5	14.0		2.5	51.0	8.4	-	-
Kilimanjaro	10.0	17.4						
Arusha	10.0	17.4	2.8	8.6	24.6	31.8	-	-
Mara	24.8	10.6	2.8	4.9	34.0	19.8	2.8	-
Mwanza / Shinyanga	9.0	13.6	-	18.18	40.9	13.6	-	4.5
West Lake	28.6	8.5	2.9	11.4	25.7	17.0	1.4	-
Dar es Salaam	1.4	48.0	0.9	3.6	22.9	11.1	1.0	19.0
Morogoro	23.2	2.2	4.9	-	50.9	16.6	-	-
Coast	3.6	10.8	2.4	4.4	44.5	8.1	25.3	-
Singida / Dodoma	18.5	12.9	-	18.5	22.2	22.2	1.8	3.7
Tabora	41.3	8.6	2.0	-	29.3	17.4	1.0	-
Kigoma	30.0	7.5	7.5	10.0	25.0	20.0	-	-
Iringa	7.7	7.7	-	-	17.9	66.66	-	-
Mbeya	21.0	31.5	-	-	42.0	3.3	-	-
Rukwa	4.7	33.33	-	9.5	38.3	14.3	-	-
Ruvuma	11.1	11.1	16.6	5.5	38.3	18.6	16.6	-
Lindi	12.0	6.8	1.3	2.7	56.0	13.7	2.7	2.7
Mtwara	47.0	4.0	4.0	2.7	68.0	9.7	11.1	-

Source: 1977/78 Small-Scale Industry Census in Tanzania. Small Industries Development Organization (SIDO).

been perpetuated. For example, the map of the mineral resources of the country was based on piecemeal surveys carried out largely by foreign firms looking for exportable minerals rather than domestically usable industrial materials. This is illustrated by the fact that coal and iron ore, which were used in the nineteenth century, have since then been largely unexploited, although plans for their exploitations are now in hand (see further Chapter IV). During the first phase of industrialization, industries such as cement were based on fuel oil. Urban and to some extent rural construction was developed on the basis of imported steel, aluminium, iron sheets, prefabricated concrete and glass. Bricks and tiles were hardly used except in isolated towns, villages and a few missions. Yet the raw materials for these products were widely available. The fertilizer plant was based on imported raw materials despite the known existence of potash and phosphate deposits. Ceramic products were entirely imported despite local deposits of kaolin, feldspar and other inputs. Local production of aluminium and plastic utensils (import-based) has to some extent pre-empted exploitation of local materials. A glass container plant, while using local beach sands, also imports soda ash, while soda ash is available. Until about 1975, a match factory imported wood splints, although located in a well-forested area. Pyrethrum has been exported and reimported as insecticide for local final processing. The drain, through export of domestic raw materials, from potential domestic processors has been especially obvious in the textile and leather industries.

3.11.3 Lack of integration within the industrial sector also promotes a situation whereby waste products are not used in any planned way. Examples are: molasses,[1/] rice and maize bran, cashewnut shell liquid, fruit wastes, wood chips, cotton rags, coconut husks, scrap metal (from rolling and fabrication plant).

3.11.4 The composition of industrial output seems to have been dictated by forces that have prevented the formation of domestic linkages and encouraged export processing and import substituting consumer goods. This is particularly reflected in the weakness of engineering production. Thus, limitation of domestic linkages together with introduction of capital intensive techniques have been the principal features of the industrialization process in Tanzania.

1/ NDC is now planning a bakers' yeast and alcohol plant based on molasses.

3.11.5 The growth of the public sector has, instead of redistributing industry, tended to concentrate it further which has lead to an increasing dualism between medium- to large-scale industry using relatively advanced technology and to a large extent imported skills and materials, and the more scattered smaller scale processing and light manufacturing enterprises existing along side. Further plans for restructuring production through public sector investments appear likely further to increase industrial concentration.

Chapter IV

RESOURCES

4.1.1 In this chapter an inventory is provided, as comprehensive as possible, of the resource base which has direct or indirect bearing on Tanzania's industrial development and hence supports an endogenous exploitation of these resources.

4.1.2 A country's resource base consists of the resources or possessions on which development can be based. This includes much of the natural wealth such as land, the soils, the climate and its suitability for growing crops, whether the rainfall is adequate, or whether there are water resources in rivers for providing irrigation. It includes the natural vegetation such as forests, and also the mineral wealth of a country. It covers power resources which may be coal, oil and water-power sites where electric power can be developed. Location is also a resource. A country can be in a good accessible position or not, and this can be an aid to development or a hindrance. For a country wishing to export, a coastline, like Tanzania's, is a resource and it does include a few natural harbours which is an advantage. But none of these things is of much use without people, and it can be argued that people, especially resourceful people, are a country's most important possession.

4.1.3 This chapter covers the ways in which the land and waters are used, i.e. agricultural crops, animal resources, forestry and fisheries. Then prospects for mineral development will be discussed. This will be followed by an examination of energy resources, human resources and finally sources of funds for investment in industrial manufacturing.

4.2 Agricultural resources

4.2.1 Tanzania is a large country with a total land area of 883,600 sq. km. It is estimated that 65 per cent of the total land area is suitable for agriculture. At the moment only 5.1 per cent of the total area is used for crop farming. There are many reasons for this low utilization of land including inadequate rainfall, the effect of the tsetse fly and poor communications. The question of water supply must also be considered. Many parts of East Africa have sufficient rain for the growing of crops but water for

drinking and other purposes is difficult to find during the dry season. Development of these areas depend greatly on the sinking of boreholes and the making of small dams. Large sections of the dry central areas of Tanzania are being opened up in this way.

4.2.2 In Tanzania, irrigated agriculture has been practised for a long time in the Arusha and Kilimanjaro districts, but recently several new schemes have begun also in other parts of the country. The largest project is at Mbarali, on the Usangu plains which are part of the Great Ruaha basin. Experimental crops are being grown there to see if this whole area can be similarly used. In addition to the Ruaha, the main rivers which offer irrigation possibilities are the Rufiji, the Kilombero, and the Pangani. The latter is already supplying water for irrigation. It will, for instance, be possible to develop 400,000 hectares of irrigated land in the Rufiji valley, but for this, in the context of a major hydro-electirc power scheme, a vast capital investment would be required, probably in the region of TShs. 5 - 6,000 million (about US $750 million).

4.2.3 It is planned that by 1995 the area under cultivation will have been increased from 44,650 sq.km. in 1975 to 62,600 sq. km. or from 5.1 per cent to 7.1 per cent of the total land area. Figures for present and planned land utilization are given in Table 4:1.

4.2.4. In 1980 agriculture contributed 52 per cent of the total GDP.[1/] It accounts for 70 per cent of export earnings. Nevertheless, the sector faces a number of problems such as low and fluctuating world prices on export crops: inadequate means of transportation, handling and storage; lack of finance; lack of improved seeds; shortage of trained agricultural manpower; traditional farming equipment; and limited availability of farming inputs, such as fertilizers, at reasonable prices.

4.2.5 Table 4:2 shows the total production of fertilizers from the only fertilizers plant in the country for the period 1975 to 1980. Total production decreased from 59,800 tons in 1975 to 36,900 tons in 1977 then rose to 50,000 tons in 1980.

1/ Table A:25 of Appendix 1.

Table 4:1 Land utilization in Tanzania 1975 and plans for 1995

Type	1975		1995 (planned)	
	Area km^2	Percentage	Area km^2	Percentage
Rough grazing	442,450	50.1	416,000	47.1
Small holder cultivation	38,800	4.4		
Large-scale agriculture	5,850	0.7		
Sub-total cultivated	44,650	5.1	62,600	7.1
High altitude forest	3,900	0.4		
Other woods forest	376,600	42.6		
Sub-total forests	380,500	43.0	380,000	43.0
Other (urban rocks, swamps)	16,000	1.8	25,000	2.8
Total	883,600	100.0	883,600	100.0

Source: Uhuru Corridor Regional Physical Plan, Sectoral Studies, Socio-Economic Activities, The Ministry for Foreign Affairs of Finland, Department for International Development Co-operation August 1978.

Table 4:2 Annual fertilizers production from Tanzania Fertilizers Company, 1975-80

(in tons)

Products	1975	1976	1977	1978	1979	1980
Sulphate of ammonia	17,954	18,285	15,604	16,334	24,553	-
Triple super phosphate	19,717	7,248	8,452	7,880	4,084	12,378
Dl - ammonium phosphate	-	6,551	-	-	-	-
NPK 4:25:18	14,569	-	-	-	-	-
4:18:15	5,931	-	-	-	-	-
3:27:18 + 4:25:18	219	9,478	-	-	-	-
6:25:18	1,400	-	12,830	20,267	8,232	-
25:5:5	-	-	-	-	6,803	5,128
10:10:10	-	-	-	-	2,225	-
Tob NPK	-	-	-	-	-	13,946
Total	59,790	41,562	36,886	44,481	45,897	49,942

Source: Tanzania Fertilizers Company, Marketing Division, Dar es Salaam.

4.3 Crops production and exports

4.3.1 The main food crops grown in the country are maize, sorghum, rice, millets, bananas, cassava and wheat. Cotton, coffee, sisal, tea, tobacco, pyrethrum, groundnuts and cashewnuts are the main cash crops. In Zanzibar and Pemba cloves and coconuts are the major cash crops.

4.3.2 Appendix 4.A shows production and exports of the major crops in the country from 1972 to 1980. What can be observed is a rather mixed picture of the development of production where some cash crops such as cotton, sisal, pyrethrum, cashewnuts and castor seed show declining trends, although for cotton it is not very significant. For others like coffee, tobacco, tea, groundnuts and sunflower seeds, the trend is either fairly constant or slightly increasing (for sunflower, production has doubled). For food crops, production of paddy rice and wheat appears to have dropped considerably, while sugar and maize production show fairly stable or increasing trends. Production of sorghum, millet, beans and cassava have increased considerably over the last five years.

4.3.3 The National Milling Corporation (NMC) expected to buy 171,000 tons of food crops in the season 1980/81 compared with 301,000 tons in 1979/80. This decline in the production of some major crops has forced the country to become an importer of food crops. In 1980 TShs. 700 million was spent on food imports and imports continued in 1981. Except for tea, exports of all cash crops have declined and this is particularly pronounced for the last few years and thus contributing to the present serious foreign exchange shortage. If exports of crops had remained at the 1972/73 level then Tanzania would have earned the equivalent of TShs. 1,870 million more in foreign exchange in 1981 according to a statement by the Minister for Planning recently.

4.3.4 The Government is now taking steps to remedy the situation. Targets will be set for villages, districts and regions. Fifteeen per cent of foreign exchange earnings from each crop will be set aside for the development of the crop. This will pay for imported insecticides, fertilizers, spares, packaging materials and the like. New crops prices will be announced before each season and whenever necessary. Further the Government is considering measures and programmes for more irrigation, better and timely distribution of inputs, extension services, loans and above all to pay fair and adequate prices.

4.3.5 In the following, the major crops grown in Tanzania are discussed in more detail:

Maize, paddy and wheat. A little over 100,000 tons of maize were purchased in 1972/73 but two years later the figure was down to about 25,000. However, probably due to better procurement by the National Milling Corporation (NMC), which took over purchases from the Co-operatives, the amounts increased steadily to 222,000 tons in the peak year of 1978/79, then it fell again (probably due to the weather). If NMC maintains the present price to growers in real terms and storage could be improved, maize production could yield a surplus in years of "normal" climate. Paddy purchases fell from 73,000 tons in 1972/73 to about 30,000 tons in 1979/80, and similarly, wheat purchases decreased from 47,000 tons in 1972/73 to about 27,000 tons in 1979/80. Unavailability of replacement farm machinery equipment and agricultural chemicals, due to lack of foreign exchange, have been indicated by government authorities as the main contributing factors to the decline of production. However, one may also expect inadequate relative prices and procurement system to be among factors explaining this decline.

Coffee. The peak production of coffee was recorded in 1975/76 when 55,000 tons were produced. Since then production has fluctuated around 52,000 tons; in 1979/80 production was only 46,800 tons. With an adequate supply of fertilizers, farm machinery and equipment, proper control of pests, deseases, and an adequate transport and marketing system it is believed by the Tanzania Coffee Authority that coffee production could be doubled. Besides, production could be increased if new areas which are suitable for growing the crop were exploited, particularly in Morogoro, Mara and West Lake Regions. The 1979/80 exports were probably five to ten thousand tons low because coffee could not be cured at the Bukoba plant, due to a major breakdown after an explosion and fire, and transport problems from Mbinga/Mbozi in the south and from Kagera region. Therefore, in 1981/82 exports could be equal to crop - about 45-50,000 tons plus a remaining stock of probably 10,000 tons from this year.

Cotton. The production of cotton which had increased considerably in the 1960s as a result of expanded acreage, stagnated in the 1970s in spite of rising producer prices. In the first half of the 1970s annual production was over 200,000 tons (350,000 bales), but the second half has seen a drop to an average of just over 170,000 tons. Exports have halved. Production estimate for the season (1980/81) was 173,000 tons. Estimates for 1981/82 are the same as for the previous season. Shortage of labour, repeated cultivation on the same plots without adequate application of the acidity, limitations on research and extension capacities and erratic climate conditions are some of the major problems affecting cotton production.

Sisal. Production of sisal has declined from 200,000 tons in 1964/65 to only 81,000 tons in 1980. In the 1960s the decline was due mainly to the collapse of the world (export) price. Consequently most producers either abandoned their farms or opted for the cultivation of other crops and most of the labour force was laid off. When prices began to improve in the 1970s production

could not be increased automatically because of acute shortage of labour force especially sisal cutters and sisal being a perennial crop, it takes a long time (at least 5 years) to grow. A revival of the sisal output would also require the rehabilitation of nurseries, vehicles and tractors, decorticators, and flume tow recovery equipment.

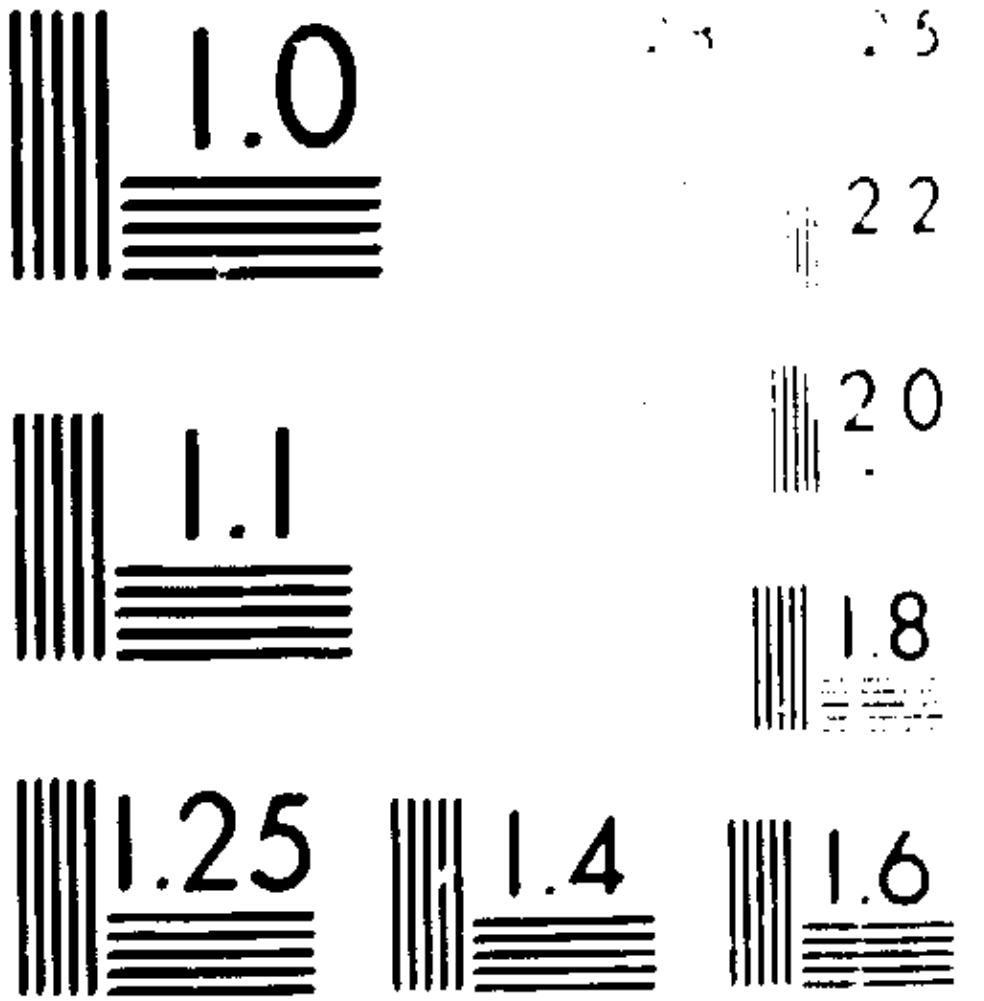
Tea. Production of tea increased from 9,000 tons in 1970/71 to 18,500 tons in 1977/78 then fell slightly to 17,500 tons in the following two years. Production increase was mainly due to the expansion of planted hecterage, thanks to the World Bank (IDA credit) small holder tea development projects under which producers were provided with establishment credit in the form of planting materials and fertilizers through the Tanzania Rural Development Bank. Inadequate transport facilities in the mountaineous areas where tea is grown and frequent breakdowns of the processing factories are the major problems facing the tea industry in the country. Green leaf must be carried daily and promptly from the collection centres at which producers sell their tea to the processing plant and must be processed as soon as possible or else the leaves wilt and are lost.

Cashewnuts. Production of cashewnuts dropped drastically from 145,000 tons in 1973/74 to the recent levels of around 50,000 tons. The slackening of crop husbandry practices, particularly weeding is believed to be the most important contributor to this downward trend in production. Poor prices is another factor. A major price increase took place only in 1980. This of course, will not have any effect until the current season.

Pyrethrum. Production of this crop fell from about 4,000 tons, in the early 1970s to 1,600 in 1978/79 and the following year. The main reason given by the Pyrethrum Development Board for the decline is that, due to the opening of the Uhuru Railway line along the major producing ares, the farmers have become increasingly aware of more profitable and less tedious crop production alternatives.

Tobacco. Production of tobacco wet leaves has since 1974/75 remained fairly constant at around 18,000 tons. Exports, however, have dropped steadily since 1976/77 and particularly in 1979/80. In spite of increases in prices and adequate supply of fertilizers production remained constant. This may be due to poor extension and fertilizer credit supervision leading to some of the fertilizers not being used or misused or applied to other crops such as maize.

Sugar. As with tobacco, production of sugar has remained fairly constant in the 1970s. This has not been enough to satisfy the growing domestic market and a net export surplus of around 20,000 tons has been turned into a net import of around 10,000 tons. A number of reasons, especially inadequate supply of sugar cane in a continuous way, machine breakdowns and transport problems of sugar from the mills to the distribution centres, have resulted in under-utilization of capacity of the sugar mills.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2.2

Oil seeds. Although the quantities of seeds produced are generally much lower than the above discussed crops, some dramatic changes have occurred during the last few years. The production of groundnuts and, particularly, sunflower seeds has risen considerably, while on the other hand production of castor seed has dropped to 10 per cent of what it was in 1971/72. Production of sesame has also dropped although not that dramatic. Soya beans and cardamom have remained fairly constant while copra was produced at significantly higher quantities in 1976/77 and 1977/78. Better varieties of sunflower and groundnuts could raise oil seed production even further. Distribution of imported seeds and advice on soya to peasants based on the Ilonga test results and seeds should also increase proudction. The successful 'Tanseed' programme could be expanded further. A solvent extraction plant for coconut oil is presently being installed at Zanzibar.

Other crops. The Government has of late encouraged people to grow drought resistant food crops such as sorghum, millet and cassava in those areas where they grow better than other crops.

4.3.6 The Government, realizing the importance of agriculture for the economy, has taken a number of steps aimed at increasing crop production in the country. For every important crop grown in the country the Government has formed a parastatal organization responsible for the development of that particular crop. These parastatals include Tanzania Cotton Authority, Tanzania Tea Authority, Tanzania Tobacco Authority, National Milling Corporation and Sugar Development Corporation. From time to time the Ministry of Agriculture assists farmers by providing extension services, subsidized agriculture inputs such as fertilizers, and sets output targets for these parastatals and regions. The National Agricultural and Food Corporation (NAFCO) has, for instance, been directed to increase wheat production in the country to 100,000 tons by 1982/83 from the current production of 16,200 tons.

4.3.7 One area considered to have high agricultural potential is the so called Uhuru corridor, a total area comprising four regions: Coast, Morogoro, Iringa and Mbeya through which the Uhuru Railway line passes. The Uhuru corridor has 22.3 million hectares of land or 25.2 per cent of the total land area of Tanzania out of which only 1.1 million hectares or 3.9 per cent is cultivated. In this corridor are some of the most fertile areas in the country for growing rice and sugar, such as Kilombero valley and Rufiji basin. The Government has formed a parastatal organization - The Rufiji Basin Development Authority which is given the responsibility of developing the basin in terms of tourism, hydro-electricity, communication

and agriculture through irrigation. The Kilombero - Rufiji basin as mentioned above is estimated to have a maximum of 400,000 hectares of land which can be irrigated. The Usangu plains in Mbeya have 120,000 hectares of which 62,000 hectares could be used to grow rice by 1995 which would produce 250,000-350,000 tons of rice.

4.4 Processing of agricultural crops

4.4.1 Like most developing countries, Tanzania's industrial development started with the processing of agricultural crops mainly for the domestic market. After the Arusha Declaration in 1967, processing of major raw materials, especially agricultural output, was one of the strategies frequently proposed for industrial development. The reasons often given for proposing this strategy were that Tanzania has a comparative advantage in that kind of processing and that the strategy was appealing to external financiers. Other reasons often mentioned for the strategy were to produce more value added, earn more foreign exchange and break the colonial trade pattern of exporting raw materials. However, the main criticism of the strategy is that it may not perform the roles expected of it.

4.4.2 Statistical data indicates that processing of agricultural produce is increasingly becoming more important. Appendix 4:B shows that the total contribution of food production, beverages, tobacco and textile manufacturing to GDP increased from 4.1 per cent in 1970 to 5.2 per cent in 1979 and 1980. However, out of the total export earnings of manufactured goods (Appendix 3:E) the share of food preparations, beverages and tobacco decreased from about 30 per cent in 1970 to 27 per cent in 1979. Appendix 3:H shows where the major agricultural processing industries by sector are located. Most of them are still located in Dar es Salaam, though now the regionalization policy of industry has had the effect of a greater dispersion of new projects to other regions. As was discussed in section 3.5 a major problem confronting the agro-based industries is capacity underutilization. Table 3:15 showed that in 1979 and 1980 capacity utilization in sugar processing was only 58 per cent and in textile about 50 per cent. Breweries on the other hand have generally operated at higher capacities, particularly beer production which has operated between 75-90 per cent of capacity.

4.4.3 Appendix 4:A shows that most cash crops are exported unprocessed. In 1980, for instance, export of raw coffee was 67 per cent of total production, sisal 93 per cent, cashewnuts 72 per cent (1979), and unprocessed tea 85 per cent. This indicates that, excess capacity in the existing processing factories notwithstanding, there is a wide scope for establishing processing factories for domestic and foreign markets.

4.5 Animal resources and their processing

4.5.1 Tanzania has abundant livestock resources as Table 4:3 indicates.

4.5.2 Most of the cattle are the small Zebu type which are poor in milk and meat production. With an offtake rate of 10 per cent, a calfing rate

Table 4:3 Livestock resources in Tanzania in 1978

Type	Number of heads ('000)
Cattle	12,000
Goats	5,500
Sheep	3,500
Pigs	30
Poultry	22,000

Source: Uhuru Corridor Regional Physical Plan, Sectoral Studies 1, 1978.

about 50 per cent, calf mortality of 20 per cent and adult mortality of 10 per cent, the productivity of the herd is extremely low. The presence of tsetse flies in many parts of the West, hampers extensive cattle keeping. Shortage of animal feed is also an hindrance to animal farming, especially poultry farming.

4.5.3 The number of slaughered cattle in Tanzania increased from 268,400 in 1973 to 342,000 in 1976 then decreased to 225,600 the following year. In 1976 out of the total slaughtered cattle, 54,100 were processed into canned products mainly for export. The Government, through the Tanzania Livestock Development Authority (LIDA) with its subsidiary companies, the National Ranching Company and Tanzania Livestock Marketing Company, is taking an active part in the development of animal resources.

4.5.4 At the moment there is only one large meat canning factory in the country, Tanganyika Packers Ltd., located in Dar es Salaam with a capacity to produce 240,000 cartons per annum. Two more slaughter houses cum meat canning factories are under construction, one located in Shinyanga and the other in Mbeya. There are three dairy products processing plants located in Dar es Salaam, Arusha and Musoma. The Dar es Salaam plant is heavily dependent on imported milk powder. The heavily under-utilized Musoma plant produces a limited amount of butter.

4.5.5 Tanzania ranks among the three most important exporters of cattle hides in Africa and is among the four principal exporters of goat skins. Commercial availability of hides and skins in the past have averaged about 1.0 million and 1.5 million pieces, respectively. With an estimated cattle population of 10 million and an average offtake rate of 10 per cent there should be 1 million hides available per annum.

4.5.6 At present there are three modern operating tanneries in the country with a total installed capacity of processing 920,000 hides and 1.5 million skins per annum or about the total available number of hides and skins. The Tanzania Tanneries Company Ltd., located in Moshi is the oldest and has been expanded to process 280,000 hides and 680,000 skins annually. The Morogoro Tanneries which became operational in 1978 has a capacity of processing 280,000 hides and 900,000 skins annually. Another tannery has recently become operational in Mwanza with a capacity to process 360,000 hides. Table 4:4 shows their actual performances.

4.5.7 At the moment there is only one large shoe factory operating in the country, Tanzania Shoe Company Ltd. (BORA), which is producing 800,000 to 1.3 million pairs of leather shoes per year for the domestic market. Another shoe factory is under construction in Morogoro with a capacity to produce 1 million paris of leather and 2 million pairs of canvas shoes exclusively for export. A leather goods factory with an estimated full capacity of consuming 183,000 m^2 of finished leather is also being constructed at Morogoro and is expected to produce 18,000 handbags, 10,000 suitcases, 32,000 wallets, 14,000 leather belts and 40,000 leather jakets annually.

4.6 Fisheries

4.6.1 Table 4:5 shows the amount of fish caught and marketed for the period 1971 to 1978. As the table shows the amount decreased from 181,000 tons in 1971 to 161,000 tons in 1973 then increased to 261,000 tons in 1977, and was again reduced, to 209,000 tons, in 1978. About 80 per cent of the fish-catch comes from freshwater. Important fishing areas are along the ocean coast, Lake Tanganyika, Lake Nyasa and Lake Rukwa, along rivers and dams such as Nyumba ya Mungu Dam. It may be observed from Table 4:5 that the number of fishermen decreased from 51,000 in 1971 to 43,000 in 1978. In 1978 there were 16,000 fishing vessels.

Table 4:4 Leather processing in Tanzania, 1978-1980

Factory	Rated capacity	1978	1979	1980
Tanzania Tanneries (Moshi):				
Hides and skins processed 000 sq.ft.	11,870	6,377	8,963	8,406
Gloves 000 pairs		41	44	48
Sales TShs 000		32,252	66,036	61,629
Mwanza Tanneries (hides):				
Upper leather 000 sq.ft.	7,875	554	3,109	1,796
Sole leather 000 sq.ft.		1	79	112
Sales TShs. 000		69	6,364	10,718
Morogoro Tanneries:				
Production 000 sq.ft.	9,040	764	3,082	3,701
Sales TShs. 000		2,566	14,137	31,324

Source: Tanzania Leather Associated Industries Company, Dar es Salaam, 1980.

4.6.2 Lake Tanganyika, on the Western border of the country has potentially the largest reserve of edible fish (besides the sea) in Tanzania. It has been estimated that with proper means of fishing, Tanzania could obtain up to half a million tons of fish annually from the lake without any danger of over-fishing. At the moment it is a most under-utilized source. About two thirds of the total fish reserves in this lake are those of a small sardin like fish, in the group of Clupeids, whereas the remaining one third consists of a larger fish, referred to as the Lates and Luccolates.

4.6.3 There are two factories which manufacture fishnets in the country, one located in Mwanza mainly for fresh water fishing and the other in Dar es Salaam for marine fishing.

4.6.4 In 1974 the Government formed a parastatal organization, the Tanzania Fishing Corporation (TAFICO) to deal with the fishing business. As Table 4:6 shows, the company's performance has not been very encouraging. It may, however, be observed from the table that the amount of prawns caught increased considerably from 848 kg in 1975 to 25 tons the following year which was approximately the same amount caught in 1980.

4.6.5 FAO and UNDP have assisted the country to undertake research on fish in the Lakes Victoria and Tanganyika. There are two fisheries institutes; one, located near Dar es Salaam, undertakes research on marine fish, whereas fresh water fisheries research is based at Mwanza. The University of Dar es Salaam carries out a fisheries based degree programme.

4.7 Forest resources and their processing[1/]

4.7.1 About 43 per cent of the total land is classified as forests. However, the predominant type of forest is the dry, so called miombo covering approximately 40 per cent of the total land area. This type of forest has very little growing stock and low density of commercial stock. About 15 per cent of the land area is gazetted as forest reserves, 1 per cent is occupied by indigenous high forests, 8 per cent mangrove forests and only 0.4 per cent or 55,000 hectares in 1978 were plantations, of which 50,000 hectares were soft woods and 5,000 hectares hard wood. In 1980 the total forest plantations are estimated to cover an area of 70,000 hectares. Table 4:7 lists the important type of trees in Tanzania. Most of the forests that are accessible from existing roads have been more or less exploited. The valuable tree species in the indigenous forests are intermingled with less valuable or useless trees and shrubs and their volume is very low sometime reaching 700

1/ Most of the information in this section comes from an FAO sponsored study in 1974 "An appraisal of the present and future demand and supply situation for wood based products in Tanzania" and Jaakko Poyrry and Co. "Wood Industries Development Programme of Tanzania", Helsinki 1980.

Table 4:5 Summary of Tanzania fishery statistics, 1971-1980

Year	Number of fishermen	Number of fishing vessels	Production							Exported fish and fish prod.		Imported fish and fish prod.	
			Minor F/water	Major F/water	Total of fresh water fish prod.	Marine production	Marine water fish prod.	Total of marine water prod.	Total production all waters	Value (in TShs 000)	Weight (in metric tons)	Value (TShs '000)	Weight (in metric tons)	Value (TShs '000)
			(In metric tons)											
1971	50,727	17,685	6,544	153,003	159,547.0	999.2	20,904.0	21,903.0	181,450.2	132,640	4,141.6	14,925	2,489.8	5,175
1972	44,013	17,991	8,960	126,436.5	135,446.5	1,115.6	27,563.5	28,679.1	164,125.6	154,062	2,647.5	10,171	2,701.2	7,218
1973	47,516	20,162	11,724.2	126,636.9	138.361.1	914.0	22,187.3	23,101.3	161,462.4	187,916	1,544.5	5,676	4,438.0	15,297
1974	42,446	18,465	4,601.5	143,107.8	147,709.3	676.8	25,218.0	25,894.8	171,604.1	241,890	8,575	5,474	2,870.1	10,296
1975	45,348	18,800	1,771.5	158,594.9	160,366.4	838.1	31,193.0	32,031.1	192,397.5	327,591	723.3	4,142	1,873.5	8,169
1976	61,108	27,045	10,678.2	180,105.4	190,783.6	2,845.5	48,491.4	48,776.1	239,559.6	545,202	386.7	3,246	510.7	5.331
1977	45,999	18,873	10,360.1	203,947.7	214,207.7	800,000.0	46,016.6	46,816.6	260,645.3	714,575	311.2	5,670	-	-
1978	42,701	16,261	4,545.0	158.226.8	162,773.8	271.3	46,436.2	46,707.5	209,481.3	n.a.	1,537.0	3,641	555.4	4,346

Source: Fisheries Division, Ministry of Natural Resources and Tourism, Dar es Salaam, 1981.

Table 4:6 Tanzania Fishing Company: Fishing operation performance, 1978-1980

	1975	1976	1977	1978	1979	1980
Fish						
Weight in tons	32	141	220	343	135	130
Value in TShs '000	n.a.	n.a.	n.a.	1,577	675	901
Prawns						
Weight in tons	0.884	25	20	12	28	24
Value in TShs '000	n.a.	n.a.	n.a.	229	559	479

Source: Tanzania Fishing Company, Dar es Salaam, March, 1981.

Table 4:7 List of important types of trees in Tanzania

Trade name	Botanical name
Mninga	Pterocarpus angolensis
Mvule	Chlorophora excelsa
Camphor	Ocotea usambarensis
Mahogany	Khaya nyasica
Loliondo	Olea welwitschii
Mtwudu	Brachystegia Spiciformis
Mtambara	Cephalosphaera usambarensis
E.A. Afzelia	Afzelia quanzensis
Mfimbo	Beilschmiedia kweo
Pangapanga	Milletia stuhlmanni
Muhuhu	Brachylaena hutchinsii
E.A. Blackwood	Dalbergia melanoxylon
Grevillea	Grevillea robusta
Mbalamwezi	Sterculia quinqueloba
Newtonia	Newtonia buchananii
Podo	Podocarpus spp.
Cypress	Cypressus lusitanica
Pine	Pinus patula

Source: Tanzania Timber Marketing Co. Ltd., Dar es Salaam

cu.ft. per acre. Unfortunately no forest inventory study covering the whole country has ever been carried out. Table 4:8 gives the results of the inventories of the forest area carried out for the Tanzania Wood Industry Corporation, through Finnish assistance. About 95 per cent of all wood utilized in the country goes for the supply of fuelwood most of which is outside the monetary economy.

4.7.2 Plans are underway to bring more area under forests. At present about 5,000 hectares are planted each year and the planting target by the year 2000 is estimated to reach 20,000 hectares per annum to meet the bourgoning requirements of wood. Emphasis is given on soft wood plantations, which are quick growing and suitable for pulp, fuelwood and other uses. The main species are Pinus Carribea, Grevillea Robusta, Pinus Patula, Omelina Arborea and Podo Carpus. These species are all suitable for industrial use; the eucalyptus species for fuelwood and poles and cypress species for protective purposes. For the Southern Pulp and Paper Mill under implementation at Mufindi in Iringa Region, the Sao Hill forest reserve plantations extends over an area which is targeted to cover 25,000 hectares by the end of 1981 and 65,000 hectares by 1991.

4.7.3 The wood processing industry is dominated by saw milling with a total installed capacity estimated at 250,000 m^3 out of which 105,000 m^3 comes under the state-owned Tanzania Wood Industries Company (TWICO). The other mills are private and most of them are very small and equipped with poor and worn-out machinery. In some private mills the uncertainty about their future role and the investment plans of the competing parastatal companies has caused these firms to let their capital equipment deteriorate. In the past few years the number of private sawmills has dropped drastically. The production of sawwood decreased by almost a third during the early 1970s. In 1978 the total production was about 180,000 m^3 comprising 61 per cent from the private mills, 25 per cent from TWICO and 14 per cent from pit sawing.

4.7.4 Plywood, particle board and fibre board production forms only a small percentage of the wood processing industry so far. There are two plywood mills currently operating in the country with a combined installed capacity of producing 12,500 m^3 per annum but production was only 4,000 m^3 in 1978. The only particle board plant in the country has 9,000 m^3 capacity with production in 1978 at only 3,370 m^3. Similarly, there is only one fibreboard plant with an actual production in 1978 of 2,600 m^3 which equalled full

Table 4:8 Result of the forest inventories in Tanzania in 1976-1978

Inventory area (Industries supplied)	Forest area Covered (he)	Forest area Net (he)	Average commercial volume a/ (m^3/he)	Total log volume (1000 m^3)	Removable log volume total (1000 m^3)	Annual (1000 m^3)	Main species
Area supplying existing mills							
1. Amani (Sikh Sawmills, Tanga)	20,000	14,830	185	2,750	1,940	55...80	Mtambara (26.4%) Mnyassa (17.5%), Mula (11.2%), Mkuzu (8%)
2. Milimanjaro (Moshi Wood Industries)	61,000	56,000	86.0	4,844	1,520	15...60	Mseri (24.9%), Podo (14.8%), Muhaa (10.3%), Ndiri (9.7%)
3. Tabora (Tabora Msitu Products)	101,000	101,000	16.3	1,632	180	15...20	Mtundu (37.5%), Muwa (33.5%), Mninga (9.1%), Miombo (6.9%)
4. Lindi (Mingoyo Sawmill)	49,400	49,400	17.9	866	370	12...20	Mtundu (48.6%), Mtanga (17.7%), Mninga (14%), Mvule (7.8%)
5. Kilombero (Mang'ula Sawmill)	45,000	40,755	13.0	532	380	12...20	Mkangazi (28.2%), Mvule (25%), Mtanga and Msaula (24.4%), Mwahe (14%)
New areas							
1. Morogoro-Handeni	300,000	256,130	13.5	3,741	2,500	70...80	Brachystegea spp (83.2%), Mininga (5%), Muhuhu (1%)
2. Mpanda	119,000	96,830	16.0	1,554	550	15...20	Mtundu (35.9%), Muwa (27.4%) Myenga (8.9%), Mninga (8.9%)

Source: Jaakko Poyrry, op.cit.

a/ All volumes are m^3 solid under bark.

capacity. Other wood processing industries are a match factory, small flush-doors factories, joinery and furniture industries.

4.7.5 The wood industry faces a number of problems such as old and worn-out machinery, lack of proper specification of production machinery and equipment, low efficiency of operation due to an inadequate log supply mainly because of transport problems, lack of spare parts, poor quality of products and difficulties in finding market on a continuous sales basis.

4.7.6 TWICO has prepared a wood industries development programme in Tanzania with the aim to increase production in the existing mills to its normal installed capacity and to build new projects where it is found recommendable.

4.7.7 The Tanzania Karatasi (paper) Associated Industries (TKAI), a parastatal organization responsible for the development of paper industry in the country, is planning to invest in a number of projects including a printing press, packaging, toilet paper and napkins.

4.7.8 As mentioned above, a big pulp and paper plant is currently under construction in the southern part of the country, at Mufindi in Iringa. The plant is expected to start production before 1985, and is estimated to cost TShs. 2.2 billion in terms of investments. When fully operational, it will produce 60,000 tons per year of paper products, ranging from newsprint, printing papers, kraft board, sack kraft and wrapping papers.

4.7.9 The Kibo Paper Plant in Dar es Salaam with a capacity of producing 3,000 tons of packaging materials is also undertaking major expansions so as to produce paper from used paper.

4.8 Mineral resources

4.8.1 Mineral exploitation in Tanzania has been taking place as far back as the 15th century. Blacksmiths were scattered in several places and iron smelting in Ufipa was quite famous up to the time of German colonialization. Both the German and British rulers carried out prospecting and/or exploration largely for their economic and security needs. Emphasis has been put on prospecting and exploration also after independence although with limited success.

4.8.2 The Government's policy for the known deposits and new mining possibilities is to give priority to:

(a) minerals used by the basic local industries, like limestone, clays and sands;

(b) foreign exchange earners or savers like diamonds, gold and coal as fuel substitute for oil;

(c) mineral industries with linkage possibilities like iron, chemical industries and coal.

4.8.3 The main institutions involved in the exploration of the country's mineral resources are:

- Geology and Mines Division, with the tasks of

  (i) carrying out and directing the basic geological survey and research.

  (ii) re-enforcing the mining laws and regulations on all mining activities.

  (iii) advising the government on mineral development policy and geological research in general.

- State Mining Corporation (STAMICO) which is charged to ensure development of potential mineral areas as well as marketing and manufacturing of various mineral products.

- Tanzania Petroleum Development Corporation (T.P.D.C.) which is charged with the exploring of hydrocarbons, refining of crude oil and marketing of petroleum products.

4.8.4 Many minerals are known to exist in Tanzania although some have not been explored. A list of the known minerals is shown in Table 4:9

4.8.5 The minerals occurance could be categorized under different industrial growth zones depending on their location as shown in Table 4:10.

4.8.6 The bulk of minerals exploitation in Tanzania is done by seven companies, three of which (Mwandui Diamond, Nyanza Salt and Luipa Gold Mines) are under STAMICO. The other four are: Lindi Development Corporation (LIDECO), Linhungu Prison at Mtwara, H.J. Stanley at Bagamoyo and Kioo Ltd. at Dar es Salaam. The rest is done by numerous small-scale licensed miners. These numbered 129 in 1978, 138 in 1979 and 108 in 1980. The mining output for years 1978-1980 is shown in Table 4:11. The figures show that there is no clear output pattern for the three years reviewed and that the important ones are diamonds gold, salt and gypsum. The production figures 1970-79 for the most important minerals are given in Appendix 4:C.

Table 4:9 Known minerals location and reserves in Tanzania

	Minerals	Location/region	Remarks/reserves
1.	Acquamarine	South-West Moshi, Kilimanjaro Region	Not explored
2.	Amethyst[a/]	Sekanke District, Singida	Not explored
3.	Iron	Chunya and Liganga, Mbeya	40 and 45 million tons of proven reserves respectively
4.	Bentonite	Singa and Minijingu Districts, Arusha	Vast reserves estimated
5.	Beryl[a/]	Manyara Kibaya, Arusha Region	Mining took place over the 1972-77 period
6.	Calcite	Coast Region	Not explored
7.	Chrysoprase	South of Kondoa	Proved reserves only
8.	Coal	Songwe-Kiwira, Mchuchuma District Mbeya	Total proven reserves 324 million tons, total estimated reserves 1.5 billion tons
9.	Copper	Same District, Kilimanjaro, Mpanda District, Kigoma	Being investigated
10.	Corundum[a/]	Kagera District, Arusha	Not explored
11.	Diamonds	Mwadui in Shinyanga District	Reserves 2.5 million tons
12.	Garnet	Same District, Kilimanjaro	Some being mined
13.	Gold reef	Geita and Chunya Districts, Mbeya; Mpanda, Kigoma; Sekanke and Kahama; Singida	800,000 tons of ore deposit proved, large potential for more reserves exist.
14.	Gold alluvial	Chunya and Mpanda District; Kigoma	
15.	Gypsum	Itigi, Dodoma; Kilwa town, Ruvuma; and Same District, Kilimanjaro	At Kilwa 2.6 million tons proved reserves
16.	Hametite	Kongwa, Mpwapwa District	Not explored
17.	Kaolin	Pugu, Kisarawe District	50 million tons estimated reserves
18.	Lime and limestone	Dar es Salaam and Tanga Regions	Vast reserves
19.	Magnesite	Chambogo and Lobolo in same District, Kilimanjaro	4.5 million tons
20.	Meerschaum	Sinya in Arusha Region	28,000 tons
21.	Mica	Near Tukuyu, Mbeya; Near Mpanda, Kigoma; Kilosa, Morogoro	Being mined at Tukuyu, and Kilosa
22.	Moonstone	Kibaya, Arusha	Not explored
23.	Opal	Same District, Kilimanjaro	Not explored
24.	Pitchblende	Morogoro District	Not explored
25.	Ruby	Mondoli, Tanga	Not explored
26.	Salt	Tyanza, Mwanza, Bagamoyo Coast Lindi and Dar es Salaam Regions	60,000 tons a year for 20 years
27.	Saltpeter	Lake Natron	Not explored
28.	Sapphire	Mkata	Not explored
29.	Scapolite	Mpwapwa District	Not explored
30.	Sepiolite	Arusha District	Not explored
31.	Tin	Karagwe District, Bukoba	Not explored
32	Topaz[a/]	Namanga in Arusha District	Not explored
33.	Tourmaline[a/]	South of Arusha	Not explored
34.	Traventine	Mbeya District	Not explored
35.	Turquois	Tanga District	Not explored
36.	Uranionite	Mgeta, Morogoro District	Not explored
37.	Vermiculite	Morogoro District	Not explored
38.	Wolfram	Bukoba District	Not explored
39.	Zircon[a/]	Singida District	Not explored
40.	Zoisite	South of Arusha	Not explored
41.	Uranium	Near Tukuyu, Mbeya	Under investigation
42.	Emerald[a/]	Manyara District, Arusha	Not exploited
43.	Lead	Mbeya District	Under investigation
44.	Guano	Mbeya District	Not exploited
45.	Phosphates	Minjigu, Arusha District	2.5 million tons proven

Source: Ministry of Mining and STAMICO

a/ Gemstone

Table 4:10 Known minerals deposits by industrial growth zone, Tanzania

Zone	Mineral
1. Dar es Salaam	Salt, beach sands, kaolin, quarries, glass sand, calcite, lime/limestone.
2. Northern Zone	Gemstones, magnesite, lime, copper, ruby, meerschaum, quarries, salt, gypsum, opal, saltpeter, soda ash phosphates, amethyst, aquamarine, sepiolite bentonite berlyl, corrundum, garnet, moonstone, topas, tourmeline, turquois, zoisite, emarald.
3. Lake Zone	Diamonds, gold, quarries, tin, wolffram, salt
4. Uhuru Corridor	Coal, mica, gold, quarries, salt ermiculite, iron, saphire, uranionite
5. Central Zone	Mica, lime, salt, quarries, chrysoprase, zircon, gypsum, hametite, pitchblende, scapolite
6. Southern Zone	Salt, beach sands, gypsum, copper, kaolin quarries, traventine, uranium head, guono

Source: Table 4:9

4.8.7 In the following the situation in respect of the country's main mineral resources is discussed:

Diamonds. Diamonds are the most important mineral since the World War II although the production is declining. Income from diamonds exceeds 30 per cent of the total mineral sales with Mwadui as the only operating diamond mine in the country.

Gold. STAMICO is operating a gold mine at Lupa and has two more in the pipeline. There are quite a number of licensed private miners but their production is negligible.

Salt. Production of salt has remained rather constant during the past 10 years, fluctuating at around 40,000 tons a year. Myanza Salt Mines which is under STAMICO, accounts for half of the total production. Other important mines are H.J. Stanley in Bagamoyo and Lindi Development Corporation (LIDECO) in Lindi.

Gypsum. The production of gypsum has shown a fluctuating trend between 1973 and 1979 as shown in Appendix 4:C. The output was highest in 1976, over 57,000 tons, and lowest in 1977, just under 8,000 tons. There are two important mining operations - Mkomazi and Makanya - both in Kilimanjaro Region. The two are under Tanzania Gypsum Limited - a subsidiary of Tanzania Saruji Corporation (SARUJI). Plans are underway to start another mining opera-

Table 4:11 Mineral output in Tanzania, 1978-1980

		Unit			1980
1. Diamonds	Mwadui (STAMICO)	gms	59,161	52.253	22,356[a/]
2. Gold	Lupa (STAMICO)	gms	10,999	8,775	9,397[a/]
3. Salt	Nyanza Salt (STAMICO)	mt	20,541	24,527	23,263
	H.J. Stanley		7,841	3,802	4,187
	LIDECO		2,315	2,142	3,442
	Limungu Prison		1,443	950	624
	Other private		6,468	6,083	9,123
4. Calcite	Kioo Ltd.,	mt	2,956	1,657	3,091
	Other private		158	175	60
5. Amethyst[b/]	Private	mt	n.a.	836	n.a.
6. Garnet[b/]	Private	gms	8,920	145,008	7,273
7. Gypsum	Private/Saruji	mt	20,205	9,952	n.a.
8. Tourmaline	Private	mt	333	1,066	6,431
9. Lime/lime-stone	Private	mt	5,129	6,111	3,078
10. Ruby[b/]	Private	mt	13,850	21,770	14,666
11. Feldspar	Private	mt	n.a.	941	n.a.
12. Scapolite	Private	gms	n.a.	100	n.a.
13. Zirkon	Private	kgs	417	n.a.	1,000
14. Mica	Private	lbs	14,859	18,925	2,476
15. Coal	Ilima	mt	7,000	7,000	7,000
16. Tin concen-trate		mt	0.8	12	n.a.
17. Meerschaum	STAMICO		n.a.	n.a.	n.a.
18. Kaolin	Pugu, STAMICO	mt	2,500	3,000	4,000

Source: Ministry of Mining, Geology and Mines Division, Dadoma, and STAMICO, March 1981

a/ January-July 1980

b/ Gemstone.

tion at Itigi - Dodoma Region. All the gypsum production is used for cement making. Two plants - Wazo Hill in Dar es Salaam and Tanga cement - are under operation - and a third plant - Mbeya Cement Factory - is likely to start production towards the end of 1981. Total annual gypsum requirement for the three plants is estimated at 65,000 tons, a much higher amount than the hiterto highest output. The gap is likely to be filled by the opening of the Itigi mine and increased output from the existing mines.

Coal. The only operational coal mine is Ilima, an isolated seam in the Songwe-Kiwira coalfield. Total recoverable reserves from this seam is 100,000 tons and present output is 7,000 tons per year. There are plans to step up the output to 20,000 tons per year by the end of this year. If this happens, then the available reserves would last only 5 years.

4.9 Future prospects of mining industry

4.9.1 Both STAMICO and T.P.D.C. have taken active part in exploring the country's mineral resources and have come up with a number of projects which, depending on their stage of completion, could be categorized as either under implementation or under study, as shown in Tables 4:12 and 4:13.

Table 4:12 Projects under implementation

Project	Location	Remarks
1. Buck Reef Gold	Geita, Mwanza	Commissioned to start in 1981. Mining capacity 70,000 tons annually. Lifetime about 12 years.
2. Coastal Salt	DSM and Mtwara	Commissioning [illegible] anned annual produ [illegible]00 tons of salt.
3. Minjugu Phosphate	Lake Manyara, Arusha	Production planned for 1982. Abour 100,000 tons concentrate of soft ore.
4. Mpanda Gold	Mpanda	Small-scale mining to start in 1981/82. 800 grams per annum.
5. Saza Gold	Mpanda	Small-scale mining to start in 1981/82.
6. Gemstones (Tanzania Project)	Merelani between Moshi and Arusha	Project has started.

Source: STAMICO, March 1981.

4.9.2 The development of coal and iron mining is a critical factor towards increased mining operations in the country. This is particularly so, given that the output of the other important minerals, viz gold and diamonds, is either declining or constant.

4.9.3 In the case of coal, geological exploration and drilling has identified two large deposits in Songwe-Kiwira south of Mbeya and Kitewaka - Mchuchuma in Njombe. Each has inferred reserves of about 500 million tons which, however, have a high ash content and are mixed with carbon of over 45 per cent and 25 per cent volatile matter. Unfortunately both are non-coking coals and no metallurgical coke can be manufactured from them.

4.9.4 There are plans to bring Songwe-Kiwira coal mine into operation at an annual output capacity of 3 million tons, which would then last for 170 years of operation. There are undoubtedly much greater quantities of recoverable coal in this coalfield, so that greatly increased output would not be restricted by lack of reserves. It is estimated that a period of 4-5 years will be required to bring the mine into operation.

Table 4:13 Projects under study

Project	Location	Remarks
1. Coal	Songwe Kiwira	Implementation 1981/82
2. Coal	Mchuchuma, Njombe	Pre-feasibility study is ready. Further studies to follow. 700,000 tons a year.
3. Kilwa Gypsum	Kilwa, Lindi	Geological investigation is ready. Project engineering still to be done.
4. Soda Ash	Lake Natron	Plans for a pilot plant with 10,000 tons capacity. UNDP to assist in engineering.
5. Pugu Kaolin	Kisarawe Coast	Reserves about 20 million tons. Planned annual capacity about 200,000 tons.
6. Chambogo Magnesite	Chambogo	Pre-feasibility study is completed. Problem is financing.
7. Iron Ore	Chunya and Liganga	Liganga expected to start operation before 1995.

Source: STAMICO, March 1981.

4.9.5 The exploitation of Kitewaka - Mchuchuma coalfield might take even longer time to develop. It has been suggested that it might be developed together with the Liganga iron-ore deposits. Given the preliminary nature of the investigations and the heavy initial investments required in power supplies and transport links in the area, the exploitation of Kitewaka - Mchuchuma coalfield must be seen in perspective of Tanzania's long-term development rather than a potential mineral during the 1980s.

4.9.6 The Mbeya market which comprises mainly the local tea estates appears capable of absorbing additional several thousand tons of coal immediately. Further markets exist in coffee drying, brick making and the Mbeya Cement Works which is designed to use either oil or coal and is due to come into operation later this year. Potential markets for coal exist in industries in other areas of the country too. These include tea making, tobacco-curing. brick-making and paper and pulp manufacture.

4.9.7 In the case of iron, there are also two possible sources of ore: Chunya iron ore and Liganga iron ore. Chinese experts have studied the Chunya iron deposits with the aim of establishing an integrated iron and steel industry. No details about the scale of operations are available. Laboratory tests of samples for the Liganga deposits indicate that the ore has a moderate iron (Fe) content (50 per cent to 52 per cent). Tests also show that the ore can deliver a concentrate of Fe content (over 60 per cent) with titanium content of from 4 per cent to 7 per cent.

4.10 Energy resources[1/]

4.10.1 Electricity. Electricity supply, apart from some small private installations, is in the hands of the Tanzania Electricity Supply Corporation (TANESCO). Planning of the Stiegler's Gorge Hydro Electric project and the downstream development of the Rufiji River Basin is the responsibility of the Rufiji Basin Development Authority (RUBADA). The TANESCO supply system consists of the coastal grid and seventeen isolated branches each of which serves a limited area.

1/ The main source of information for this section is "Energy Policy in Tanzania" by IIED, London, August 1980.

4.10.2. The main sources of electrical energy have been thermal power (diesel) and hydro-power. Up to 1976 the portion of thermal power was 67 per cent but the completion of Kidatu Phases I and II has greatly reversed the balance from thermal power to hydro-power. Nowadays, the installed capacity of Tanzania power plants is about 369 MW. Out of this the capacity of the thermal stations make 119 MW (32 per cent) and hydro-power stations 280 MW (68 per cent). Appendix 4:D shows the installed electric power and actual sales or utilized capacity during 1977-79. Appendix 4:E shows the different users 1969-79. Domesic use appears to have increased faster, by 124 per cent between 1969 and 1979, or an average increase of 12.4 per cent per annum. This was mainly due to the increased number of domestic dwellings built during the period. Commercial use increased by 115 per cent an average increase of 11.5 per cent per annum.

4.10.3 Estimates for hydro-power production potential in Tanzania range very widely. Nevertheless, total potential of hydro-electrical energy is considerable. The bulk of it lies in the potentials of various rivers as shown in Table 4:14. The available total hydro-power potential is about 4,000 MW. The bulk of the potential lies in the Rufiji River.

Table 4:14 Rivers with hydro-power potentials

Rivers	Amount exploited (MW)	Potentials (MW)
Pangani	Partially exploited	not yet estimated
Wami	-	120 MW
Ruvu	-	not yet estimated
Great Ruaha	200	70
Rufiji	Partially exploited	2,100
Ruvuma	Partially exploited	not yet estimated
Kiwira	Partially exploited	not yet estimated
Kagera, Simiyu, Mara	-	340
Kilombero River	-	500

4.10.4 Appendices 4:F and 4:G show the known mini-electric stations in Tanzania and small rivers investigated for small hydro potential in West Tanzania.

4.10.5 Oil and natural gas. The bulk of the crude oil refined in Tanzania is imported. Tanzania also imports some refined products. Total amount of crude oil imported in 1979 was 571,000 tons. Imported refined products were 278,000 tons. Total costs of crude and refined products imported in 1979 amounted to TShs. 1,420 million. Estimates for 1980 was TShs. 2,150 million. Tanzania and Italian Petroleum Refinery Company (TIPER) produced about 439,000 tons of refined products in 1979 about 62 per cent of total Tanzania's consumption. Total rated capacity of the refinery at present is 750,000 tons per year which theoretically is sufficient to meet the volume requirements of present petroleum market, which is about 730,000 tons.

4.10.6 The mix of the products from the refinery does not, however, match the requirements of the market, so a substantial proportion of the country's products need to be imported. The level of internal consumption in petroleum was approximately 600,000 tons in 1978. This shows a slow growth in oil consumption over the past six years. Tables 4:15 and 4:16 show petroleum consumption and breakdown by end use and estimates of petroleum products, production and market demand in the country. In Table 4:16 this general pattern is likely to persist because even where oil is replaced by other fuels it will tend to be in the heavier products such as fuel oil and industrial diesel oil which are in adequate supply.

4.10.7 A proposal has been made for a major expansion of TIPER refinery to increase capacity to a total of 1,600,000 tons per year, of which some of the products would have to be exported. But this proposal has to take into consideration the future availability of crude oil and its costs to the country's very limited foreign currency resources.

4.10.8 Other proposals have been related to the possibility of synthetic oil manufacture, that is liquefaction, the extraction of crude oil from coal and also the possibility of getting power alcohol from molasses which can be used as partial substitute for petrol, as up to 20 per cent alcohol can be added to petrol without requiring engine modification. But all these proposals are still in their very initial stages, except for the alcohol plant which is under implementation.

4.10.9 The only deposit of gas so far confirmed is in Songo-Songo island (near Kilwa) along the southern coast of the country. The quantity of natural

Table 4:15 Petroleum consumption in Tanzania, breakdown by end-use, 1979

(Percentage)

	Market demand	Supplied
Transport		(24.9)
Road	38	
Rail	9	
Water	5	
Air	5	
Total	57	
Industry	22	(18.6)[a/]
Agriculture	6	(11.2)
Power generation	4	(8.1)
Other	11	(37.2)
	100	100

Source: "Energy Policy in Tanzania", by IIED, London, August 1980. The set of figures shown in brackets is taken from a paper "Description of energy situation in Tanzania", TIPER 1980.

a/ Including construction.

Table 4:16 Estimate of petroleum products production and demand in Tanzania, 1980

	Tiper production tons/day	Market demand tons/day	Percentage supplied
L.P.G.	21.7	20.5	100
Premium gasoline	152.9	236.6	65
Regular gasoline	151.1	146.2	100
Jet A1	113.0	212.3	53
Ill. Kerosene	108.7	261.5	42
Diesel fuel	166.8	157.6	100
Auto gasoil	222.2	789.9	28
Fumoe oil	503.5	475.9	100
Residue for bunkers	112.7	106.6	100
Residue for export	270.2	-	-

Source: "Energy Policy in Tanzania", by IIED, London, August 1980.

gas available is estimated to be equivalent to 1,865 million tons of coal. Further exploration and exploitation of the known deposits in the region is planned.

4.10.10 For discussion and for policy formulation purposes, it has been proposed that a large nitrogen fertilizer factory could use the gas as a fuel and feedstock. Because of the small domestic consumption of fertilizer, the factory would be primarily oriented towards the export market. A second proposal is to construct a relatively small petrochemical plant producing a mix of fertilizer and plastic for Tanzania's internal use.

4.10.11 Coal. The estimated production and consumption of coal up to 1985 is shown in Appendix 4:H. Presently in Tanzania, coal is mainly used as a source of energy (steam coal), to produce steam for drying purpose in a few industries, such as tea and tobacco industries. As noted above, the possibility of using the coal deposits of Kilewaka-Mchuchuma in the manufacture of sponge iron, is under consideration.

4.10.12 Transport to the only operational coal mine is by Tanzania Zambia Railway Authority (TAZARA) line and by road (map in Appendix 4:I). But after the raising by 250 per cent of tariffs on TAZARA in 1980, prices of coal became not viable to customers from other regions. Ex-mine price of coal is TShs. 250 per ton, TShs. 330 per ton in Mbeya and TShs. 500 per ton in Dar es Salaam (DSM). Nevertheless, the Dar es Salaam price of coal. though high, is, for instance, still much cheaper than the TShs. 2,000 per ton of oil from TIPER for the cement factory in Dar es Salaam.

4.10.13 Charcoal and firewood (wood fuel). The principal source of fuel for over 90 per cent of Tanzania's population is wood. In the rural areas, it is mainly used as firewood, burned in a three-stone fire. In the urban areas, it is used as charcoal and burned in a jiko or metal stove. About 95 per cent of the country's wood consumption is for fuel. This situation is likely to remain the same for a long time because of the rising prices of kerosene which has become a substitute for wood fuel in many homes. Wood and charcoal are also used on a large-scale in a number of industries, notably tobacco-curing, brick-making and tea industries.

4.10.14 Tanzania's present wood fuel consumption is variously estimated between 30-37 million m^3 per year. Appendix 4:J shows the estimated con-

sumption and breakdown of consumption of firewood and charcoal in 1970. Forecasts of consumption range between 40.8 - 44.8 million m^3 by the year 2000.

4.10.15 Appendix 4:K shows the replenishing wood fuel supply by individual villages in the Regions between 1973-1977. Afforestation efforts appear to have increased five times during the period.

4.10.16 Other sources of energy. Biogas is produced when organic materials, such as animal and human wastes, and agricultural resideues, are fermented in the absence of oxygen. The biogas digesters in Tanzania are designed to use only animal waste, mostly from cattle. A biogas plant with a gas capacity of 3 m^3, requires a minimum of five head of cattle to provide the 50 kg per day of cowdung used in this size of digester. The energy output from this size of digester would be sufficient to meet the need of a village family of ten. The Small Industry Development Organization (SIDO) has installed in different parts of the country 95 digesters, and Arusha Appropriate Technology Project (AATP) have installed 104 digesters in Arusha and other Regions. Appendix 4:L shows biogas plants installed by SIDO. The continuation of establishment of biogas plants of animal waste type would invariably depend on sufficient concentrated animal husbandry for it to be easy to collect manure and economic incentives for digester construction at the village level.

4.10.17 Solar energy cannot yet be expected to make a major contribution to the energy needs at national level in Tanzania due to the cost in foreign exchange for some of the equipment.

4.10.18 Experiments regarding windmills in Tanzania have met with limited success as machines have broken down due to lack of proper maintenance. The cost involved is also high. In 1979 the cost of a windmill design was TShs. 15,000.

4.10.19 Surface manifestation of geothermal energy are concomitant to earth crust movement reported in all East African countries. With the large hydro electric and coal potential in Tanzania, geothermal power may have relatively low priority. But if the need for [illegible] the areas of concentration would be around [illegible] Mount

4.11 Human resources

4.11.1 In section 3.3. employment in the manufacturing sector was discussed in some detail. The development of total manufacturing employment as well as the structure of this employment was analysed and labour costs and productivity was also discussed. It has not been possible to collect recent data on the composition of this labour force by skilled, semi-skilled or unskilled industrial workers, neither has it been possible to find any statistics on its composition by sex and age groups. Since any research into these aspects of the labour force would go far beyond the scope of this study, this section concentrate on what information is available on the development of middle and high level jobs, i.e. managerial, engineering and scientific cadres and progress of the "localization" of these jobs in the civil services, which is the only sector for which any data exist. Further it will discuss the planned manpower development, i.e. training for various levels of skills to meet industrial demands. Data on future manpower requirements does not exist yet at the time of this study, but is expected shortly when the preparation of the forthcoming Union Five-Year Plan is more complete.

4.11.2 The institutional arrangements for the planning of the high and middle level manpower for the civil services rest with the Ministry of Manpower Development which was created in 1975. The main task of this ministry was to ensure that the country achieved self-sufficiency in this type of manpower requirements by 1980. However, the country's manpower needs grew much more rapidly than was previously anticipated, making it impossible for Tanzania to achieve complete manpower self-sufficiency in some of the fields by the original target date. Among the fields where the country is still to achieve self-sufficiency is e.g., the engineering and related mathematics and science-based professions.

4.11.3 The definition of the self-sufficiency in respect of manpower has been expressed as "..... of all practical purposes Tanzania will have trained.... ... the required number of Tanzanians with the necessary educational base equal to the number of every middle/high level post in the country."[1/] This meant, first, training specific numbers of manpower in specific occupations in order to fill all vacant posts in the economy, and, second, to "localize" these posts, i.e. the replacement of all expatriates by Tanzanian

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1/ Second Five-Year Plan, 1969.

citizens. Appendix 4:M shows the extent to which these targets were reached over the period from independence to 1978, which is the last year for which any figures are reported. Although total self sufficiency was not reached in 1980 the figures in the table reveal that Tanzania made very substantial progress towards the two targets, at least quantitatively. In the civil services the level of localization has almost reached 100 per cent. In self-sufficiency (citizens in proportion to total number of established posts) the results are, however, less impressive having reached now probably not much more than the 77 per cent achieved in 1978. This means that a vast number of established posts could not be filled. It should be noted that the local self-sufficiency in respect of the highest category of jobs, those normally requiring a university degree, has had the highest increase - from 15.5 per cent in 1964 to 77.2 per cent in 1978.

4.11.4 Table 4:17 on manpower requirements and expected output from local institutions is taken from the Third Five-Year Plan (1976-1981) and indicates forecasts only. The Ministry of Manpower Development is presently working on the actual figures, but when this study is being written no actual figures were available. The forecasted figures from 1976 also reveal that the expected output of students with education in engineering, and administration (which includes business schools) were much below requirements, 30 and 46 per cent respectively. Factors of particular relevance in this context are the demand of more and more complex skills required by a developing economy; the Arusha Declaration of 1967 and the Decentralization Programme[1/] of 1972 and their implications in manpower terms, i.e. the need of additional skilled manpower in order to manage the new public organizations created after 1967; the new regional administrative set-up after 1972; and also the Musoma Resolution[2/] of 1974 which caused a drop in university enrolment in the following years.

14.11.5 In a bid to meet industrial manpower demands, much emphasis has been put on technical education from primary schools to the university

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1/ The Decentralization Programme of 1972 required additional manpower to fulfil the regional tasks which were not planned for. This necessitated a big shift of manpower from the ministries causing acute shortage of experienced personnel.

2/ Following the Musoma Resolution of 1974 students would be eligible for higher education only after completing one year's compulsory full time National Service and have had a minimum of two years satisfactory work experience. This resulted into a sudden drop of 25 per cent in university enrollment in 1975-76 compared to the previous year.

Table 4:17 Manpower requirement and expected output from local institutions in the Third Five-Year Plan, 1976-1981

Field	Total requirements Third Five Year Plan	Output from institutions	Difference	Percentage of output to requirements
Medicine	793	346	-447	44
Administration	2,523	1,170	-1,353	46
Engineering	1,481	438	-1,043	30
Teaching and Arts	591	517	-74	87
Science	1,140	603	-537	53
Agriculture	166	240	+74	145
Law	610	372	-238	61
Others	972	335	-637	34
Total	8,276	4,201	-4,113	49

Source: Third Five-Year Plan, 1976-1981.

level. At the primary level a range of innovations are being introduced in the general field of arts and crafts. About twenty poly-technical primary schools are attempting to introduce new scientific insight from as early as standard one. In the Kindred Primary School Vocationalization Project young people are introduced to elementary tool making as a prelude to any improvisation in technology. Post primary (at 14 years of age and more) craft centres of two years duration had rapidly grown to 276 by 1977. A number of secondary schools have been changed to technical schools or technical-biased secondary schools. The earlier established four technical colleges at Ifunda, Moshi, Mtwara and Tanga have undergone considerable expansions. A number of vocational training centres are spread over the country and each specialized in a certain vocation. These centres are under the Ministry of Education, the Small Industry Development Organization (SIDO), the Tanganyika African Parents Association, Church schools and other private trade schools. The training centres under SIDO and their activities are given in Appendix 4:N. The training at SIDO's centres is mostly on artisan trades and is catering for the rural industries and not for the more sophisticated technologies used in the urban small industries, e.g. those in SIDO's industrial estates. The students are mostly clients of SIDO, who before receiving new tools and equipment through SIDO's small industry promotion activities get the necessary training at these centres.

However, school leavers are also an important group of students. It was expected that by end of 1980 at least 3,000 people in total were trained at SIDO's centres.

4.11.6 The duration of training at all the types of vocational training schools varies from a few weeks to four years for ex-primary school leavers. The relevance and efficiency of each of these programmes would require detailed specific study, but according to the JASPA[1/] Employment Advisory Mission report some general observations can be made. One is the shortage of instructors. This, coupled with the breakdown of equipment, results in under-utilization of the capacity of several institutions. Also, there is the issue of using rather sophisticated instruments which are unlikely to be available to trainees after they leave. This is particularly so in the case of post-primary craft centres. Thirdly, there is the need for uniform curricula and syllabuses for the same level of training. A lot of work is being done towards this direction. Fourthly, there is the issue of rigidness with regard to entry requirements. It is particularly difficult, for example, for the best craftmen to get entry into technical colleges even when they have had reasonably long experience in industry. Lastly, there is the question of adequacy of the existing institutions to meet manpower needs. No complete information or reports from these training institutions are available but the study done by JASPA Employment Advisory Mission shows that the supply during the period 1975-1980 would exceed demand (Table 4:18). This study stresses that the output from these institutions is more than enough. Since, however, not all students from these institutions are well trained or pass trade tests, what is necessary is to improve their quality and ensure that they are qualified enough to pass these tests.

4.11.7 The Faculty of Engineering at the University of Dar es Salaam had its first graduates in 1977, although since then the output had not increased much, as shown in Table 4:19.

4.11.8 On the managerial side too, a lot of effort has been put in training skilled staff. Most of the existing training institutions are being expanded. For example, SIDO is introducing in 1981 management training for small and rural industrialists. This is either going to take place at SIDO's existing technical training centres or the facilities of SIDO's industrial estates will be utilized. Attention should also be given to

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1/ "Towards Self-Reliance", JASPA Employment Advisory Mission, ILO, Addis Ababa, 1978.

Table 4:18 Estimated supply and demand for some categories of craftsmen for the period, 1972-1980

Trade	Annual demand	Annual supply						Total supply	Surplus (+) deficit (-)
		2 years or less course			3 years course	4 years course			
		PPCs	SIDO	NVTCs	Church and other private trade schools	TAPA secondary schools	Govt. technical secondary schools		
1. Carpenters	400	(2,800)	50	160	370	50	60	690	+
2. Building construction artisans (including masons and plumbers)	250	(2,600)	-	30	265	30	-	325 2,600)	+
3. Mechanics (including blacksmiths, turners and fitters)	240	-	-	40	225	50	60	375	+
4. Electricians	100	-	-	30	170	20	60	280	+

Source: JASPA Employm-nt Advisory Mission Report, 1978.

PPCs - Post Primary Craft Centres
SIDO - Small Industry Development Organization
TAPA - Tanganyika African Parents Association
NVTCs- National Vocational Training Centres.

Notes: 1. Annual demand is the average of the requirements for 1975-80 as estimated by the Ministry of Manpower Development, annual supply is that of 1975.

2. The information with regard to supply from TAPA and Church and other private trades schools is based on a study conducted by the Christian Council of Tanzania, 1975-76.

3. The output from NVTCs (National Vocational Training Centres) is from the centres in Dar es Salaam and eight regional centres in 1975. The capacity of Dar es Salaam centre has since been increased considerably and two more similar centres have started working. The number of regional centres is also likely to be increased. With the increase in the number of these centres the output will go up considerably.

4. The total supply column does not take into account the output from four earlier government technical-biased secondary schools as complete and reliable information was not available. The supply from PPCs is shown within brackets.

Table 4:19 Graduated engineers at the University of Dar es Salaam, 1977-1980

	1977	1978	1979	1980
No. of graduates	54	77	50	89

Table 4:20 Institutions for managerial training, 1980

College	Level	Graduates 1980	Remarks
Dar es Salaam School of Accountancy (DSA)	1. NAD (Accounts)	130 (1978)	DSA has 4 branches, namely the Mbeya, Mwanza, Singida and Mtwara Branches
	2. NABOCE (Accounts)	719 (1976)	
	3. Diploma supplies management	80	
	4. Certificate supplies management	73	
Institute of Finance Management	1. Professional Accountancy	30	
	2. Diploma in banking	24	
	3. Diploma in insurance	20	
	4. Diploma in tax administration	18	
	5. Diploma in management	21	
College of Business Education (CBE)	Diploma in business administration	170	A further expansion is aimed to raise the intake in Diploma courses from 110 in 1976 to 200 in 1982 and total student population from 220 in 1976 to 350 in 1982. Capacity for evening classes has been enlarged to 600 students.
Civil Service	General management	24	Conducts courses from 2 weeks to 4 months. followed later by seminars/workshops with view to impart new techniques of improved problem solving.
	Lower personnel management	19	
	Office management	69	
	Clerical refresher	114	
	Clerical industrial course	22	
	Telephone operator	41	
	Office supervisor	25	
	Civil service orientation	28	
	Manpower management seminar	20	
	Research methodology workshop	20	
	Total	382	

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Table 4:20 continued

College	Level	Graduates 1980	Remarks
Institute of Development Management (IDM)	1971 Diploma in certified accountancy	60	Being expanded to accomodate 2000 students
	Business administration	61	
	Community development	28	
	Public administration Post graduates	35	
	Diploma in management	6	
National Institute of Productivity (NIP)	Production planning and control	25	The courses are conducted when need arises. The figures should not therefore treated as strict annual figures
	Management information system	15	
	Sales lanning	28	
	Inventory management	39	
	Financial anaysis and decision making	40	
	Plant lay-out and material handling	11	
	Management by objectives	37	
	Systematic plant	25	
	Motivation for better performance	18	
	Mafunzo ya Wakurugenzi ya bodi	119	
	Mafunzo ya Wakuu wa Mashirika (Special courses for head of companies)	22	
Eastern and Southern Africa Management Institute, Arusha	Diploma in management (12 months programme) A number of short-term courses	Each course generally has between	Duration of short-term courses is between 2-12 weeks.
Dar es Salaam University	Economic management	65 (1981)	B.A. Degree
		99 (1981)	B. Comm. Degree

Source: Annual Manpower Report to the President 1976, I.D.M. News Bulletin, September/October 1980, and National Institute of Productivity.

the management training courses conducted by the National Institute of Productivity (NIP) (see para 2.7.11 above), the Institute of Finance Management (IFM), the Institute of Development Management (IDM) and the Eastern and Southern Africa Management Institute (ESAMI) in Arusha. The present position can be summarized as shown in Table 4:20. The exact demand for business graduates at different levels was not available at the time of writing this report but to date no difficulties in finding employment for successful students have been reported. In fact the demand is estimated at about 30-40 per cent higher than the actual number of graduates.

4.11.19 Some of the major parastatals such as National Development Corporation (NDC), National Textile Corporation (TEXCO), Tanzania Harbours Authority (THA), National Transport Corporation (NTC), Tanzania Saruji Corporation (Saruji) and Board of International Trade (BIT) either have their own training institutions or are in the process of building them.

4.12 Sources of funds for industrial investments

4.12.1 In Appendix 1 the structure of capital formation and savings for the entire economy of Tanzania is discussed. In recent years, an increased aggregate investment rate, which is commendably high (about 20 per cent of GDP and almost 35 per cent if calcuated for the monetary sector of the economy only) has been matched also by an increasing rate of aggregate savings. When national savings faltered (in 1974-75 and 1978) the increases in capital formation was upheld by borrowing from abroad.

4.15.2 In Chapter III (Section 3.6) a brief analysis was made of investments (or fixed capital formation) in the manufacturing sector. It was found that investments in fixed assets had more than doubled at constant prices from 1970 to 1979. The share of manufacturing investments of total investments had also increased and is now roughly one quarter. Loans to the manufacturing sector by local financial institutions and commercial banks were analyzed for the period 1970-1980 and one can observe that now roughly one third of the investments in fixed assets are financed through loans from the local financial institutions. Some of these like TIB and TDFL can also participate in projects via equity holdings, which of course, increases their share of financing fixed investments. Financing through equity and foreign sources were also discussed, although for the former type it was possible to collect information on the parastatal manufacturing enterprises only,

since no official data exists for the private sector enterprises. The foreign sources can be divided into two categories; (i) private direct investments and loans, which in Tanzania mainly takes the form of joint ventures with the government as the local partner, and suppliers credits, and (ii) development aid in the form of loans and grants from bilateral and multilateral agencies. In the latter cases the figures presented indicated not only money given for investment but included all kinds of support to the manufacturing sector, i.e. technical assistance, equipment, scholarships for training of personnel, import support of raw materials and also money given to local financial institutions for their lending to industries. This type of funds (development aid) far exceeds those lent or contributed as equity by the local financial institutions. What follows in the section is an attempt to elaborate a little further whereever possible on the above discussed items.

(a) Domestic financial sources

4.12.3 Private monetary savings have played an important role in financing domestic investment through the whole period since the Arusha Declaration. In 1976 they appear to have been at an all-time peak. Given the shift in disposable income towards the public sector, further increase in the private monetary savings rate (as per cent of GDP) may require explicit policy action, however. There is some evidence that the interest of the household sector for holding banking system obligations has been weakened by the onset of inflation. Nevertheless, there appears to be interest in holding financial assets more generally, as evidenced by the growth of both savings deposits and life insurance. It may be worthwhile here to point out also that in Tanzania no official stock exchange exist.

4.12.4 During the first five years of independence the availability of credit and the working of the bank system constituted a continuation of the pre-colonial system with foreign owned commercial banks operating according to policies made outside the country. Medium- and long-term credit was made available through hire purchase institutions and finance houses based in Nairobi or even further away. Pure development finance was in the hands of both the National Development Corporation (NDC) as the then only publicly owned holding and promoting agency and the Tanganyika Development Finance Company Ltd. (TDFL) a promoting and investment company. At that time the domestic shareholder in TDFL was the NDC, later to be taken over by Tanzania

Investment Bank (TIB).[1/] Agricultural finance for crop marketing was provided by the National Co-operative Bank owned by the shareholders of the large co-operative unions and refinanced mainly by British banks while agricultural development was the domain of the National Development Credit Agency.

4.12.5 With the Arusha Declaration of 1967 the principal elements of the economy were brought under public ownership. The NDC portfolio was increased substantially and with the other public corporations previously in existance plus the new corporations set up under the Nationalization Acts a very significant part of the Tanzania economy came in the hands of the semi-autonomous public institutions, "parastatals". The National Bank of Commerce (NBC) was formed as a successor to the private commercial banks and commercial credit and loan policy was made a national objective. The increasing need for medium and long-term commercial finance for the implementation of development projects in both the public and private productive sectors of the economy soon led to the establishment of a long-term lending programme by the National Bank of Commerce with the final concentration of these specialized activities in a newly created Development Credit programme. The NBC has branches all over the country and provides short-term loans mainly in the form of bank overdraft. Karadha Company is a subsidiary of NBC which gives short-term loans (up to 18 months) for the purchase of trucks, small milling machines and tractors.

4.12.6 Although the "parastatals" were expected to be financed from their own resources, it was realized in the late 1960s that there was a need for an investment and development banking institution which by virtue of its professional capacity could act as a channel of foreign loan funds destined to be used for the financing of productive enterprises. Therefore the Tanzania Investment Bank (TIB) was created towards the end of 1970. Parallel to TIB but specifically for the development of rural sector, the Tanzania Rural Development Bank was created six months later as a successor to the National Development Credit Agency. At almost the same time the business of the National Co-operative Bank was incorporated into the NBC.

1/ TDFL is a semi-private financial institution owned jointly by TIB, the Commonwealth Development Corporation of the UK, the German Development Company of the Federal Republic of Germany and the Netherlands Finance Company for Developing Countries.

4.12.7 The above reorganization and nationalization of the financial sector resulted in the following division of responsibilities:

(a) The Bank of Tanzania, as the country's central bank, exercises the financial control over the policies and performance of the other banks and financial institutions (i.e. all the institutions mentioned here) controls imports and holds all those other responsibilities generally in the hands of the central bank.

(b) The commercial banking functions are handled by the National Bank of Commerce (NBC).

(c) The Tanzania Investment Bank (TIB) provides development finance for all productive sectors including large-scale corporate agriculture, ranching and fishing. TIB supports both new ventures and the rehabilitation of existing industries, including resources required for productivity measures, training etc.

(d) The Tanganyika Development Finance Company (TDFL) acts as a project promoter both in terms of risk capital and through loan finance for medium- and relatively large-scale industries.

(e) The Tanzania Rural Development Bank (TRDB) provides finance for the rural sector including the participation in financing small industries and other industrial and commercial projects on a regional or district level.

(f) The National Insurance Corporation (NTC) and the National Provident Fund (NPF) provide insurance, retirement benefits to the public respectively, and invest largely in government stocks. Occasionally NTC participates in projects through equity contribution.

(g) The Tanzania Housing Bank (THB) which was formed from the Permanent Housing Finance Company in January 1973, finances residential houses as well as office and commercial buildings for example shops and godowns.

(h) The Post Office Savings Bank invests exclusively in Treasury Bills and Government Stock.

4.12.8 This reorganization had the purpose of ensuring that there was a clearly delimited sphere of responsibility between the financing of commercial aspects and development aspects.

(b) Foreign financial sources

4.12.9 It was noted in Chapter III (section 3.6.5) that for financing of the rapid expansion of public manufacturing enterprises, Tanzania has relied heavily on foreign aid sources and/or co-operation with overseas

private or public firms. In this endeavour Tanzania has been very successful. These investments have mainly been in modern and often relatively large-scale enterprises with imported technology and machinery. Examples are the petroleum refining company (TIPER), fertilizer and cement factories, the southern pulp and paper complex under implementation, textile firms, steel rolling mills and motor vehicle assembly plants. Moreover, foreign aid has also been distributed to the development of small industries through SIDO.

4.12.10 One factor in common with the majority of these new firms, and this includes also a great number of the small industries, is that they are very import-dependent for their operations. This has raised considerably the demand for foreign exchange allocations, while at the same time Tanzania's ability to earn foreign exchange has stagnated and in recent time even dropped. Due to the difficult foreign exchange situation which is likely to prevail over the next few years, investment possibilities in new ventures will be limited and whatever foreign funds can be secured will have to be redirected to support import of raw materials, intermediate goods and machinery spares to already existing enterprises. A crucial question is whether foreign aid donors will respond to this and maintain the considerable aid inflow in order to support operating costs instead of development costs for a number of years. Fortunately, there have recently been some encouraging signs that this may actually be the case.

Chapter V

PROSPECTS FOR INDUSTRIES TO SUPPORT ENDOGENOUS EXPLOITATION OF THE COUNTRY'S RESOURCES

5.1.1 In this chapter potentials for the further development of industrial capacities supporting endogenous exploitation of the country's resources will be highlighted. Chapter III reviewed the existing structure of the industrial sector whereas a detailed analysis of the country's resources was given in Chapter IV. It is on the basis of these two chapters that areas are suggested for further development of industries to utilize the available local resources. In so doing present polices, strategies and machineries for industrial development as reviewed in Chapter II have been taken into consideration.

5.1.2 Data concerning actual physical production in different industries for the year 1980 and the average of production for the years 1975-1979 has been compiled in Appendix 5:A. The existing installed capacity for 1980 indicates the existing excess capacity in some industries. The planned production for selected sectors is also given. Finally, estimated national demand figures for these sectors for the years 1980 and 1985 have been given. These data are used as a starting point for the analysis of the potential for new industrial projects to utilize the country's natural endowments. Project profiles indicating specific projects are given in the last part of the present chapter. The exercise is limited to the period 1980-1985. This is because it has not been possible to have reasonably accurate projected figures for the period after 1985.

5.1.3 A detailed analysis of the existing industries was given in Chapter III. From the analysis, one can make the following observations:

- The manufacturing sector forms a small share of the economy estimated at only [illegible] per cent of the GDP in 1980 (Table 3:1).

- By 1980 the structure of the Tanzania's industry was still dominated by a pattern of primary [illegible] and light import substitution (Table 3:[illegible]).

- The public (parastatal) sector [illegible] important [illegible] in the development of industry [illegible]. In [illegible]

- The industrial sector is currently facing a number of critical problems such as lack of foreign exchange to import raw materials and spares, inadequate infrastructure, market constraints, shortcomings in management and labour discipline. The result is low capacity utilization in most of the existing industries and low labour productivity as elaborated in

5.2 Agro-industrial projects

5.2.1 Previously (section 4.2) the importance of agriculture in the Tanzania economy has been stressed. The manufacturing sector is still dominated by the primary processing of raw materials (mainly agriculture) and import substitution. Within the framework of the official strategy for industrial devement the Basic Industry Strategy (BIS), as outlined in Chapter II, agro-industrial projects will remain for a long time important industrial activities. The advantages of processing agricultural products before final use include increased value added to the product and employment potentials. Agro-industrial projects are also associated with unique problems such as seasonarity, perishability and variability. Therefore, though most agricultural processing industries operate under capacity (Table 3:15), it is unlikely that they can go beyond a certain limit of capacity utilization. It is against this background that opportunities of exploiting endogenous agricultural resources for industrialization have been assessed.

(a) Sugar industry

5.2.2. From Appendix 5:A it can be observed that in 1980 the annual estimated combined capacity of the four sugar mills in the country was 167,000 metric tons of white sugar whereas the actual production was 123,000 metric tons on 74 per cent capacity utilization. The national demand for sugar in the same period was estimated at 200,000 metric tons and is expected to increase up to 300,000 metric tons by the year 1985. Installed capacity is expected to increase to 230,000 metric tons by 1985, when the Kagera Plant in Kagera Region is completed (1982) with installed capacity of producing 56,000 metric tons of sugar and the Mtibwa plant near Morogoro is expanded to 34,000 metric tons from the present 27,000 metric tons capacity.

5.2.3 Based on these production and demand figures it shows that by the year 1985 there will be an estimated demand gap of 74,000 metric tons of sugar, assuming that all the mills will operate at full capacity in that year.

However, if the mills were to operate at the same level as in 1980 i.e. 74 per cent capacity, planned production in 1985 would be about 170,000 metric tons with the effect of doubling the demand gap to 134,000 metric tons. This implies that, in order to meet the projected demand of sugar in 1985 from local sources, there is room for investing in a sugar mill or a number of sugar mills with a combined size of three of the current plants in the country i.e. Kilombero I, Kilombero II and TPC (total installed capacity 140,000 metric tons).

5.2.4 Tanzania has abundant land suitable for the cultivation of sugarcane, the major raw material in the production of sugar. Most of the river valleys are yet to be exploited. The Sugar Development Corporation (SUDECO) has plans to build three sugar mills in the country. These are outlined in the presentation of projected profiles at the end of this chapter. Together they will have an installed capacity of producing 170,000 tons of white sugar. The major bottleneck in the development of these projects is the huge investments required. The planned Ruipa Sugar Mill, the largest plant of the three was estimated to require TShs. 3.3 billion by 1980 prices. About 1/3 of total investments will be for the development of sugar estates for the supply of sugar cane to the mill. By the time of completion the proposed Kagera sugar plant with a capacity of 56,000 metric tons will cost almost TShs. 1 billion.

(b) Tobacco processing

5.2.5 Tanzania produces around 18,000 metric tons of tobacco wet leaves. After primary curing at the farm most of the tobacco is processed and graded at the two procesing plants located in Morogoro and Songea. About 40 per cent of the processed tobacco is sold locally where most of it is utilized by the only cigarette company in the country, Tanzania Cigarette Company (TCC) which produces cigarettes of various brands mainly for the home market. The domestic demand of cigarettes is estimated at 5.3 billion sticks per annum whereas the TCC plant has a capacity of producing 7.2 billion sticks a year. It appears therefore that the existing installed capacity is sufficient to meet the domestic market. The remaining 60 per cent of the semi-processed tobacco is exported. In 1979/80 total exports amounted to 6,100 metric tons.

5.2.6 The Tanzania Cigarette Company has considerable experience in the manufacturing of cigarettes. It is one of the most profitable parastatals

in the country. It would seem reasonable for TCC to consider a project to manufacture cigarettes for export. In such a venture collaboration with a reputable multinational cigarette company will be required. A proper and aggressive market study would have to be conducted to assess the export market for Tanzania cigarettes.

(c) Coffee and tea processing

5.2.7 Coffee production was 47,000 metric tons in 1979/80 and tea production was 17,300 metric tons (Appendix 4:A). Out of total output 31,000 and 15,000 metric tons of coffee and tea respectively were exported after primary processing. Tanzania also exports an insignificant amount of fully processed coffee and tea products. If research on the export market on these finished products would indicate some potential, one could look into an industrial project in these areas.

(d) Cashewnuts processing

5.2.8 Production of cashewnuts decreased from 145,000 metric tons in 1973/74 to 49,000 in 1978 (Appendix 4:A). The total installed capacity of the existing cashew processing plants is estimated at 41,000 metric tons of cashewnuts (Appendix 5:A). It appears therefore that unless measures are undertaken to revive the production of cashewnuts first, there is little, if any, room for expansion of the processing plants. A study was undertaken sometime ago by the Cashewnuts Authority of Tanzania to determine the possibility of producing juice/soft drinks from the cashew fruit. However, due to high unit production cost, market taste, and competition from other popular brands of soft drinks and orange squash the product was found uncompetitive. In some areas of the coastal regions where the plant is grown, people ferment the fruit to produce a local brew which is extensively used.

(e) Cotton processing and the textile industry

5.2.9 During the second half of the 1970s total annual production of seed cotton averaged just over 170,000 metric tons. This was an equivalent to about 56,000 metric tons of cotton lint and 114,000 metric tons of cotton seeds and wastes. In 1980, when on the average the textile mills were working at about 50 per cent capacity, they utilized about 19,000 metric tons of cotton lint.

5.2.10 It follows therefore that, assuming that all the mills were to work at full capacity and were to use cotton lint only as the basic raw material in the production of textiles, the total requirement of cotton lint would not exceed 40,000 metric tons per annum. This leaves a considerable amount of cotton lint (an annual average of 16,000 metric tons based on late 1970s cotton production) available either for export or to be utilized locally in new textile mills or for expanding existing ones. Export of cotton lint during the late 1970s, averaged more than twice the domestic demand consumption (Appendix 4:A). However, domestic demand of textiles is estimated to increase from 137,000 metres in 1980 to 172,000 metres in 1985 whereas total installed capacity is estimated to increase from 160,000 metres in 1980 to 220,000 metres in 1985. Therefore, on the whole, the domestic market for textiles appears to be saturated. This does not necessarily mean that the market for every type of textiles is saturated. A market study would be required to determine the type of textiles for which an additional domestic market exists. The country is currently facing an acute shortage of terry towels, curtain materials, handkerchiefs, table covers and denim cloth for the manufacture of western type jeans etc. The Kitenge and Khanga products from some of the local mills are in high demand locally, yet they are not available in the market.

5.2.11 It has not been possible to estimate the export market potential for Tanzanian textiles. It appears, however, that if measures were taken to improve the quality of the textile products and to reduce considerably the unit cost of production accompanied by an aggressive export drive, particularly to the neighbouring countries (some of which do not grow cotton) it should be possible to export a considerable amount of textiles.

5.2.12 The National Textile Corporation (TEXCO) plans to invest in a number of textile mills so as to implement the Government's directive of utilizing at least 60 per cent of local cotton in the local textile mills by the year 1985. Beside these projects which are at different stages of implementation, TEXCO is considering building several textile mills and to expand some of the existing ones. One such project is the proposed Mtwara textile mill which in 1979 was estimated to cost TShs. 1 billion. A similar textile mill is planned for Shinyanga. A regional development corporation in Mara Region - Musoma Industrial Company (MICO) - is studying the possibility of starting a medium-size project to manufacture cotton hosiery, terry towels, handkerchiefs, cotton wool etc.

(f) Sisal processing and spinning

5.2.13 Sisal is one of the most important agricultural crops in the country. In 1980 Tanzania produced 81,400 metric tons of sisal (Appendix 4:A). About half of this is exported as fibre. A number of products can be produced out of sisal, such as ropes and twine, mattresses, sisal bags and carpets. A few years back there was a substantial drop in demand for sisal ropes in the world market because of the introduction of synthetic ropes. However, due to high prices of petroleum, the price of synthetic ropes has gone up rapidly and consequently the demand of sisal ropes has started going up again.

5.2.14 At the moment there is total installed capacity of producing 5,500 metric tons of sisal ropes per annum. The domestic demand for sisal bags was estimated to increase from 20 million in 1980 to 30 million bags in 1985. Although no demand figures were available for this study, it is felt that export markets exist especially in neighbouring African countries such as Rwanda, Burundi, Uganda, Zaire, Zambia and Zimbabwe.

5.2.15 Currently there are two bag factories in the country with a combined installed capacity of producing 5 million bags per year. The two factories are being modified so as to increase their total installed capacity to 9 million bags by the end of 1982. A new sisal bag factory at Morogoro is under construction which is expected to increase the installed capacity in the country to 19 million bags. It follows, therefore, that based on those demand and supply estimates there will be an estimated demand gap of 11 million bags by the end of 1985.

5.2.16 At the moment there is no plant in the country which produces upholstery material, paddings, rubberized mattresses and reinforced polyster sheets. A project to manufacture the above items using sisal would seem to be a good import substitution. It might also be possible to export some products to neighbouring countries.

5.2.17 The Tanzania Sisal Authority (TSA) has built a factory to manufacture sisal carpets to satisfy the homemarket and for export. TSA is considering to build another sisal bag plant in Tanga Region with a capacity of producing 10 million bags per annum. A pre-feasibility study was completed in 1980 and the total investment cost by then was estimated at TShs. 17,000,000. TSA is also looking into the possibility of starting a small sisal paddings/ mattress factory in Musoma to utilize hedgerow sisal fibre which is widely available in the Lake Regions.

(g) Food processing

5.2.18 Food processing, particularly maize milling is dominated by the National Milling Corporation (NMC). Although NMC has excess installed capacity in maize milling, it is considering to build another maize mill plant at Korogwe to process maize grown in Tanga region so as to reduce costs of transporting maize from that region to the existing mills. The estimated investment is TShs 10 million.

5.2.19 Tanzania produces several types of fruits such as mangoes (Tabora and coast), oranges (coast, Morogoro, and Tanga) and pineapples (coast). Currently, most of these fruits are consumed fresh. NMC and a few private companies process some of them into canned or bottled fruit juice. The market at the moment seems to be saturated given the fact that Tanzanians prefer fresh fruits. Due to transportation problems in the country and the fact that fruits are perishable, the possibility of building small to medium size fruit processing plants should be considered in places where surplus fruits are available. The potential for export-oriented fruit and vegetable canning should be looked into. The production of various coconut products should be investigated.

(h) Forest-based industries

5.2.20 The status of the forest reserves and the existing local processing of wood was extensively covered in Chapter IV (section 4.9). The wood industry is dominated by saw milling. Although there is excess installed capacity in most saw mills, and other related plants such as plywood, particle board and fibre board factories in the country, there is still scope for establishing some wood processing factories for domestic and foreign markets in specific locations. This is because it is normally much cheaper to locate a saw mill near the source of raw materials that to transport the

logs to the existing saw mills. In view of the above, the Tanzania Wood Industries Company (TWICO) with assistance from the Finnish Government has prepared a short-term development plan for wood industries in Tanzania. This plan suggests a number of projects including a veneer mill to be integrated with the Mang'ula saw mill in the Kilombero area, an integrated saw mill cum plywood plant in the Morogoro/Handeni districts, a soft wood saw mill in Mbeya, a hardwood saw mill in Mpanda and several small-scale saw mills in Sumbawanga and Njombe districts. All these projects are based on availability of logs in their respective surrounding areas. TWICO has also plans to increase production in the existing mills in the country. There are also similar plans in Kagera region to utilize local forests. These projects are being promoted by regional authorities.

5.2.21 Depending on the availability of sawn local wood, the possibility of starting secondary wood processing industries could be looked upon as a means of promoting wood processed products. Joinery, furniture, prefabricated houses, various components and special wood products would all be suitable for new development. Most of the joinery and furniture works are done at a very small-scale. There exists very few medium-size furniture factories which produce high quality products in the country. Project profiles at the end of this chapter indicate the level of investment for a typical medium-size saw mill and a furniture plant based on feasibility studies conducted by TISCO.

(i) Animal-based industries

5.2.22 Major projects in the processing of animal resources and their by-products are unlikely in view of the previous discussion (section 4.5) However, a market study would probably be required to identify specific products to suit specific domestic and export market. In particular, further development of export-oriented leather and leather goods production might be looked into.

5.2.23 When the two meat canning factories that are under construction (para 4.5.4) become operational, a project could be studied for drying and processing sofals and bones. The produce would be of interest as supplementary input in an animal feed project actively being considered by NAFCO and other private investors.

(j) Fish-based industries

5.2.24 Fish resources in the country would seem to offer good prospects for industrial use (section 4.6). Lake Tanganyika and the Indian Ocean have potentially the largest reserves of fish in the country. At the moment most of the fish caught is consumed locally without being processed on a commercial basis. The National Milling Corporation (NMC) has a small fish processing plant in Mwanza for the supply of fish meal to their Dar es Salaam based animal feed plant. The Government and some private parties have plans to build fish processing plants in Mwanza/Musoma/Bukoba/Kigoma and along the coastal areas.

5.2.25 The development of the fish processing industry would to a large extent depend upon the availability of fish. At the moment due to inadequate fishing methods, the daily catch is not sufficient to support such a venture.

(k) Agricultural-based chemicals

5.2.26 Molasses and bagasse are the major by-products from sugar cane. Molasses can be utilized to produce various products such as fertilizers, animal feed, distilleries such as industrial alcohol and beverages and can also be used as an input into chemical industries. Total production of molasses in the country is estimated to increase from 63,000 metric tons in 1978/79 to 87,000 metric tons in 1983/84. Local consumption of molasses (mainly by NMC in the manufacture of animal feed concentrates) is estimated at 1,000 metric tons per annum and total exports are about 20,000 metric tons per annum. The National Chemical Industries (NCI) is starting a project at Moshi to utilize about 35,000 tons of molasses to produce about 10 million litres of industrial alcohol. Bakers' yeast and active dry yeast are being considered to be added in the product mix. A study was also carried out to determine the possibility of producing polyethylene from molasses at Kilombero. However, the project was not viable mainly because it was below the minimum economic size.

5.2.27 From bagasse it is technically possible to produce various items such as acetic acid, pulp and paper, paper board, furfural, fibreboard and particle board. At the moment most of it is used as fuel in the sugar mills.

Depending on the availability of surplus bagasse, the possibility of utilizing it to produce the above items might be considered. A mini pulp and paper plant might be studied with the assistance of SIDO.

5.2.28 A project to produce starch, glucose and possibly industrial alcohol, from cassava is being implemented by NCI with technical assistance from the Netherlands Government.

5.2.29 Necogenin, an extract from sisal, could be utilized to produce drugs for the pharmaceutical industry.

5.2.30 Cellulose and viscose rayon could be produced from cotton linters.

5.3 Processing and development of mineral-based industries

5.3.1 Chapter IV (section 4.8) elaborates the mineral resources in the country. The most important mineral resources for industry use in the country are iron ore (95 million tons), coal (1 billion tons), soda ash, phosphates (2.5 million tons), natural gas, gypsum, kaolin, carbon di-oxide, bauxite clays, pyrites (200 million tons), silica sands and common salt. The development of local mineral-based industries will to a large extent depend upon the exploitation of these minerals and further intensification of mineral exploration.

5.3.2 The Government's policy for the known deposits and the exploitation of new mining possibilities have been commented on previously (para 4.8.2). In short the Government encourages the exploitation of those minerals which are either used by the basic local industries, or are earners/savers of foreign exchange. High linkage possibilities (like iron, chemical industries) are also taken into account.

5.3.3 Appendices 5:A and 5:B give estimates of the physical production in 1980, installed capacities, planned production for 1985 and demand figures for 1980 and 1985 for various mineral-based industries. Based in the above factors and the estimated reserves for each category of mineral deposits, it is possible to look in the possibility of developing these mineral-based industries.

(a) Metal working industries

5.3.4 The Government puts maximum emphasis on the development of engineering, iron and steel, and other metal working industries. Among the targets of the long-term industrial development plan are to establish basic industries, especially iron, coal and chemical industries and industries for the manufacture of building and construction materials and to establish engineering and metal working workshops for the making of tools, machine parts and spares, in order to raise the country's self-reliance capability and develop an internal market for iron and construction materials.

5.3.5 In accordance with the Basic Industry Strategy, in a modern economy steel and other metals, chemicals, glass etc., are particularly important because they have high linkages and externalities and produce higher growth in the long run. Because of the central role iron and steel plays in any industrial development and being locally available, together with other economic gains, such as foreign exchange savings, employment effects etc., the economic benefits may surpass the difference between unit production cost and import price. According to a study carried out by TISCO the demand of iron and steel was estimated to rise from 125,000 tons in 1980 to 269,000 in 1985. The total installed capacity in 1980 for all the iron and steel works in the country was estimated at 125,000 tons.

5.3.6 The Government with assistance from the Government of Federal Republic of Germany carried out a feasibility study to determine the possibility of exploiting these resources for the development of the iron and steel industry. The study proposed a project to produce 200,000 tons of iron and steel and 1,000,000 tons of coal. A bigger size plant was not envisaged because of the constraints of the market. However, it can be argued that a plant of such size will be below the economic size of an iron and steel plant hence the unit cost will be higher than the one prevailing in the international market. The other major constraint to the establishment of an iron and steel plant besides the unit production cost is the financial requirements. Foreign assistance would seem to be a prerequisite for industrial undertaking of this size order.

5.3.7 The development of iron and steel will form an important base for the further development of the metal working industries in the country i.e. the group of industries which use products of basic metal industries especially iron and steel for further transformation into metal products, machinery, electric machinery, apparatus, appliances and supplies, transport equipment and manufacture of professional and scientific and measuring and controlling instruments, photographic and optical goods.

5.3.8 In Tanzania, the metal working industry is at a very early stage of development. Most of the units are small workshops dealing with job working and repairing work. The share of metal working industries in the total output by all manufacturing industries increased from 7.7 per cent in 1966 to 13.5 per cent in 1973.

5.3.9 A development plan for metal working industries in Tanzania, a study carried out by TISCO on behalf of the National Development Corporation, points out that there exists a demand gap for a variety of products of the metal working industries some of which are listed in Appendices 5:B and 5:C. Given the range and size of metal working industries existing locally, one can safely conclude that there is room for suggesting a number of units in the country. The National Development Corporation (NDC), the parastatal responsible for the development of the metal sector and engineering, has realized the importance of this and has taken preliminary steps towards the establishment of key metal working industries. Some of these are:

- Central foundry and forge unit
- Increased capacity in farm implements
- Establishment of a machine tool factory
- Construction of a metal vehicle assembly and manufacturing plant
- Starting a project to manufacture distribution transformer and switch gear
- Billet casting
- Railway wagons
- Low loader and trailers
- Truck manufacturing
- Welding electrode

5.3.10 In the project profiles at the end of this Chapter indications are given of the investment figures needed for these projects. A list of

other projects which could be considered for further development is also provided. The major constraint to the implementation is the financial requirements especially for foreign currency. However, some of them, like Mbeya Farm Implements Plant, Moshi Machinery Tools Plant and Moshi Distribution Transformer and Switch Gear Plant are at different stages of implementation.

5.3.11 Probably the project to be given the highest priority in this sector is the establishment of a central foundry and forge plant to meet the requirements of castings for the various industries to be set up in a few years as well as those of the existing ones. Such a plant was estimated to cost TShs. 335 million in 1979/80.

(b) Cement

5.3.12 The major raw material in the production of cement is gypsum. Deposits of gypsum have been discovered in several places in the country such as Itigi, Dodoma, Kilwa, Ruvuma and Same as shown in Taole 4:9. Cement is one of the major inputs in the construction industry and because construction is important in the development of most other industries, cement is therefore a basic good and it ranks high in the national Basic Industry Strategy. The national demand for cement is expected to rise from 968,000 tons in 1980 to about 1,500,000 in 1985. Actual production of cement in 1980 was 1/3 of the estimated demand. Assuming that the present three factories will work at full capacity in 1985, there will still be demand gap of about 150,000 tons of cement. Though the Tanzania Saruji Corporation plans to improve the operations of the cement factories in the near future, it is unlikely that full capacity utilization will be reached. Assuming that only 80 per cent of capacity utilization will be reached total production of cement will increase to 1,080,000 tons in 1985 thus leaving a demand gap of 369,000 tons of cement. Based on these observations and given the importance of cement in the development of many other industries, the possibility of building a new cement factory in the very near future should be considered. Plans are underway to construct a cement factory at Kilwa in southern Tanzania to serve the southern part of the country and for export. Besides, the Government is considering the possibility of building mini-cement factories to serve specific market segments where, due to the country's transport and distribution difficulties, it becomes too expensive to transport cement from the existing factories. One such area is the Lake Zone comprising Shinyanga, Mwanza, Mara and Kagera regions.

(c) Ceramic and refractories

5.3.12 Until the end of 1980, there was no large-scale ceramic plant in the country. Most of the ceramic requirements were imported. Total demand in that year was estimated at 1,300 tons of ceramic products and was estimated to increase to 1,500 tons in 1985. About two thirds of the demand was for table ware and the rest sanitary ware. The Tanzania Saruji Corporation is building a ceramic plant at Morogoro with a total installed capacity of producing 2,000 metric tons of sanitary and table ware. The plant is expected to be operational in 1983. A fairly good portion of the output will be earmarked for exports especially to the neighbouring countries This being a high bulk item, the neigbouring countries will be able to affect considerable savings in transport cost if they import from Tanzania.

5.3.13 Almost all the basic raw materials are available locally i.e. ball clay (Matimba en route to Mbeya), kaolin (Pugu Hills), quartz (Mgeta near Morogoro), felspar (en route to Dodoma), and gypsum. In addition some clays have been reported in Mwanga district in Kilimanjaro region. Preliminary tests have indicated their suitability for low to medium quality ceramics ware. Subject to the success of the Morogoro plant in exporting a part of its products, there will be a scope for a medium size ceramics-ware plant to cater mainly to the regional requirements.

5.3.14 A bricks and tiles plant is also under construction near Dodoma promoted by the Capital Development Authority (CDA). Furthermore, the Saruji Corporation is considering building a refractories plant at Tanga at an estimated investment cost of TShs. 450 million. When fully operational it will produce about 30,000 tons of basic and alumineous bricks and monolithics.

(d) Fertilizers

5.3.15 Output figures for the only fertilizer plant in the country are shown in Table 4:2. Currently this plant uses imported phosphates to produce phosphatic fertilizers. Considerable deposits of phosphates are known to exist at Minjingu in Hanang District in Arusha Region with total deposits estimated at 2,500,000 tons. A project is under implementation with Finnish assistance to mine these for use in the fertilizer plant. The total

initial investment cost of the phosphate mining project is estimated at TShs. 213 million and it will mine about 100,000 tons of phosphates annually. Phosphatic fertilizers could also be produced from gypsum by applying the Mueller-Krehene process or from pyrites. Gypsum and pyrites deposits are known to exist in several parts of the country. It is estimated that there are not less than 200 million tons of pyrites deposits in Geita district in Mwanza region.

5.3.16 The Government has signed an agreement with an American company - AGRICO Overseas SA - for the exploitation of the Songo Songo natural gas reserves and the subsequent production of ammonia. Part of this ammonia will be exported and the rest will be used in the production of fertilizers such as urea and ammonium sulphate.

(e) Alum plant

5.3.17 Considerable deposits of bauxite clays are reported to exist in Amani area in Tanga Region. Unfortunately the aluminium content of these deposits is too low (26 per cent) for the production of aluminium. However, the possibility of using these clays to produce alum, an important chemical in water treatment, could be studied. Current imports of alum stand at 800 tons per annum and are expected to rise to 1,500 tons by the year 1985.

(f) Glass industry

5.3.18 Good quality silica sands deposits used in the manufacturing of glass are known to exist at Mbanda near Dar es Salaam and along the shores of Lake Victoria. Also good quality quartz is found in Morogoro region. The Dar es Salaam based Kioo Company Limited produces glass bottles. Two more plants, one to produce sheet glass and the other glass containers are at different stages of implementation at Dar es Salaam and Mwanza, respectively. Another medium-size semi-automatic glass plant project is being studied by Saruji Corporation.

(g) Common salt

5.3.19 Common salt or sodium chloride is a primary raw material in the manufacture of chemicals such as sodium carbonate (soda ash), caustic soda, sodium sulphate, calcium chloride, sodium nitrate and hydrochloric acid. Some of these products such as soda ash could be produced more economically

from other sources such as natural soda ash which is abundant near Lake Natron. Common salt can very easily be produced by evaporating sea water. Besides the Nyanza salt works, there are several small-scale salt works along coastal areas.

5.3.20 In view of the shortage of salt in the country and the export possibility to neighbouring land-locked countries, small- to medium-size salt projects could be studied.

(h) Coal chemicals

5.3.21 The possibility of utilizing the coal reserves to produce chemicals such as explosive synthetic rubber and phenolic resins could be considered in the future depending on when these coal reserves are exploited and whether there will be enough market for those products to support at least the minium economic size project of that nature. Technically it is also possible to produce gasoline and ammonia, and then transform it to the fertilizer urea. Considering what has already been discussed regarding production of ammonia it is unlikely that a project to produce ammonia from coal could be considered at the moment.

5.4 Manpower and financial resource requirements

(a) Manpower

5.4.1 The future development of industries will to a large extent depend upon the level of development of the human resources in the country and the availability of financial resources. The human resources were discussed in detail previously (section 4.11) and employment in the manufacturing sector has also been covered (section 3.3). According to preliminary estimates by the preparatory committee for the new Five-Year Plan 140,000 people will be absorbed in the manufacturing sector by 1985. It is the Government policy to emphasize technical education from primary to university level. However, in view of the existing manpower resources and the likely industrial development, it is feared that for a long time to come, skilled manpower will continue to be scarce.

(b) Financial resources

5.4.2 Another important factor likely to affect the future development of industries is the availability of financial requirements. In Chapter III the

industrial capital formation and investments were discussed. The structure of local and external financing were covered in paragraphs 3.6.3 and 3.6.4, respectively.

5.4.3 Table 5:1 shows that fixed and gross capital formation for the manufacturing sector was TShs. 1,259 million in 1979. Assuming an 8 per cent growth rate in this sector as tentatively planned in the new Five-Year Plan the capital formation up to 1985 will be as shown in Table 5:1.

Table 5:1 Projected fixed and gross capital formation in manufacture, 1979-85 (1979 prices)
(TShs. million)

1979	1980	1981	1982	1983	1984	1985
1,259	1,360	1,469	1,586	1,713	1,850	1,998

5.4.4 From the table, it is estimated therefore that total investments in the manufacturing sector for the period 1981 to 1985 will amount to TShs. 9.6 billion or an average of TShs. 1.7 billion per annum. The total financial requirements for the list of project profiles given below in this chapter for which investment estimate figures were available amounts to TShs. 9.8 billion. If all these projects were to be implemented in the period 1981 to 1985 the average investment would be about TShs. 1.9 billion per annum.

5.4.5 The rate of investment in industry is at present TShs. 1.3 billion. When 'normal' investment in existing industries is added, total industrial investment will be more than double the present investment rate, which is not likely to be achieved in the near future.

5.4.6 As it was mentioned in earlier chapters, the country's meagre foreign exchange contributed not only to less satisfactory performance of the existing industries but also limited the expansion of industries especially in the manufacturing sector. The country's most important source of foreign financing is through bilateral and multilateral aid and soft loans from foreign countries and international organizations. Table 3:18 indicates that in 1980/81 total

financing to manufacturing sector from major donor countries amounted to only TShs, 360 million. If increased investment in industry is to take place, more foreign assistance especially financial assistance, will be required.

5.5 Project profiles

5.5.1 In order to provide a tangible illustration of the potential for further local resource-based manufacturing a listing of 'project profiles' is given below in tabular form The information in these profiles was obtained from various sources, such as the Ministry of Industries, para-statals and, in particular, previous TISCO studies.

Table 7.2 Project profiles

No.	Name of project	Location and (promoter)	Description of project	Estimated capital investment TShs. million	Quantity to be produced per annum	Turnover per annum TShs. million	Employment No.	Main raw materials	Comments
1.	Agro-based industries								
1.1	Sugar industry	Mtwara (SUDECO)	To produce white sugar for the southern market	250	10,000 tons	100	2,000	Sugar cane farming to be incorporated in the project	Foreign financing required.
		Musoma (SUDECO)	To produce white sugar to supplement demand in the Lake and northern regions	N.A.	60,000 tons	600	3,000	Sugar cane production to be incorporated in the project	Project at pre-feasibility stage
		Ruipa Kilombero (SUDECO)	To produce white sugar to the expanding national market and to export the surplus (if any)	3,300	100,000 tons	1,000	3,000-4,000	Sugar cane production to be incorporated in the project	Foreign financing required.
1.2	Textile industry	Mtwara Textile Mills (TEXCO)	Besides the apparently saturated market of textiles, TEXCO is considering constructing an integrated textile mill in Mtwara to serve the southern regions and for export	1,100	25 million linear metres	460	2,200	Cotton to be supplied locally	Foreign financing required. The location lacks enough basic utilities such as electricity and water
		Cotton hosiery and garments unit (MICO)	To manufacture various type of garments such as gents shirts and trousers, T-shirts, under wear, ladies wear and under garments to be located in Mara region to cater for Lake regional market.	18	350,000 units of various types	17	288	Cloth to be acquired locally	It is a regional project
		Terry towels, handkerchiefs and cotton furfurnishing unit (MICO)	To produce terry towels, curtain materials and handkerchiefs	28	600,000 towels 200,000 metres of curtains and 1.2 metres handkerchiefs	40	172	Locally available	It is a regional project
		bandages, cotton wool and other hygenic materials (MICO)	To produce rolls of cotton dressing, bandages and gauzes	21	1.3 million rolls	8	67	The basic raw materials - cotton, spinning washes and cotton yarn are available locally	It is a regional project
1.3	Sisal industry	Sisal bags Tanga (TSA)	To manufacture sisal bags	17	10 million bags	80	800	Sisal fibre to be available from local sources	A prefeasibility study available
		Sisal paddings/ mattresses Musoma (TSA)	To manufacture rubberized sisal mattresses	N.A.	2,000 tons	N.A.	N.A.	Hedgerow sisal fibre available around lake regions	
1.4	Food processing								
1.4.1	Maize mill	Korogwe (NMC)	To establish maize flour mill in Tanga region so as to reduce transport costs of maize to other milling plants	10	18,000 tons	45	33	Maize to be purchased locally	A full feasibility study exists
1.4.2	Fruit canning	Several localities (SIDO/ Private)	Not specified but furit canning can be done at a small scale through assistance from SIDO etc. depending on availability of raw materials in a specific area.	3	-	-	-	Depending on availability of fruits	

Table 5:2 (continued)

No.	Name of project	Location and (promoter)	Description of project	Estimated capital investment TShs. million
1.4.3	Edible oil	Several localities (SIDO/ Private)	Small edible oil mills may be started on particular localities	10
1.4.4	Coffee/tea processing	Bukoba/Moshi Arusha/Dar (TAT)	Possibility of starting projects to prepare ready made coffee and tea mainly for export.	-
1.5	Forest based projects			
1.5.1	Saw mills	Kagera (Regional Authorities)	Kagera regional authorities are considering to build several saw mills in the region to exploit the existing forest products (logs) in the area. One such saw mill proposed is to be located at Kishanda valley. Simflar ones are planned for Minziro and Biharamalo using mobile saw mills.	7
1.5.2	Furniture factory	Mwanga (District Authorities)	To manufacture various school office and domestic furniture items.	4
2.	Metal working industries			
2.1	Machine tools	Moshi (NDC)	To produce 400 types of machine tools in collaboration with a Bulgarian firm	159
2.2.	Farm implements	Mwanza (NDC)	To produce animal and tractor drawn farming implement	309
2.3	Tranformer and switchgear	Arusha (NDC)	To produce distribution transformer and switchgear	62
2.4	Welding electrode and welding	(NDC)	To produce welding transformer and electrode	25
2.5	Light commercial vehicles	Kibaha/Dar (SMC/NDC)	To assemble CKD vehicles in collaboration with Isuzu of Japan	125
2.6	Tractor	Kibaha (SMC)	Initially to assemble tractor later to manufacture them in collaboration with a foreign company.	325
2.7	Trailer and low loader	Dar es Salaam (NDC)	To expand the present Burns and Blane Co. to manufacture various components in stages.	70

Quantity to be produced per annum	Turnover per annum TShs. million	Employment No.	Main raw materials	Comments
-	-	-	Depending on availability of oilseeds	
-	-	-	Coffee and tea locally available	
1,350 m^3	5	46	Logs to be exploited from surrounding forests	Full feasibility studies exists
4,600 m^3	3	26	Sawn wood to be supplied from neighbouring districts.	Full feasibility study exists.
N.A.	47	436	Initially castings and few other components to be imported later to be supplied from central Foundry and forge plant	The plant is under construction
6,700 tons	100	583	Initially steel and castings will be imported, later to be supplied from central foundry and forge plant	Project under active study
640 units of distribution transformer 130 switchgear	115	330		Project under construction
-	47	74		Project under study
	800	639	CKD Components imported from Japan. 15 per cent materials local	Negotiations underway
1,000 units	450	180	Initially to import CKD later to get castings and forging requirements from proposed central foundry and forge plant.	Negotiations underway with Valmet tractors of Finland
-	120	215	Initially to assemble trailers from imported components later to be manufactured locally.	Negotiations with M/F Vocila Gloriea of Yogoslavia

Table 5.3 (continued)

No.	Name of project	Location and (promoter)	Description of project	Estimated capital investment TShs. million	Quantity to be produced per annum	Turnover per annum TShs. million	Employment No.	Main raw materials	Comments
2.8	Railway wagons	Dar es Salaam (NDC)	To manufacture railway wagons	118	400	195	320	Initially to be imported later to be manufactured locally	A Swedish firm M/S Kockum Ab to participate
2.9	Motor cycles	Dar es Salaam (NDC)	To manufacture motor cycles	52	5,000	53	192	It will start with assembling them later most componen ponents to be manufactured locally.	SMC seeking collaboration with HONDA of Japan
2.10	Heavy structurals boiler shops and crossing	N.A.	Many similar items to be grouped together and produced in an organized unit. The products will be utilized by various sectors in the country	225	-	160	785	Some materials will be imported, others to be available locally.	Foreign technical collaboration required
2.11	Cable and stranded G.L. wire	Dar es Salaam (NDC)	To expand the present Tanzania Cables to meet future demand.	5	-	40	94	From existing mills and imports	Tanzania cables has the technology.
2.12	Diesel engines and pumps	(NDC)	To produce various items like diesel engines, pumps, garage compressors, sewing machines and sealed units.	65	-	55	555	Heavy castings to come from proposed central laundry unit.	Foreign collaboration needed.
2.13	Industrial machinery and light structurals	(NDC)	To produce transmission towers tanks, light material handling machines, cranes, conveyors and small industry	60	-	75	370	Some imported others locally available	Foreign technical assistance needed.
2.14	Expansion of Mang'ula mechanical and machine tool company	Kilombero (NDC)	To expand the existing facility and introduce new product mix so as to utilize the excess capacity available by adding a few matching equipment. Construction machinery, spare parts and technological structure.	39	-	30	676	To be imported, others local	
2.15	Foundry and forge plant	location to be determined by considering main source of raw materials and major centres of market (NDC)	It is necessary to establish a central foundry and forge plant to meet the demand of castings that will be required by the various industries some of which are mentioned in this appendix. This plant will reduce the import content of the various units.	335	-	350	1,650	Sponge iron (iron ore) and coal, to be available if iron and coal deposits are exploited. Scrap iron could also be used. Some other small items will be imported	Technical and financial collaboration required
2.16	Auto components	(SMC/Private)	To manufacture auto components for the present population of auto-mobiles and future addition. A detailed study is required to determine the type and quantity of components to be manufactured.	1,000	-	N.A.	N.A.	To be studied	Foreign collaboration required
2.17	Zonal workshops	In each industrial zone (NDC/private)	Initially 4 zonal workshops are envisaged for repair and produce minor spare parts for various factories.	172	-	-	720	Local from central foundry unit and rolling units	-
2.18	Rural working small units	Various locations (SIDO/ private	There are many small items which can profitably be promoted by SIDO, including those mentioned above especially some auto components and building materials.	Approx. 200	-	-	-	Mainly from central foundry and steel rolling mills, other sources and imports.	

Table 5:2 (continued)

No.	Name of project	Location and (promoter)	Description of project	Estimated capital investment TShs. million	Quantity to be produced per annum	Turnover per annum TShs. million	Employment No.	Main raw materials	Comments
2.19	Building materials	(NDC/Private)	To produce various building items such as steel doors, windows, hardware etc.	109	-	-	-	General foundry and steel rolling units	
2.20	Boat building	(NDC/Private)	To manufacture small fishing vessels so as to improve the fishing industry and repair other vessels.	N.A.	10 boats	-	-	Local and imported	
2.21	Telephone equipment	N.A. (T/Posts and Telecomms)	To produce various telephone equipment	-	-	-	-	-	
3.	Chemical-based industries								
3.1	Sulphur-based	Tanga Dar es Salaam (NCI/Private)	A proposal to start a project to produce sulphuric acid and alum important chemical in water treatment.	60	H_2SO_4 15,000 tons Alum 15,000 tons	60	100	Pyrites, bauxite and sulphuric acid and alumina all locally available	
3.2	Pesticides insecticides	Dar es Salaam Morogoro, Tanga	To manufacture pesticides and insecticides for mainly the agricultural sector	60	5,000	90	60		
3.3	Lime/bleaching powder/precipitated calcium carbonate	Tanga, Dar es Salaam, Arusha	To produce locally those commodities which are used in textile leather - paper, paint and rubber plastics industries	35	Tanga Lime 6,000 B.P. = 3,000 P.C.C. = 3,000		200	Limestone	
3.4	Mini pulp and paper plants	(SIDO)	To start mini pulp and paper plants to serve specific market segments					Several sources such as bagasse, waste paper etc.	To be initiated by SIDO
3.5	Dyes for leather and textiles	Mwanza, Dar es Salaam	To produce some dyes for the leather and textile industry	15	150 tons	10	25	To be studied to determine the least cost materials	
3.6	Alcohol, bakers yeast	Moshi (NCI)	To produce 1,000 tons of bakers yeast 8 million litres of alcohol 250 tons of day yeast and 14,000 tons of vinasses.	250	-	140	146	Sugar molasses to be procured from sugar mills	Project under implementation
3.7	Viscose rayon	Dar es Salaam Tanga, Iringa		150	3,000 tons	100	415	Cotton linters, caustic soda	A prefeasibility study needed
3.8	Refractories	Tanga (Saruji Corporation)	A plant to produce basic bricks and monolithics and aluminocus bricks and monolithics.	450	30,000 tons	192	135	Mali clays and calcinated bauxite local others to be imported.	A full feasibility study is available
3.9	Coal-based chemicals	Mbeya, Tukuyu	To investigate producing a number of chemicals from coal such as ammonia, urea, gasolines, organic chemical explosives, synthetic rubber and phenolic resins					Coal deposits in Mbeya Region	
3.10	Cement	Kilwa, Mwanza, Bukoba	To build a medium size cement plant at Kilwa and several mini cement plant around the lake regions.		Kilwa 60,000 tons			Gypsum deposits exists in several localities	
3.11	Fertilisers	Kilwa	To produce natural gas and ammonia urea	4,000 a/				Natural gas, phosphates soda ash	Under implementation
3.12	Glass	Mwanza, glass container Dar es Salaam sheet glass (SARUVI)	To produce glass containers and sheet glass	460	20,000 tons of salable glass per annum	N.A.		Silica sand, felspar quartz	Under implementation

Source: TISCO, Parastatal Organisations, Ministry of Industries.

a/ Including exploitation of natural gas.

GENERAL ECONOMIC BACKGROUND

Tanganyika and Zanzibar became independent in 1961 and 1963 respectively and in 1964 they jointly formed the United Republic of Tanzania. The territory of Zanzibar includes the islands of Zanzibar and Pemba (see map on page xvii).

Tanzania is a one-party democratic state in which all political activity and functions of state are the responsibility of Chama Cha Mapinduzi (CCM). The Head of State and of Government and the Chairman of CCM is President Julius K. Nyerere.

Tanzania has an area of 945,000 sq.km, of which 59,000 sq.km is made up of lakes and inland waters. There are 800 km of coastline of the Indian Ocean. Zanzibar, somewhat larger than Pemba, is separated from the mainland by a channel 40 km wide at its narrowest point.

The country lies between one and eleven degrees south of the equator and is bordered by Kenya and Uganda to the north, Zaire, Rwanda and Burundi to the west and Zambia, Malawi and Mozambique to the south.

Kiswahili is the national language, although English is widely spoken and often used in official correspondence.

(a) Population

The population estimate for Tanzania 1981 stands at 19.2 million which is about 2 million above the 1978 Census figure assuming the estimated growth rate of 3.3 per cent. Of this figure, the mainland has 18.7 million people and Zanzibar 0.5 million.

Most of the population is settled around the great lakes to the west and north, along the Ocean coast, on the slopes of the high mountains on the Kenyan border and on the southern highlands. The arid central plateau is very sparcely populated and largely unsuitable for agriculture.

Dar es Salaam, the capital, has a population of 900,000 which is over half of the mainland's urban population of 1.6 million. In Zanzibar about

a quarter of the total population is urban. Population density is highest in Dar es Salaam Region about 611.3 per square kilometre. Next are the two Zanzibar islands of Pemba and Zanzibar with average densities of 209.2 and 164.7 per square kilometre. Rukwa, Lindi and Ruvuma are the most sparcely populated regions with only 6.6, 8.0 and 8.9 persons per square kilometre, resepectively. Rukwa and Tabora are, however, among regions with the highest population increases of 63.7 and 62.9 per cent over the 11 years of the last census periods.

(b) Labour force

The total labour force employed in 1980 had reached 550,000 representing an average increase of 8.7 per cent over the previous two years. Of this, agriculture provides over a quarter of the total jobs. The total breakdown is shown in Table A:1.

Table A:1 Employment by economic sector, 1980

Sector	Employment
Agriculture	152,000
Mining	6,000
Industry	89,000
Electricity and water	18,000
Works	50,000
Trade	46,000
Transport and communication	62,000
Finance	11,000
Services	121,000
Total	555,000

Source: Economic Survey 1980.

About 130,000 of these jobs are concentrated in Dar es Salaam followed by Tanga and Morogoro with about 77,000 and 44,000 jobs respectively. Lindi and Mara with around 6,000 and 7,000 jobs have the lowest regional employment figures.

(c) Communications, transport, power and water supply

The total length of roads in the country is estimated at 33,722 km out of which 2,625 km (7 per cent) is bitumenized, 4,909 km (14 per cent) is gravel and the rest 26,188 km (79 per cent) is earth. The main roads run from the main productive areas to the chief ports of Dar es Salaam, Tanga and, to less extent, Mtwara and Lindi. At the moment there are two highways, one starting from the northern town of Arusha to Dar es Salaam 647 km, with a branch to Tanga from Korogwe. The other one is the 960 km Dar es Salaam - Tunduma highway. This road contiunes to Lusaka in Zambia and Beira in Mozambique passing through Salisbury in Zimbabwe. The Dar es Salaam - Arusha road connects to Nairobi, Kenya, through the border town of Namanga.[1/]

At the moment there are major plans to improve the road transport network in the country. The Morogoro-Dodoma highway, 283 km, is being constructed. Also phase one of the ambitious Lake Victoria circuit road programme, i.e. the Musoma-Mwanza section is being constructed. Other major road projects currently being implemented are the laying of bitumen on the Makambako-Songea road, and the Kibiti-Rufiji-Lindi road, both in the south. Plans are underway to put bitumen in the Dodoma-Mwanza road.

Tanzania has two railway systems. Tanzania Railway Corporation (TRC) owns and operates the railway system in the country which formerly formed part of the East African Railways Corporation together with Kenya and Uganda. The major railway line managed by TRC is the central line, which runs from Dar es Salaam to Kigoma, a western border town, a distance of 1,254 km. A branch from Tabora town runs north to the lakeside township of Mwanza. The other line is Dar es Salaam to Arusha, 644 km, with a branch from Korogwe to Tanga.

The second railway system is TAZARA which is owned jointly by Tanzania and Zambia. The TAZARA railway line stretches for a distance of 975 km in

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1/ The Tanzania/Kenya boarder is temporarily closed since February 1977.

Tanzania from Dar es Salaam to Tunduma and continues into Zambia at Kapiri Mposhi where it joins the Zambia Railway system.

Water transport in Tanzania can be divided into three sections:

- Ocean shipping
- Coastal shipping
- Lake transport

Tanzania has five seaports on the Indian Ocean; Dar es Salaam is by far the largest harbour with a capacity to handle 4 million tons dry general cargo, Tanga port 450,000 tons a year and Mtwara 200,000 tons, others are at Zanzibar and Pemba. Most ocean shipping business is carried by foreign shipping lines. However, Tanzania together with China operates a joint shipping company with a fleet of 4 ships (1980). The Government of Zanzibar owns and operates a fleet of several ships.

Coastal shipping is undertaken by a state owned company - TACOSHILI - with a fleet of 3 small ships which sail along the Indian Ocean coastal line from Tanga to Mtwara. There is a limited lake transport. In Lake Victoria, the Government operates three ships and is repairing three others which were formerly under the East African Community. There is also lake transport connections between Tanzania-Malawi and Tanzania-Zaire. On Lake Nyasa, the connection is from Mbamba Bay in Tanzania to Nkhata Bay in Malawi. And on Lake Tanganyika connection is from Kigoma port in Tanzania to Kalemie port in Zaire.

Tanzania has 3 international airports; Dar es Salaam, Kilimanjaro and Zanzibar and there are 35 domestic airports and airstrips. Air Tanzania is the national airline which owns a number of aeroplanes and it operates both domestic and international flights. There are regular weekly flights to all neighbouring countries except Kenya. Several international airlones operate : ights between Tanzania and foreign countries.

As for telecommunications, Tanzania is connected to the rest of the world by earth satellite with links to UK, Italy, India, Japan and Seychelles. All regional headquarters are served by telephone and postal facilities. All district headquarters are served by telephone except a few which use radio calls.

With the completion of phase II of the Kidatu hydroelectric power plant, Tanzania has now a total electric installed capacity of 360 megawatts out of which 68 per cent (280 MW) are hydro and the remaining 32 per cent (119 MW) diesel. The coastal and northern regions of Tanzania i.e. Morogoro, Dar es Salaam, Coast, Tanga, Kilimanjaro, Arusha and Zanzibar are connected by the so called National Grid System with Kidatu as the main source of electricity. Plans are underway to supply the towns of Iringa, Mufindi, Njombe, Mbeya, Dodoma and eventually Tabora and Mwanza with power from Kidatu. A thorough account of the energy resources in the country was given in section 4.10.

96 towns in the country are gazetted to be supplied with piped water throughout the mainland. The Dar es Salaam water supply plant has a capacity to pump 26 mi m^3 of water a day which is estimated to satisfy water requirements in the city up to the year 1985. Implementation of water supply projects in the towns of Tanga, Morogoro, Tabora, Mtwara, Lindi, Mbeya, Moshi, Arusha, Iringa and Mwanza is proceeding well. There is also an ambitious plan to supply clean water to all villages in the country by the year 1990.

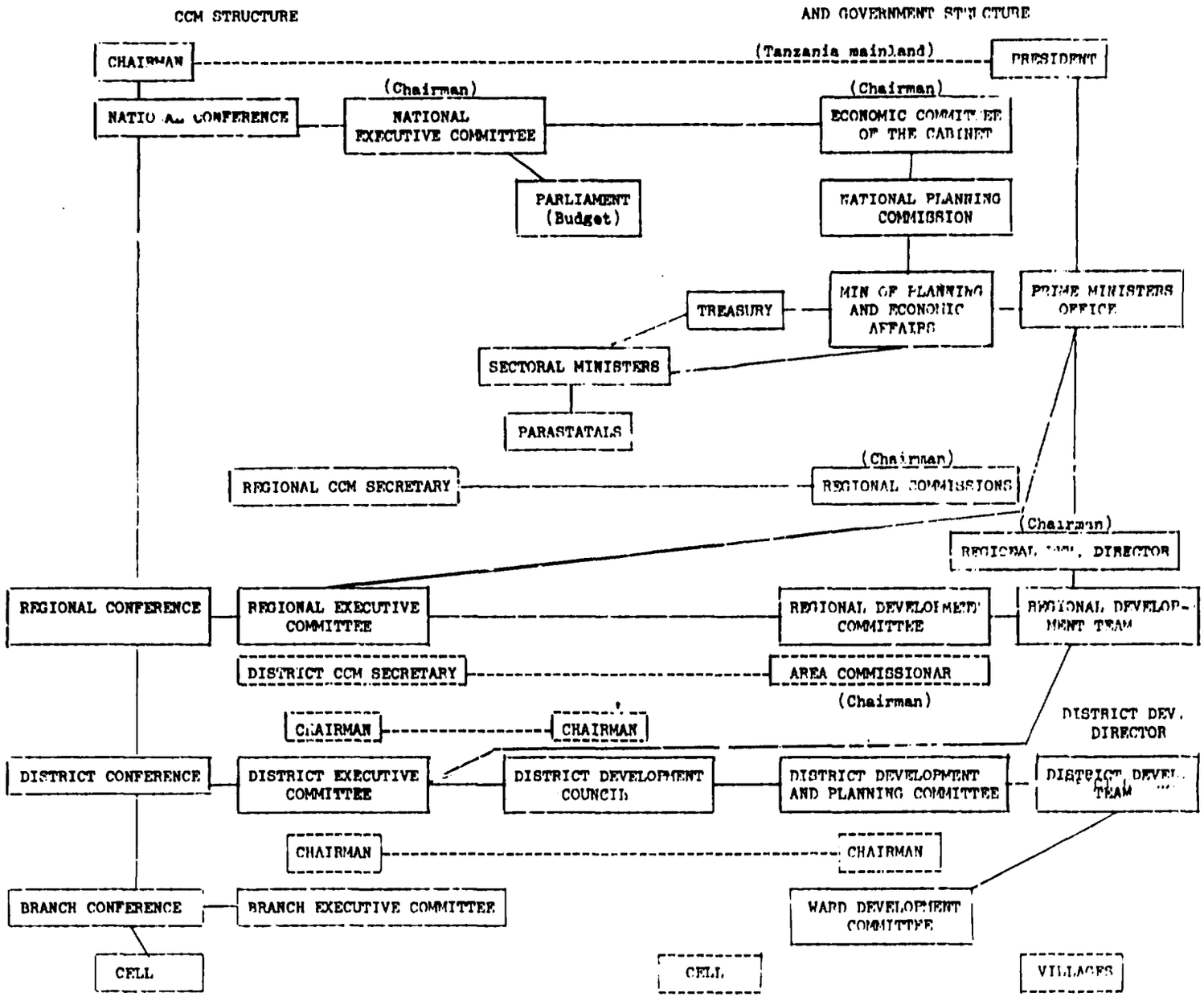
(d) Institutional infrastructure of the Government

Tanzania is a one political party state. The party, Chama Cha Mapinduzi (CCM), was formed through the merger of the then Tanganyika African National Union (TANU) and the Afro-Shirazi parties. According to the Constitution of the United Republic, there are two Governments - The Union Government and the Zanzibar Government. The former is responsible of all government matters pertaining to the mainland and a limited number of union subjects[1/] related to the whole country, while the latter has competence on non-union matters in so far as Zanzibar is concerned.

The executive power of the United Republic is vested in the President who is Head of State and is assisted by a Vice President, and is advised by a Cabinet of Ministers as shown in the organization chart on following page. The ministers are responsible for different sectors of the economy and different government services such as agriculture, industry, transport and trade, minerals and defence. There is also a Parliament with legislative powers.

1/ Union matters are foreign and home affairs, defence, the constitution, citizenship, immigration, currency, certain taxes and duties and foreign banking.

THE PLANNING PROCESS



The country is divided into 25 administrative regions each headed by a Regional Commissioner. Each region is divided in a number of districts. Following the Arusha Declaration in February 1967, which proclaimed the way to build and uphold socialism, a number of parastatal organizations were formed. Some of these are commercial organizations owned by the Government or with majority Government participation and run on commercial principles. However, the term parastatal applies to all institutions owned by the Government including those giving services, and training. Each parastatal operates under a parent ministry. Recently an association of parastatals has been formed (TAPU). Appendix 2:A gives the list of parastatals, their parent ministries, and their major activities.

(e) Gross Domestic Product

In the past decade, Tanzania's economic performance has shown many characteristics which are in common with other developing countries. The overall average growth rate for the period was 4.9 per cent. The 1970s started off with a reasonably high real growth rate of 5.5 per cent average per annum 1970-1972. This was followed by a slight slow-down in 1973-1974 caused partly by world recession and partly by adverse weather conditions. Since agriculture contributes about 55 per cent of the total GDP the implications for the growth rate were obvious. Some slight recovery followed in 1976 and 1977 (average 5.6 per cent). It was mainly due to the coffee boom which resulted from crop failure in Brazil. Starting from the last quarter of 1978 the growth rate has declined slightly again for various reasons like the fall again in coffee prices, a further oil price adjustment and the war in Uganda. Oil along absorbed one third of the export earnings in 1979 and almost half in 1980. To this could also be added the world inflation and consequently increased prices of major foreign inputs to the Tanzanian economy. This has brought about a serious foreign exchange shortage, which is greatly hampering the ability to purchase the necessary industrial and other requirments.

Along with the balance of payments problem the recent years have also been characterized by budgetary difficulties. The Government was forced to finance its large expenditures by resorting to heavy bank borrowing. As a result money supply has expanded at a rate faster than the planned rate, and the pressure on the level of domestic prices has tended to grow.

In the following sections of this appendix comment on recent trends in Tanzania's growth performance, capital formation and savings, prices and demand, external trade and balance of payments, and the performance of important sectors of the economy is given. As a background for this analysis Table A:2 depicts the real Gross Domestic Product by sectoral origin over the 1970-1980 period.

During the years 1970 through 1978 the real Gross Domestic Product grew at an average annual rate of 5.6 per cent. When this rate is compared to the annual population growth rate of 3.3 per cent a significant increase in the real per capita income is noted. It may be worthwhile to mention, however, that the major contributors to this growth were subsistance production and the services sector; mainly administration and commerce. The increase in output in the monetary economy's directly productive sectors either did not reach the Third Five-Year Plan (TFYP) target or registered a decline. Table A:3 gives the GDP performance, by sectors, for the 1976-80 period.

In the agricultural sector, total production increased at an average rate of 7.9 per cent per annum during the years 1976-1979. While subsistance output grew at an average rate of 10.2 per cent; monetary agriculture grew at an average rate of 5.3 per cent. While there was faitly improved food production compared to the early 1970s, the performance of cash crops, especially export crops was sluggish, aggravating the foreign exchange problems. The problems of export crops production were noted in Chapter IV, but suffice is to say here that different combinations of inputs and incentives for farmers are still being tried for different crops with the aim of raising the level of production for the different crops.

In the manufacturing sector, which was discussed in detail in Chapter III, the annual average growth rate for the period 1976-78 was 4 per cent followed by a decline of 5.2 and 13.2 per cent in 1979 and 1980 respectively. Real production in 1980 was therefore less than in 1976. The target in the Third Five-Year Plan was an annual growth rate of 9.3 per cent. The major problems in this sector, besides the common managerial problems, have been frequent disruptions of water supply and electricity and inadequate supply of inputs such as raw materials and spares. The major factor causing the latter problems was the foreign exchange constraint.

Table A:2 Gross domestic product by sectoral origin, 1970-1980

(TShs. million at constant 1966 prices)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
1. Agriculture, hunting, forestry and fishing	1,589	1,504	1,600	1,611	1,537	1,567	1,722	1,792	1,813	1,917	2,154
2. Mining and quarrying	97	152	119	91	88	73	70	74	45	59	66
3. Manufacturing and handicrafts	716	784	850	888	900	903	961	1,002	1,036	982	893
4. Electricity and water supply	92	96	106	114	127	139	142	149	150	166	195
5. Construction	270	322	342	357	350	328	294	288	225	296	385
6. Commerce	984	972	990	1,039	1,068	1,074	1,092	1,162	1,284	1,361	1,238
7. Communication and transport	729	814	809	905	958	997	1,034	1,066	1,126	1,136	1,238
8. Finance	257	279	295	316	361	357	359	373	383	391	447
9. Public administration	866	952	1,071	1,157	1,362	1,581	1,684	1,781	1,903	1,964	2,468
10. Less imputed bank charges	99	115	124	137	140	143	134	138	147	154	172
11. Monetary GDP at factor cost	5,699	5,990	6,306	6,615	6,891	7,162	7,492	7,815	8,112	8,426	8,778
12. Annual growth rate of monetary GDP	7.7	5.1	5.3	4.9	4.2	3.9	4.6	4.3	3.8	3.9	4.2
Subsistence production											
13. Agriculture, hunting, forestry and fishing	1,616	1,644	1,805	1,833	1,799	2,029	2,266	2,452	2,742	2,006	2,989
14. Construction	57	58	60	61	63	64	66	64	68	71	73
15. Owner occupied dwellings	506	521	536	551	568	584	602	608	619	639	676
16. Total subsistence production	2,179	2,223	2,401	2,445	2,430	2,677	2,934	3,124	3,434	3,716	3,738
17. Annual rate of growth	2.0	4.6	8.0	1.8	-0.6	10.2	9.6	6.5	9.9	8.2	0.6
18. Total GDP	7,878	8,213	8,707	9,060	9,321	9,839	10,426	10,939	11,546	12,142	12,516
19. Annual rate of growth	5.8	4.3	6.0	4.1	2.9	5.6	6.0	4.9	5.5	5.2	3.1

Source: Economic Survey, 1980

Table A:3 GDP growth rates, 1976-80

(at constant 1966 prices)

	1976	1977	1978	1979	Average	TFYP target	1980
GDP (total)	5.4	5.9	5.6	5.1	5.5	6.0	3.6
Monetary	5.2	4.1	3.8	3.7	4.2	6.75	1.5
Subsistance	9.6	6.5	9.9	8.2	8.5	3.9	8.8
1. Agriculture (total)	9.8	7.5	7.4	7.9	7.9	5.1	2.4
Monetary	9.8	4.1	1.2	5.7	5.2	n.a.	n.a.
Subsistance	11.7	8.2	12.2	9.4	10.2	n.a.	n.a.
2. Mining	4.1	8.6	-29.7	31.1	2.8	9.3	8.2
3. Manufacturing	6.0	4.7	3.4	-5.2	0.5	9.3	-13.2
4. Electricity and water	1.4	4.7	6.0	5.1	4.6	10.3	11.4
5. Construction	10.2	0.0	-16.8	25.2	4.7	6.4	7.0
6. Transport and communication	3.0	3.8	5.6	0.9	3.3	6.5	8.9
7. Commerce	0.3	7.9	10.4	6.0	6.2	n.a.	-1.6
8. Finance and insurance	1.7	2.5	2.1	2.8	2.3	5.6	3.7
9. Public administration	15.8	16.7	6.9	3.2	10.6	n.a.	4.8

Source Calculations based on figures in Economic Survey and Third Five-Year Plan.

Output in the mining sector fell by 15.7 per cent from 1976 to 1979. The major reasons for the decline have been reduced recovery of some minerals. The falling prices of a number of minerals, especially gemstones, have also contributed to the decline in earnings from mineral exports.

Performance in the economic infrastructure sector was also below Third Five-Year Plan targets. The average growth rate for water and electricity supply was 5.4 per cent while that for the transport and communications sector was 3.2 per cent. The transport sector was affected by the inadequate number of trucks especially for the rural sector where the demand was growing rapidly. Poor roads reduced the lifespan of motor vehicles at the time when spares and other maintenance facilities were severely hit by shortage of foreign exchange. In fact, capital formation in the transport sector for 1977-79 was lower than that attained over the period 1974-76. The construction sector was affected by the poor performance experienced in

the industrial sector was negative 1976-78 and it regained its 1976 value only in 1979; resulting in an average growth of 4.7 per cent per annum in its contribution to GDP. The major problem areas were inadequacy of trained and skilled manpower, inadequate supply of inputs (cement, timber, etc.) and poor distribution.

(f) Domestic demand

Private expenditure continues to form the major domestic demand although its percentage share is declining. An analysis of the development of public and private expenditure and savings are made in Table A:4.

The Tanzanian consumer buys a group of basic goods required by all citizens (urban workers or farmers);

Maize and maize meal
Wheat and rice (in urban area)
Edible oil
Sugar and salt
Beer and soft drinks
Tea
Meat
Cotton textiles (khanga and kitenge)
Footwear
Cigarettes
Matches
Agricultural implements
Cement
Galvanized sheets

Most of these commodities are not at present readily available at controlled prices throughout the country. The most serious shortages are for sugar, edible oils, certain types of cotton textiles, and building materials (given low capacity utilization and transport constraints). There are also irregular supplies of beer.

The expenditures on food, beverages and tobacco continue to form the biggest component of private consumption - about 50 per cent of total. The percentage has actually been rising as shown in Table A:5 in respect of selected years up to 1975.

Table A:4 National disposable income and its appropriation, 1966-79

(TShs. millions in current prices)

	1966	% share	1972	% share	1976	% share	1978	% share	1980	% share
Disposable income	6,531	100	10,488	100	22,656	100	33,338	100	37,482	100
Government expenditure	725	11	1,494	14	2,989	13	5,585	17	5,956	16
Private expenditure	5,288	81	8,118	78	15,324	68	25,873	78	28,782	77
Saving	691	11	1,171	11	3,500	15	1,800	5	2,744	7
Statistical discrepancy	-173	-3	-295	-3	843	4	80	0.2	-	-

Source: National Accounts of Tanzania 1966-1976 and Bureau of Statistics

Table A:5 Private consumption: Relative expenditure on food, beverages and tobacco, 1966-75

Year	Percentage expenditure of private consumption on food, beverage and tobacco
1966	46.3
1967	48.4
1970	49.1
1973	49.0
1975	56.0

The household budget survey for 1969 gives a glimpse of the urban/rural distribution of the domestic market, as shown in Tables A:6 and A:7.

Table A:6 The distribution of households by annual cash income, 1969

Cash income (TSh.p.a.)	Rural	Urban	Combined
0 - 1,999	88.3	20.5	84.6
2,000 - 9,999	11.4	64.5	14.3
10,000 - above	0.3	15.0	1.1
	100.0	100.0	100.0

Table A:7 The distribution of income earners by annual cash income, 1969

Cash income group (TSh. p.a.)	Rural	Urban	Combined
0 - 1,999	93.5	38.7	90.7
2,000 - 9,999	6.3	50.3	8.6
10,000 - above	0.2	11.0	0.7
	100.0	100.0	100.0

The above figures help to give an indication that by and large the domestic market is very much greater in the urban areas than in the rural areas. However, high inflation from 1978 onwards as a result of war distertions, drought, crop failures and the oil price adjustments have severely restricted consumer goods final demand. Even affluent consumers are now severely squeezed by inflation in the price of basic commodities (all project to price control) and the fuel cost for those owning cars.

The high inflation has had a severe impact on reducing real wages from 1970 to 1980 as calculated by the Bank of Tanzania (Table A:8).

Table A:8 National and Dar es Salaam price indices, 1970-1980

Year	National consumer price index	Dar es Salaam wage earners price index
1970	100	100
1975	188	243
1978	251	404
1979	284	422
1980	330 (est.)	470 (est.)

Source: Bank of Tanzania

The most reliable calculations of real wages are those for the manufacturing sector (Table A:9).

Real wages have fallen by about 35 per cent from 1973 to 1980 according to the National Consumer Price Index and by 45-50 per cent if measured against the Dar es Salaam Price Index. Overall, real wages in Tanzania for

Table A:9 Average wage per employee in manufacturing industry, 1973-1980

Year	Current prices	1973 prices
1973	4,972	4,972
1978	7,761	3,932
1979	7,557	3,342
1980	8,100 (est.)	3,100 (est.)

Source: Economic Surveys.

all consumers have fallen by 25 to 30 per cent since 1973 and the consumer budgets for non-oil and other non basic consumer goods have fallen by 40 to 50 per cent thus reducing the potential for consumer goods manufacturing.

(g) Domestic capital formation

There was an impressive increase in capital formation between 1969 and 1971. After the peak in 1971 in the rate of capital formation it remained at a generally higher level than had been the case before 1970 and 1971. This is indicated by the figures in Table A:10. For this study most of the interest was in fixed capital formation; in fact most of the fluctuations in capital formation were on account of fixed capital formation (see Table A:11). However, inventory behaviour was not entirely stable, ranging between (0.8 per cent and 3.0 per cent) of GDP over the 1970s. In certain years up to 50 per cent of inventory movements were in the form of increased cattle stocks in the subsistance economy. The large increase in inventories in 1974 was primarily attributable to the parastatal sector, where, in addition to an increase of some TShs. 286 million in commercial inventories, the parastatal manufacturint sector experienced a very substantial increase in stocks of TShs. 200 million. It was likely that much of this increase reflected the very sharp price changes in imported goods that occurred in 1974, rather than volume increases.

Within the category of fixed capital formation it seems legitimate to draw a further distinction between fixed capital formation in the monetary sector and in the non-monetary sector, on the grounds that the latter is largely (but not wholly) beyond the influence of policy.

Table A:10 Domestic capital formation , 1970-80

(TShs. million)

Item	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
At current prices											
Gross capital formation	2,067	2,592	2,438	2,760	3,515	4,004	4,604	5,641	6,573	7,909	8,758
Gross capital formation (monetary)	1,879	2,392	2,207	2,510	3,250	3,753	4,326	5,326	6,210	7,489	8.200
Saving	1,215	1,162	1,171	970	798	1,309	3,500	3,957	1,880	2,744	
At 1966 prices											
Gross capital formation	1,821	2,175	1,748	1,809	2,061	1,894	2,034	2,157	2,239	2,640	2,509
Gross capital formation (monetary)	1,650	2,000	1,560	1,614	1,870	1,697	1,831	1,947	2,023	2,417	2,299
Indices (1966 = 100)											
At current prices											
Gross capital formation	189.3	237.4	223.3	252.7	321.9	366.7	421.6	516.6	601.9	724.3	802.1
Gross capital formation (monetary)	206.5	262.9	242.5	265.8	357.0	412.4	475.4	585.3	682.4	823.0	901.2
At 1966 prices											
Gross capital formation	166.8	199.2	160.1	165.7	188.7	173.4	186.3	197.5	205.0	241.8	229.8
Gross capital formation (monetary)	181.3	219.8	171.4	177.4	205.5	185.5	201.2	214.0	222.3	265.6	252.6

Source: National Accounts of Tanzania 1966-1976. Economic Survey for 1979-80.

Table A:11 Fixed and gross capital formation by industry, 1970-79

(Tshs. million at current prices)

Item	1970	1971	1972	1973	1974	1975	1976	1977[a/]	1978[a/]	1979[a/]
1. Agriculture	117	142	154	163	180	234	335	325	382	472
2. Mining	31	49	35	40	41	48	55	72	85	105
3. Manufacturing	319	319	258	308	473	636	1,024	866	1,019	1,259
4. Construction	77	59	39	61	64	82	140	118	140	172
5. Electricity and water supply	119	194	231	285	575	498	428	836	983	1,214
6. Wholesale and retail trade	54	58	31	46	53	72	76	98	115	143
7. Transport and communications	756	1,158	1,171	1,232	995	1,184	1,273	1,713	2,014	2,488
8. Government administration	83	60	56	62	101	144	196	196	231	285
9. Service (incl. real estate)	176	197	213	211	334	391	495	568	667	824
10. Own-account rural construction	146	156	176	192	216	251	277	366	431	532
11. Fixed capital formation	1,878	2,372	2,364	2,600	3,032	3,540	4,299	5,158	6,067	7,494
12. Increase in stocks	189	215	75	160	434	464	305	483	506	415
13. Gross capital formation	2,067	2,587	2,439	2,760	3,466	4,004	4,604	5,641	6,573	7,907

Source: National Accounts of Tanzania 1966-1976, and Bureau of Statistics.

a/ Figures for 1977, 1978 and 1979 are estimates only.

Between 1969 and 1973 practically all of the dynamism in monetary fixed capital formation was the result of public sector investment, with private monetary investment playing a stable and relatively minor role. However, from 1974-1975 the relative shares of public and private sectors in gross monetary capital formation demonstrated a rather unexpected reversal of previous trends. From 1977 private capital formation exceeded the public sector's and remained so through 1979. It is difficult to be entirely sure why. These were the years in which there was no statistical discrepancy between the product and expenditure estimates of GDP. Perhaps private monetary capital formation had been computed as a residual. The available statistics show that there was significant increases in private capital formation in the years 1976-1978.

Much detailed information does not exist on the nature of private sector monetary fixed capital formation. Presumably the bulk of it consists of residential construction, small retail business expansion, on-farm investment in the more developed agricultural regions of the country, and investment in transport equipment by independent transport operators. Within the public sector somewhat more information is available on the major spending agencies. Table A:12 presents the available figures.

A significant increase in parastatal investments followed the Arusha Declaration in 1967 and a spate of nationalization accompanied it. Private sector investment appears to have been only slightly affected by the Arusha Declaration, at least immediately.

The period 1970-1973 was strongly marked by the scale of outlay on the Tazara railway project. It should be noted, however, that investment by other parastatals was also high in this period, with major emphasis on investment in manufacturing and electricity. Including Tazara, the parastatal sector became the major force in public sector investment, accounting for 50 per cent of the total. Central government direct investment remained relatively static as well as private monetary investment which decreased in relative importance.

From 1974 the prominence of the parastatals in public sector investment started to erode while central government investment reasserted its former importance. As it was noted above the private sector investment has shown the most striking increases and has exceeded public investment in the years 1977-79.

Table A:12 Capital formation by public and private sectors, 1970-80

(TShs. million at current prices)

Item	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Central Government	426	408	335	481	708	842	966	1,195	1,548	2,202	2,542
Local authorities and East African Community	36	46	56	3	59	75	113	69	11	18	18
E.A. Community enterprises	115	132	136	148	144	179	179	137	-	-	-
Parastatal enterprises	659	1,084	1,116	1,152	1,096	1,098	970	944	1,103	1,313	1,796
1. Total public sector fixed capital formation	1,236	1,670	1,693	1,874	2,057	2,194	2,228	2,395	2,662	3,533	4,356
2. Total private sector fixed capital formation	642	702	671	776	975	1,346	2,071	2,763	3,405	3,961	3,775
Monetary sector	472	525	469	556	735	1,070	1,925	2,421	3,013	3,511	3,281
Non-monetary sector	170	171	202	220	240	276	303	342	392	450	494
3. Total fixed capital formation	1,878	2,372	2,364	2,600	3,032	3,540	4,299	5,158	6,067	7,494	8,131
4. Increase in stocks	189	215	75	160	434	464	305	483	506	415	627
5. Total capital formation	2,067	2,589	2,439	2,760	3,466	4,004	4,604	5,641	6,573	7,909	8,758
(1) as % of (3)	65.8	70.4	71.6	72.2	67.8	62.0	51.8	46.4	43.9	47.1	53.6

Source: Bureau of Statistics. Economic Survey 1978/79; 1979/80; 1980.

Since no sectoral break down of central government fixed capital formation was available no precise statement can be made on the sectoral tendencies in aggregate public sector fixed capital formation. From the functional classification of the Development Budget it appears as though most central government fixed capital formation has been in roads, bridges and in water supply. Within the parastatals the major sectors have been manufacturing, electricity and transport. The major thrust of public sector investment over the past decade therefore has been on infrastructure, particularly transport infrastructure and electric power generation.

Up until 1970 the impressive record in increasing aggregate investment was matched by similar success in raising the rate of aggregate savings. Between 1965 and 1970 the rate of gross domestic savings to GDP rose from 15.5 per cent to 18.1 per cent. But in 1970-75 the savings performance clearly faltered and this took place even before the onset of the 1974-75 drought-cum-terms-of-trade crisis, which reduced export savings aggregate to historic lows. In 1976 and 1977 there was, however, a dramatic recovery in savings (Table A:13):

It is instructive to examine the evolution of shares of foreign and national savings in financing gross domestic capital formation. Table A:14 reveals that even during periods of rising national savings performance, the role of foreign savings was increasing, indicating a growing willingness to bolster the enviable record on aggregate investment through reliance on external resource transfers. Thus, while gross national savings financed over 90 per cent of capital formation in 1967-69, by 1971 it was financing only 65 per cent. And in the crisis years of 1974 and 1975, the share of national savings was only 38 per cent. In 1976 a dramatic change took place, however, and national savings rose to 88 per cent of gross capital formation. This was caused by an almost threefold increase in the value of private sector savings in 1976 and in 1977 by a just as sharp increase in public sector savings.

From 1978, however, both public and private sector savings returned to average levels of the 1970s and the increases in capital formation were then financed by substantial increases in foreign contributions. In 1978 foreign sources contributed 71 per cent of gross capital formation and in 1979, 64 per cent.

Table A:13 Gross national saving by sector, 1970-79

(TShs. million at current prices)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Gross national saving	1,635	1,676	1,813	1,799	1,319	1,527	4,034	4,155	1,906	2,845
1.1 Gross monetary saving	1,447	1,476	1,582	1,549	1,053	1,276	3,757	3,840	1,543	2,425
Private monetary saving	1,123	1,134	1,148	965	655	1,234	3,290	2,505	1,037	1,757
Net private monetary saving	722	708	680	265	27	557	2,554	1,655	87	662
Private capital consumption allowance[a/]	401	426	468	700	628	677	736	850	950	1,095
Gross public saving	324	342	434	584	398	42	467	1,335	506	668
Government net saving	92	30	60	83	-107	-639	-356	236	-875	-1,022
Central government[b/]	28	-22	34	57	-142	-699	-450	195	-878	-1,025
Local government[c/]	40	18	-11	-	-	-	-	..	-	-
E.A.C. (General Fund)	5	20	24	14	23	52	90	48	-	-
Non-profit making bodies	19	14	14	12	12	8	4	3	3	3
Parastatal saving	232	312	374	501	505	681	823	1,099	1,381	1,690
Retained profit	121	183	230	329	299	451	561	789	1,033	1,300
Capital consumption allowance	111	129	144	172	206	230	262	310	348	390[d/]
1.2 Gross subsistance saving	188	200	231	250	266	251	277	315	363	420

Source: National Accounts of Tanzania, 1966-76; Analysis of Accounts of Parastatals, 1966-1976. Information provided by the Bureau of Statistics, and our computations.

a/ National capital consumption allowance less parastatal capital consumption allowance

b/ Includes government departmental undertakings and after 1972, regional administration

c/ Local authorities before absorption into the central government

d/ Estimate.

Table A:14 Financing of capital formation by national and foreign savings, 1970-1979

(TShs. million at current prices)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Gross capital formation	2,067	2,589	2,439	2,760	3,466	4,004	4,604	5,641	6,573	7,909
Financed by:										
I. Gross national saving of which	1,635	1,676	1,813	1,799	1,319	1,527	4,034	4,155	1,906	2,845
(a) Public sector	324	342	434	584	398	42	467	1,335	506	683
(b) Private sector	1,123	1,134	1,148	965	655	1,234	3,290	2,505	1,037	1,757
(c) Non-monetary	188	200	231	250	266	251	277	315	363	420
II. Net foreign transfers	92	41	-30	35	323	689	464	962	1,272	1,384
III. Other foreign savings[a/]	340	872	656	926	1,824	1,788	106	524	3,395	3,680
IV, Total foreign (II + III)	432	913	626	961	2,147	2,477	570	1,486	4,667	5,064

Source: National Accounts of Tanzania, 1966-1976; Analysis of Accounts of Parastatals, 1966-1976, data provided by the Bureau of Statistics and from computations

(h) Balance of payments and external trade

Tanzania has in 1981 been facing a severe balance of payments crisis. This crisis can primarily be attributed to a combination of three interlocking forces:

(1) The very sizeable adjustments in oil products prices from the end of 1978 to January 1981.

(2) Falling exports in volume terms of traditional cash crops, which make up 75-80 per cent of the exports, plus falling coffee and tea prices in 1980-81.

(3) The extremely limited foreign exchange available for importation of raw material inputs and spares, especially since much of the aid inflow are project linked or tied.

The three factors have been imposed on an economy already affected by drought and the immense costs of the Uganda war problems in 1978 and 1979. The developments of the external trade and the balance of payments in the 1970s are given in Table A:15 The gaps have been filled by drawing on reserves, suppliers credit arrangements, and finally through an IMF standby credit to supplement aid inflows now under discussion.

The forecast on the balance of payments for 1981 is included in Table A:15. From the table it can be seen that during 1981 Tanzania's balance of payments is expected to continue operating under severe pressure. In terms of magnitude, however, the overall balance is projected to register a deficit of TShs. 100 million, which is a considerable improvement compared to the previous years. Under the existing conditions, with the country's foreign reserves more or less depleted, the implication of this balance of payments gap, as reflected in the overall deficit, is that either additional resources have to be found or it will become necessary to tighten the level of imports further. The later alternative will make it extremely difficult, to sustain economic activity especially in the industrial sector. On the basis of import allocation for the first half of 1981, total imports for calendar year 1981 are expected to reach TShs. 9 billion.

In 1980, an agreement was made with the IMF for Compensatory Financing Facility and Stand-by Arrangment equivalent together to TShs. 2 billion to be available over the following two years. In addition, a Structural Adjustment Credit is being negotiated with the IBRD to be extended over the next five years. Table A:16 shows the external payments position in more detail for the years 1978-80 and estimates for 1981. External public debt is shown in Table A:17 indicating the total disbursed and undisbursed credits to central government and the parastatals.

Table A:15 External trade and balance of payment, 1970-81

(Value in TShs. million)

Item	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980 a/	1981 a/
Goods												
Export FOB	1,811	1,871	2,259	2,553	2,851	2,788	4,108	4,464	3,671	4,249	5,037	4,500
Imports CIF	2,359	2,835	2,933	3,533	5,303	5,728	5,355	6,161	8,798	8,962	10,403	9,000
Trade balance	(549)	(964)	(695)	(980)	(2,452)	(2,940)	(1,247)	(1,697)	(5,127)	(4,713)	(5,366)	(4,500)
Current account balance	(250)	(714)	(409)	(755)	(1,919)	(1,700)	(347)	(579)	(3,645)	(2,960)	(3,691)	(2,700)
Net external capital inflow	294	857	916	1,005	896	1,539	569	1,571	1,699	2,275	2,562	2,600
Balance of payment	44	143	507	250	(1,023)	(161)	222	992	(1,946)	(685)	(1,129)	(100)

Source: National Accounts of Tanzania 1966-1976, Annual Trade Report 1970-78, and Bank of Tanzania Economic and Operational Reports 1970-80 and estimates.

a/ Provisional or forecast

( ) = negative balance

Table A:16 Balance of payments, 1978-1981

(TShs. million)

	1978	1979	1980	1981[a/]
Imports	8,798	8,962	10,403	9,000
Exports	3,671	4,249	5,037	4,500
Services (net)	210	306	95	100
Transfers net (Parastatal and private)	1,272	1,447	1,580	1,700
Current account	-3,645	-2,960	-3,691	-2,700
Financed as under:				
1. Government development aid:				
Grants				
Import support (grants)				
Government loans	765	1,163	1,065	1,300
Import support (loans)				
Compensation payments	-36	-26	30	30
2. Parastatal loans	378	240	279	322
3. Private loans	-58	3	5	3
4. Suppliers credit (net)				
5. Other capital movements (net)	-35	-76	-40	-40
6. Exceptional financing[b/]	125			
7. Allocation of SDRs	-	61	61	61
Net errors and commissions	559	773	-	-
Overall balance	-1,947	-685	-1,129	-1,024
Change in net foreign assets (- increase)				
Change in payment arrears (- increase)	481	850		

Source: Bank of Tanzania and estimates (a)

b/ Includes IMF credit and OPEC Fund

Table A: 17 External public debt for central government and parastatals, 1970-79

(in US dollars million)

Year	Disbursed only	Including undisbursed
1970	236	601
1972	370	711
1973	464	844
1974	620	1,135
1975	798	1,217
1976	908	1,424
1977	1,079	1,622
1978	1,095	1,680
1979	1,153	1,836

Source: World Debt Tables, Vol. II, External Public Debt of 96 Developing Countries by the World Bank, 31 October 1980.

The overall trade balance is even more unsatisfactory than the balance of payments. Tentative figures for 1980 indicate that the gap between exports and imports is increasing significantly. Table A:18 shows the figures in US dollars for the trade balance in 1979 and estimated balances for 1980-81. Main capital movements are also included to give an indication as to how the trade gaps are offsetted.

Tanzania presently imports approximately one million tons of crude oil and oil products. The volume and value figures are given in Table A:19.

The tenfold increase in the value of oil imports at current prices is further aggrevated by the slowly growing exports. The percentage of exports required to finance oil imports has risen continuously as the Table A:20 indicates.

Table A:18 Trade balance and balance of payments, 1979-81

(in US dollars million)

	1979	1980	1981
Exports	522	619	550
Imports	-1,101	-1,278	-1,100
Trade balance	-579	-659	-550
Services and transfers (net)	215	206	230
Government aid	140	135	140
Parastatal and private loans and suppliers			
Credits (net)	30	35	30
Other financing (net)	15	145	140
Net errors and commissions	95	-	-
Overall balance	-84	-138	-10

Source: Bank of Tanzania and estimates.

Table A:19 Oil imports, 1970-1981

(Volume in '000 tons value in US $ million current prices)

Year	Crude oil		Oil product		Total value
	volume	value		value	
1970	400	10	200	20	30
1978	600	50	250	55	105
1979	570	94	275	80	174
1980[a/]	700	160	240	105	265
1981[a/]	700	190	300	150	340

Source: Bank of Tanzania and estimates

a/ Estimates.

Table A:20 Oil imports as a percentage of export receipt, 1970-81

(US $ million)

Year	All exports	Oil imports	Share in %
1970	230	30	12
1978	450	105	22
1979	540	174	32
1980	520	265	46
1981	550	340[a/]	62[a/]

a/ Estimates.

According to a study by TISCO[1/] made in early 1980 the total value of all imports related to the internal combustion engine, i.e. imports of oil engines, vehicles, spare parts, etc., calculated for 1978, was found to be approximately equal to the total value of export receipts for that year. Table A:21 and A:22 give the value of the major import and export items for the period 1971-1980.

Terms of trade, as seen in Table A:23, recovered slightly in 1972 from a decline since 1967, but the decline continued drastically after 1972.

(i) Main economic sectors and their share in the GDP

The evaluation of the structure of the Gross Product is presented in Tables A:24 and A:25 which show the GDP at factor cost by industrial origin since 1966. Some features merit comment. The share of agriculture (at current prices) declined up to 1975 there after it started to rise again, reflecting partly the price development of major cash crops.

The manufacturing sector's share of GDP has shown a pattern in the opposite direction from that of the agriculture sector. A steady increase from 8.1 per cent in 1966 to 11.4 per cent in 1972 was followed by a just as steady decline up to 1980 when its share was just about back to its 1968 value of 9.0 per cent. This reflects the poor performance of the manufacturing sector since the first oil price adjustment which led to severe capacity under-utilization. This was discussed in detail in Chapter III.

1/ TISCO Report: Tanzania's Import Profile, 1980.

Table A: 21 Value of domestic exports, 1971-80

(TShs. million in current prices)

Principal commodities	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Coffee (unroasted)	227	383.0	495.3	375.1	483.0	1,281.0	1,870.3	1,295	1,211	1,119
Raw cotton	245	336.4	333.1	472.6	296.7	613.4	542.3	420	492	359
Sisal	134	144.8	221.6	221.3	302.4	239.7	227.7	218	258	246
Diamonds	209	123.3[a/]	164.4[a/]	122.3[a/]	178.0[a/]	159.1[a/]	151.3[a/]	228	268	114
Cahsewnuts (raw)	120	150.3	141.2	196.2	176.9	131.1	187.7	101	145	124
Petroleum products	143	215.5	86.9	129.8	139.9	172.9	133.6	106	136	199
Cloves	179	240.3	233.3	88.09	320.9	260.6	244.0	60	294	299
Tobacco unmanufactured	43	49.0	55.5	87.7	81.3	187.9	206.2	221	149	99
Tea	49	153.8	45.2	69.1	81.2	134.5	179.9	168	164	182
Meat and meat preparations	38	24.2	18.2	45.4	14.1	17.5	14.2	3	-	4
Other commodities	348	289.4	428.8	502.2	474.3	616.6	681.5	752	1,196	1,404
Total	1,735	2,110.0	2,232.6	2,551.7	474.3	3,814.1	4,438.7	3,632	4,283	4,070

Source: Economic Survey 1979-80 and 1980.

a/ Value based on actual sales in London rather than on shipments.

Table A:22 Value of imports, 1971-80

(TShs. million in current prices)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Food	223	370	342	1,153	1,111	591	687	604	461	1,328
Petroleum and petroleum products	256	298	395	642	676	1,007	853	968	1,081	2,117
Machinery	623	582	624	793	1,129	1,217	1,593	2,386	2,968	2,371
Transport equipment	373	312	399	511	624	572	704	1,178	1,621	1,158
Intermediate goods and raw materials	803	839	1,060	1,442	1,279	1,274	1,388	1,850	2,084	1,641
Other consumer goods	449	478	460	460	835	760	975	1,132	1,359	1,432
Total	2,727	2,879	3,280	5,376	5,694	5,421	6,200	8,118	9,574	10,047

Source: Annual Economic Surveys

Table A: 23 Terms of trade, 1964-75

(1966 = 100)

	Goods	Goods and non-factor services
1964	110.6	109.6
1965	101.0	100.8
1966	100.0	100.0
1967	93.5	93.8
1968	98.7	99.0
1969	95.9	96.9
1970	97.9	99.7
1971	94.5	97.5
1972	103.4	104.0
1973	91.9	94.3
1974	84.9	85.4
1975	79.4	78.4

Source: East African Statistical Department, Bank of Tanzania and IBRD Mission estimates. Recent figures were not available.

Mining and quarrying has shown a decline for the period as a whole. Its share is down from 2.9 per cent in 1966 to only 0.7 per cent in 1980.

Table A:24 Gross domestic product at factor cost by industrial origin, 1966-81

(Percentage shares at constant 1966 prices)

Items	1966	1968	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Monetary sector													
Agriculture, hunting, forestry and fishing	45.3	43.2	41.7	39.6	40.1	39.6	36.7	37.7	39.2	39.8	40.5	41.6	41.1
Mining and quarrying	2.9	1.9	1.3	1.9	1.4	1.0	1.0	0.8	0.7	0.6	0.4	0.5	0.5
Manufacturing and handicrafts	8.1	8.6	9.3	9.8	10.0	10.1	10.0	9.4	9.5	9.4	9.2	8.3	7.1
Electricity and water supply	1.0	1.0	1.2	1.2	1.2	1.3	1.4	1.5	1.4	1.4	1.4	1.4	1.6
Construction	3.4	4.3	4.3	4.3	4.7	4.7	4.6	4.1	3.5	3.3	2.6	3.1	3.7
Wholesale and retail trade and restaurants and hotels	12.7	12.8	12.0	12.0	12.8	11.6	11.8	11.2	10.7	10.9	11.4	11.5	8.8
Transport, storage and communications	7.4	8.7	9.5	9.5	10.2	10.3	10.6	10.4	10.2	10.0	10.0	9.6	9.9
Finance, insurance, real estate and business services	9.5	9.9	9.9	9.9	9.7	9.8	10.3	9.8	9.5	9.2	8.9	8.7	9.0
Public administration and other services	10.5	10.7	11.3	11.9	12.5	13.1	15.1	16.6	16.6	16.7	16.9	16.6	19.7
Less imputed bank services charge	0.8	1.1	1.3	1.4	1.4	1.5	1.5	1.5	1.3	1.3	1.3	1.3	1.4
GDP at factor cost	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subsistance production													
Agriculture, hunting, forestry and fishing	23.7	23.3	21.0	20.5	21.1	20.8	19.9	21.2	29.5	23.0	24.4	25.4	23.9
Construction	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6
Owner-occupied dwellings	7.0	6.7	6.6	6.5	6.3	6.3	6.3	6.1	5.9	5.7	5.5	5.4	5.4
Total subsistance production	31.5	30.8	28.4	27.7	28.1	27.8	26.9	28.0	29.0	29.3	30.5	31.4	29.9
Total production in the monetary economy	68.5	69.2	71.6	72.3	71.9	72.2	73.1	72.0	71.	70.7	69.5	68.6	70.1
Total production	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: National Accounts of Tanzania, 1966-1976 and Annual Economic Surveys.

Table A:25 Gross domestic product at factor cost by industrial origin

(Percentage shares at current prices)

	1966	1968	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Monetary sector													
Agriculture, hunting, forestry and fishing	45.3	41.7	41.1	39.4	40.0	39.5	39.0	41.2	46.2	51.0	53.6	53.5	53.5
Mining and quarrying	2.9	1.9	1.3	1.4	0.9	1.1	0.9	0.6	0.6	0.4	0.4	0.5	0.7
Manufacturing and handicrafts	8.1	9.0	10.1	10.7	11.4	11.0	10.6	10.4	9.9	9.3	9.5	9.9	9.2
Electricity and water supply	1.0	1.0	1.0	1.0	1.0	1.0	0.8	0.9	1.0	0.8	0.8	0.8	0.8
Construction	3.4	4.5	4.9	5.6	4.7	5.3	4.9	4.3	3.4	3.3	2.8	3.0	4.0
Wholesale and retail trade and restaurants and hotels	12.7	13.0	12.7	12.4	12.8	13.1	13.7	12.8	11.4	11.6	10.0	11.5	8.6
Transport, storage and communications	7.4	8.7	8.7	9.0	8.6	8.8	9.2	8.5	7.8	6.5	6.1	5.7	5.4
Finance, insurance, real estate and business services	9.5	10.5	10.3	10.5	10.4	10.2	10.1	9.7	8.7	8.1	9.0	9.7	10.4
Public administration and other services	10.5	10.9	11.2	11.5	11.7	11.6	12.3	13.0	11.9	10.4	9.7	9.7	10.7
Less imputed bank service charges	0.8	1.2	1.3	1.5	1.5	1.6	1.6	1.6	1.0	1.4	1.7	2.5	2.1
GDP at factor cost	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Subsistance production													
Agriculture, hunting, forestry, and fishing	25.7	22.9	21.1	21.3	21.6	20.7	20.5	24.5	27.0	28.5	32.8	33.7	32.3
Construction	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.6
Own-occupied dwellings	7.0	7.2	6.8	6.8	6.8	6.5	6.0	5.8	5.2	4.7	5.2	5.3	6.1
Total subsistance production	31.5	30.9	28.7	28.9	29.1	27.9	27.3	30.9	32.7	33.7	38.5	39.5	39.0
Total production in the monetary economy	68.5	69.1	71.3	70.9	71.1	72.1	72.7	69.1	67.3	66.3	61.5	60.5	61.0
Total production	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: National Accounts of Tanzania 1966-1976 and Annual Economic Surveys.

LIST OF PARASTATAL ORGANISATIONS (MAINLAND)

	MINISTRY	HOLDING COMPANY	SUBSIDIARIES/BRANCHES
1.	PRESIDENT'S OFFICE	- Capital Development Authority	
2.	OFFICE OF THE PRIME MINISTER	- Kibaha Education Centre	
		- Kariakoo Market Corporation	
		- Moshi Cooperative College	
		- District Development Corporations (one per district)	→ Many small trading and manufacturing companies usually operating within districts
		- Regional Development Corporations (one per region to be formed)	→ Medium size trading and manufacturing companies operating within and sorrounding regions
3.	FINANCE	- Bank of Tanzania	
		- National Bank of Commerce (NBC)	→ With branches all over the country
		- National Insurance Corporation (NIC)	→ With several branches up-country
		- Tanzania Rural Development Bank (TRDB)	→ With branches in each region
		- Tanzania Housing Bank (THB)	→ An office in each region
		- Tanzania Investment Bank (TIB)	
		- Tanzania Audit Corporation (TAC)	
		- National Board of Accountants and Auditors	
		- Dar es Salaam School of Accountancy	
		- Institute of Finance Management	
		- State Lottery	
4.	DEFENCE AND NATIONAL SERVICE	- Msinga Corporation	
5.	FOREIGN AFFAIRS	- College of Diplomacy	
6.	HOME AFFAIRS		
7.	AGRICULTURE	- National Milling Corporation	→ To be decentralized
		- Tanzania Tea Authority	→ Tanzania Tea Blenders
			→ Several Tea Estates
		- Cashewnut Authority of Tanzania	→ Several Cashewnuts processing factories
		- Tanzania Tobacco Authority	→ Tanzania Tobacco processing Company

LIST OF PARASTATAL ORGANISATIONS (MAINLAND) (Cont)

MINISTRY	HOLDING COMPANY	SUBSIDIARIES/BRANCHES
7. AGRICULTURE (Continued)	- Tanzania Coffee Authority	Tanzania Coffee Curing Co. Ltd.
		Tanganyika Instant Coffee Co. Ltd.
		Several State farms
	- Tanzania Sisal Authority	Five companies to be formed
		Tanzania Carpet Manufacturing Company
	- Tanzania Cotton Authority	
	- National Agriculture and Food Corporation (NAFCO)	Arusha Plantations
		Basuto Wheat Scheme
		Mafia Coconuts
		Tanzania Seed Company
		West Kilimanjaro Plantation
		Mbarali Rice Plantations
		Ruvu Rice Plantation
		Dakawa rice plantation (under implementation)
	- Tanganyika Pyrethrum Board	Tanganyika Extract Company
	- Sugar Development Corporation	Kilombero Sugar Company
		Mtibwa Sugar Company
		Kagera Sugar Company
		Tanganyika Planting Company
8. WORKS	- Mwanamchi Engineering and Construction Co. Ltd.	
	- National Estates and Designing Co. Ltd. (NEDCO)	
	-	
9. LIVESTOCK DEVELOPMENT	- Tanzania Livestock Development Authority (LIDA)	National Ranching Company
		Tanzania Diaries Ltd
		Dairy Farming Company
		Tanzania Livestock Marketing Company
		National Cold Chain Operations
		Tanganyika Packers Ltd.
		National Chick Hatchery
10. INDUSTRIES	- National Development Corporation (NDC)	Aluminium Africa Ltd.
		National Bicycle Company
		Ubungo Farm Implements
		National Steel Corporation
		Metal Box (T) Ltd.
		Tanzania Cables Ltd.

LIST OF PARASTATAL ORGANISATIONS (MAINLAND) (Cont.)

MINISTRY	HOLDING COMPANY	SUBSIDIARIES/BRANCHES
10. INDUSTRIES (Continued)	- National Development Corporation Ltd. (Cont)	Tanganyika Oxygen Ltd.
		Mang'ula Mechanical and Machine Tool Co. Ltd.
		Industrial Promotion Services Ltd.
		Steel Rolling Mills Ltd.
		Tanzania Crown Corks Ltd.
		National Engineering Co. Ltd.
		Mufindi Pulp and Paper Factory (under construction)
	- Tanzania Textile Corporation (TEXCO)	Kilimanjaro Textile Mills
		Friendship Textile Mills
		Mwanza Textile Mills
		Musoma Textile Mills
		Tanganyika Dyeing and Weaving Mill
		Ubungo Garments Ltd.
		Morogoro & Mbeya Textile Mills (under construction)
		Ubungo & Tabora Spinning Mills (under construction)
		Blanket Manufacturing Ltd.
		Tanzania Bag Corporation
		Morogoro Sisal Bag Comp. (under Construction)
		Morogoro Canvas Mill (under construction)
		East African Kenaf Industries
	- Saruji Corporation	Wazo Hill Cement Factory
		Mbeya Cement Factory
		Tanga Cement Factory
		Glass container Factory (under construction)
		Sheet Glass Factory (under construction)
	- Tanzania Karatasi Associated Industries	Kibo Paper Industries Ltd.
		Printpak Tanzania Ltd.
		National Printing Company Ltd.
		Tanzania Publishing House
		Eastern Africa Publications Ltd.
	- Tanzania Leather Associated Industries	Tanzania Tanneries - Moshi
		Tanzania Hides and Skins Ltd.
		Morogoro Tanneries
		Mwanza Tanneries
		Tanzania Shoe Company and Morogoro Shoe Company
		Morogoro Leather Products Corporation
	- Tanzania Breweries Ltd.	Dar es Salaam Breweries
		Arusha Breweries
		Tanzania Distilleries
		Dar Brew
	- Small Industries Development Organisation (SIDO)	Industrial Estates in each region (planned)
		Tanzania Handicrafts Marketing Corporation
	- National Chemicals Industries (NCI)	General Tyre
		Tanzania Fertiliser Company
		Tergy Plastics
		Rubber Industries

LIST OF PARASTATAL ORGANIZATIONS (MAINLAND) (Cont)

MINISTRY	HOLDING COMPANY	SUBSIDIARIES/BRANCHES
10. INDUSTRIES (Continued)	- National Chemicals Industries (NCI) Cont.	Koko Pharmaceutical Mabibo Pharmaceutical Sabuni Industries Ltd. Tanzania Pharmaceuticals Industries Polysack Company Cassava Starch - Mwanza (under implementation) Power Alcohol (Under Implementation)
	- State Motor Corporation	Tanzania Motor Corporation (TMC) Ridoch Motors Tanzania Automobile Manufacturing Co. (TAMCO) Mwananchi Tractor and Vehicles Assemblies Ltd. (MTAVA)
	- Tanzania Bureau of Standards (TBS)	
	- Tanzania Cigarrete Company Ltd. (TCC)	
	- Tanzania Industrial Studies and Consulting Organisation (TISCO)	
	- Tanzania Industrial Research and Development Organisation (TIRDO)	
	-	
11. MINERALS	- State Mining Corporation (STAMICO)	Nyanza Salt Mines Tanzania Gemstone Industries Williamson Diamonds Tanganyika Meerschaum Corporation Tanzania Diamond Cutting Company
12. WATER AND ENERGY	- Tanzania Petroleum Development Corporation (TPDC)	Tanzania &Italian Petroleum Refinery Co. Ltd. (TIPA) AGIP (T) Ltd. LP (T) Ltd.
	- Tanzania Water Corporation	
	- Tanzania Electricity Supply Company (TANESCO)	Branches in all major towns
13. NATURAL RESOURCES AND TOURISM	- Tanzania Wood Industries Corporation (TWICO)	Sikh Saw Mills Fibre boards Africa Ltd. Tembo Chipboards Tabora Mbitu Products Ltd. Kilwa Saw Mill Mkata Saw Mill Tanzania Timber Marketing Corporation Moshi Utilization Company
	- Tanzania Tourist Corporation (TTC)	A Group of Hotels
	- Tanzania Tours Ltd.	

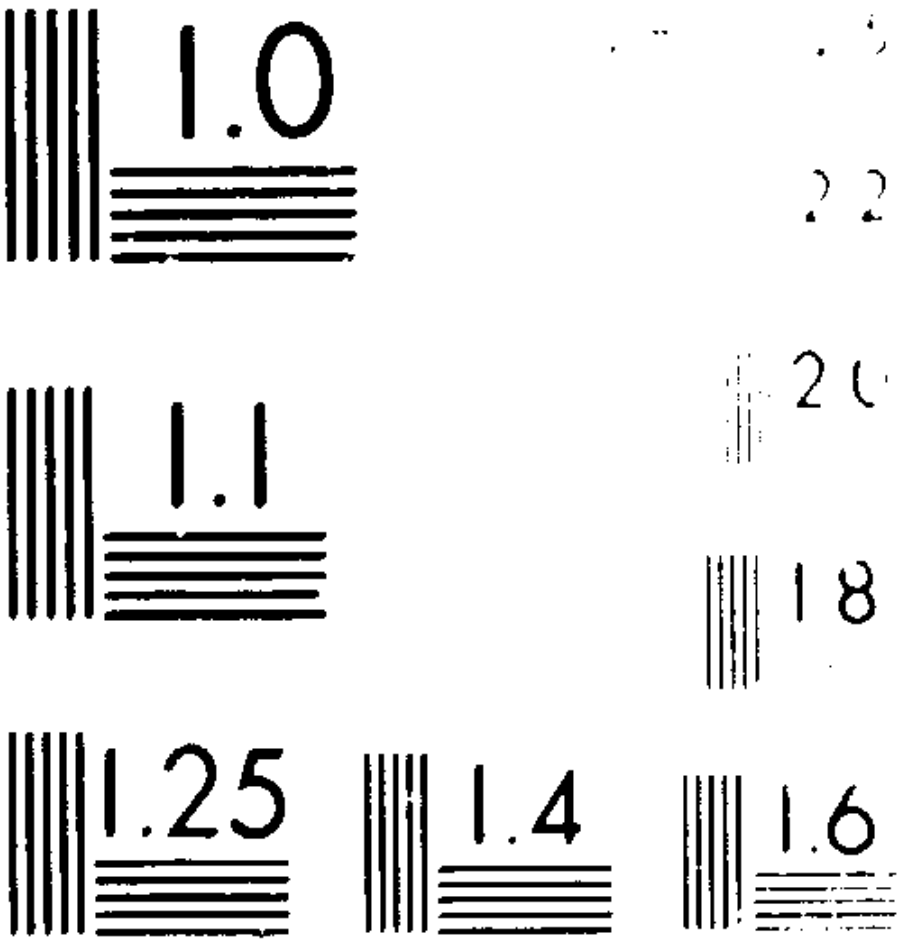
LIST OF PARASTATAL ORGANISATIONS (MAINLAND)(Cont.)

MINISTRY	HOLDING COMPANY	SUBSIDIARIES/BRANCHES
13. NATURAL RESOURCES AND TOURISM (Continued)	- Tanzania Wildlife Corporation	
	- Giraffe Extract Company Ltd.	
	- State Travel Services Ltd.	
	- Tanzania Fisheries Corporation	A number of boat yards Mwananchi Ocean Products
	- Tanzania National Parks	
	- Serengeti Research Institute	
14. COMMUNICATIONS AND TRANSPORT	- National Transport Corporation (NTC)	Shirika la Usafiri Dar es Salaam (UDA) National Bus Service (KAMATA) Tanzania Coastal Shipping Ltd. (TACOSHILI) National Institute of Transport (NIT)
	- Air Tanzania Corporation (ATC)	
	- Tanzania Posts and Telecommunications (TPTC)	
	- Tanzania Railways Corporation (TRC)	
	- Tanzania Harbours Authority (THA)	
13. HOUSING, LAND & URBAN DEVELOPMENT	- National Housing Corporation (NHC)	
	- Registrar of Buildings	
	- Tanzania Concrete Articles Ltd.	
	- Ardhi Institute	
16. HEALTH	- Muhimbili Medical Centre	
	- Tanzania Food and Nutrition Centre	
17. NATIONAL EDUCATION	- Education Institutes	
	- Adult Education Institute	
	- University of Dar es Salaam	
	- Tanzania Elimu Supplies	Tanzania Stationery Manufacturers
	- Tanzania Library Services (TLS)	
	- Tanzania Examination Council	
18. INFORMATION AND CULTURE	- Music, Sports and Swahili Councils	
	- National Museum	
	- Tanzania Film Company	
	- Audio Visual Institute	
	- Daily News Dar es Salaam	
	- Uhuru/Mzalendo	
	- Shihata (News Agency)	

LIST OF PARASTATAL ORGANISATIONS (MAINLAND) (Cont.)

	MINISTRY	HOLDING COMPANY	SUBSIDIARIES/BRANCHES
19.	LABOUR AND SOCIAL WELFARE	- National Provident Fund - National Institute of Productivity - Social Welfare Institute	
20.	JUSTICE	- Tanzania Legal Corporation	
21.	VICE PRESIDENT'S OFFICE RESPONSIBLE FOR ECONOMIC AFFAIRS		
22.	REGIONAL ADMINISTRATION (PRIME MINISTER'S OFFICE		
23.	MANPOWER PLANNING (PRIME MINISTER'S OFFICE)	- Institute of Development Management (IDM)	
24.	TRADE	- Board of Internal Trade (BIT)	Building Hardware and Electric Supplies Co. (BHESCO) Domestic Appliance and Bicycle Co. Ltd. (DABCO) Household Supplies Company (HOSCO) 20 Regional Trading Companies (RTC) National Pharmaceutical Company (NAPCO) General Foods Company (GEFCO) Agricultural and Industrial Supplies Company (AISCO) Dar es Salaam Textile Company (DARTEX)
		- Board of External Trade (BET) - College of Business Education - National Shipping Agency Company Ltd. (NASACO)	

Source: Ministries July 1981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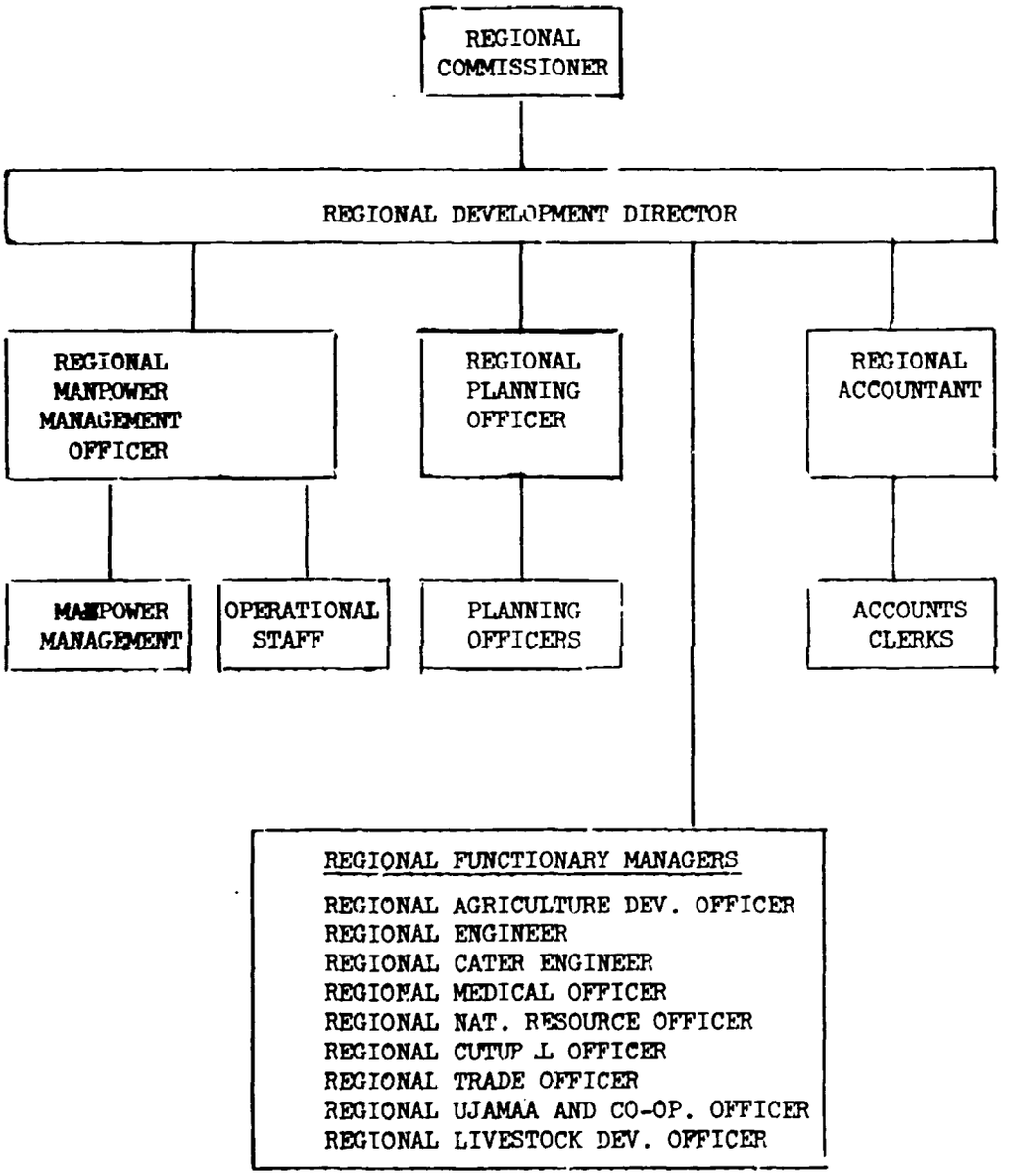
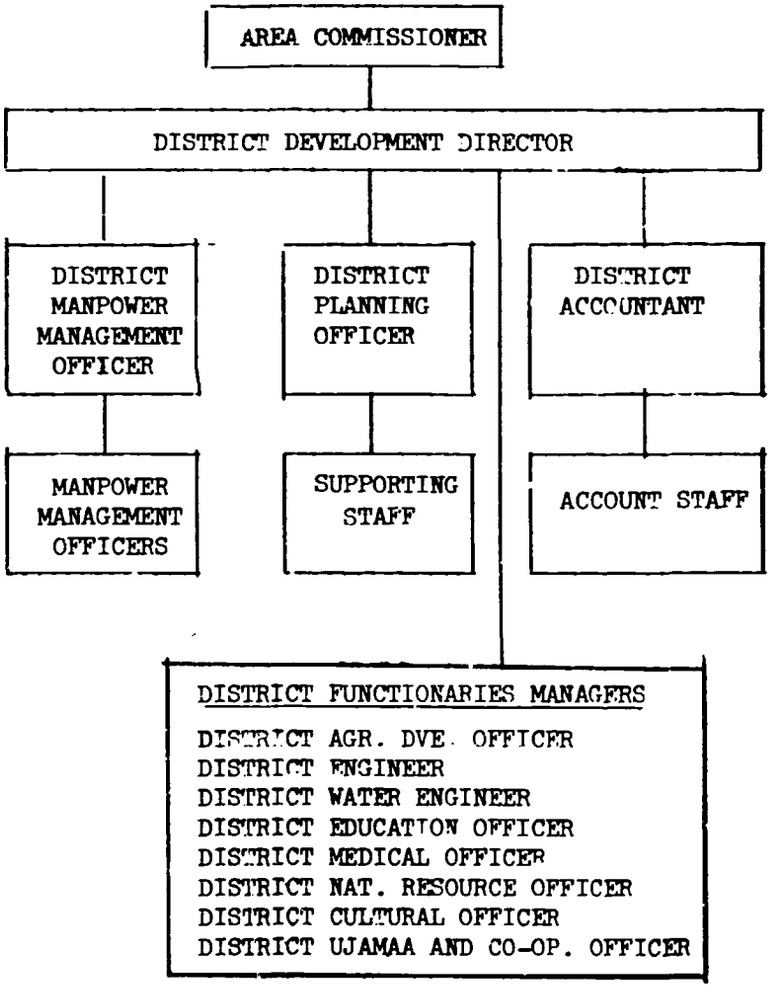
REGIONAL ADMINISTRATIVE STRUCTURE

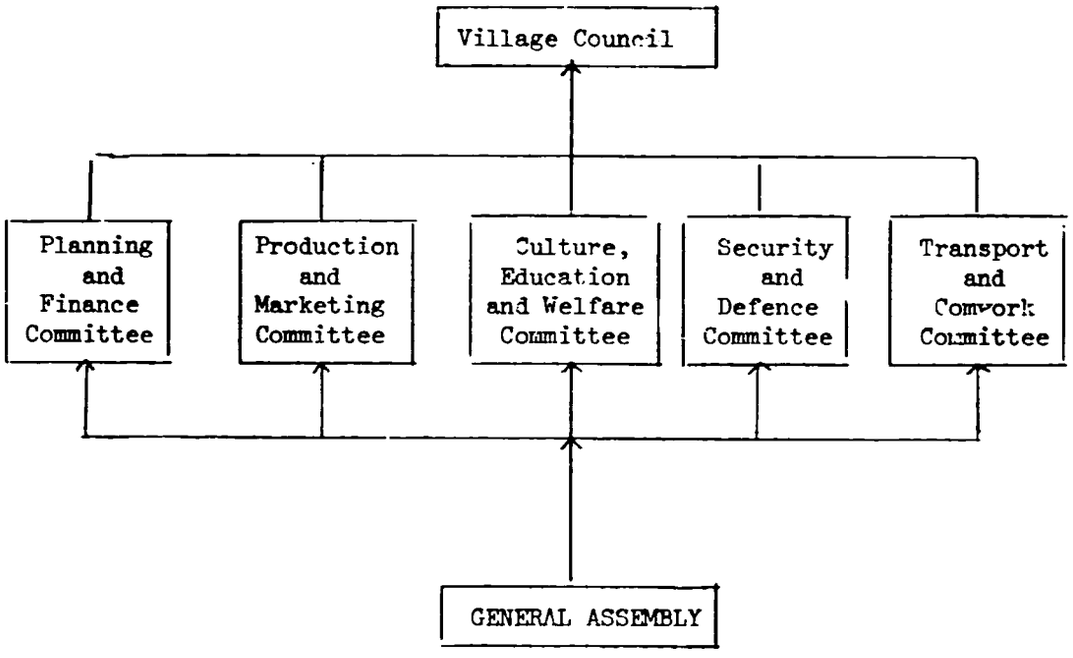


DISTRICT ADMINISTRATIVE STRUCTURE



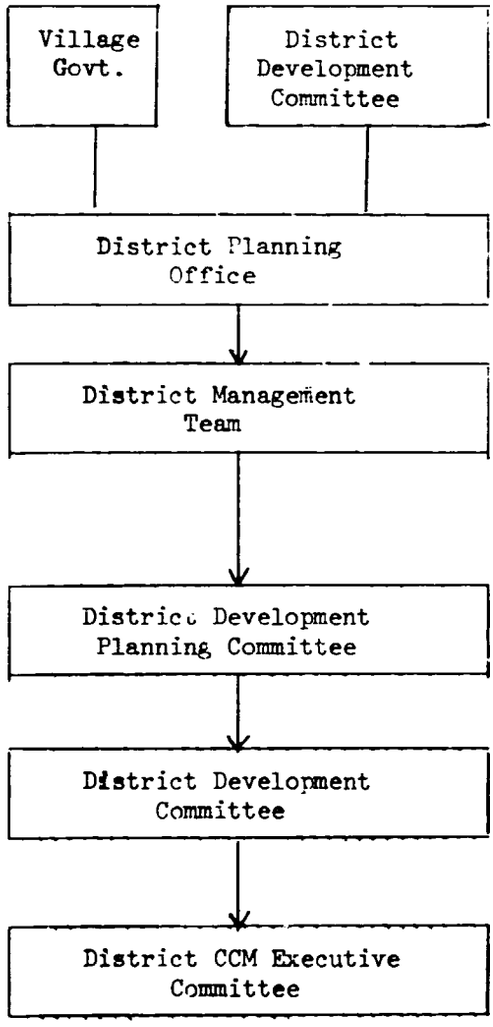
VILLAGE ADMINISTRATIVE STRUCTURE

A. Policy Making Bodies:



B. Executive

PLANNING PROCEDURE



- Village Committee proposes what the village wants
- DDC's Management also propose their plans

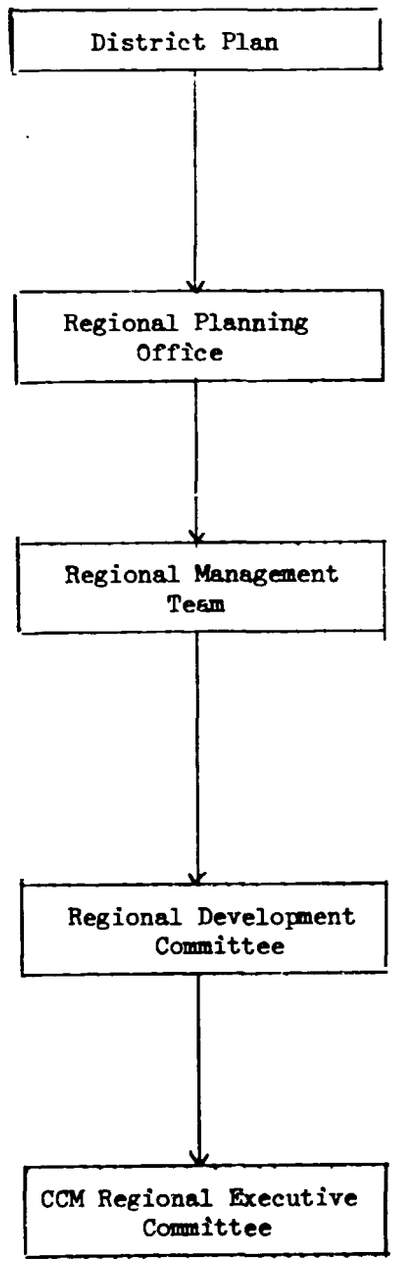
- Co-ordinates itemizes, forwards to the District Development Director who convenes District Management Team meeting

- Discusses the programmes
- Gives new ideas
- DMT composed of all the District Functionary Managers, the DPLO, DMMO.
- Chaired by DDD and DPLO is Secretary

- Composed of DMT, MPS, Area Commissioner, District CCM Chairman
- Chaired by Area Commissioner, DDD is Secretary.

- Composed as in DDPC plus Ward secretaries and village Chairman
- Chaired by AC:DDD is Secretary

- For Ratification and then sent to the RPLO



- From the District CCM Executive Committee forwarded by DDD's Office

- Co-ordinates, itemizes, departmentalizes and forwards to RDD who convenes RMT

- Discusses the proposals
- New ideas are incorporated
- Composed of RDD, RPLO, RMMO, Regional Accountant and the Functionary Managers
- RMT is chaired by the RDD while RPLO is the Secretary.

- Composed of district representatives i.e. DDD, DPLO, AC, MPs, District CCM Chairman together with all the RMT members plus, the Regional Commissioner and Regional CCM Chairman
- It is chaired by RC with RDD and PRLO as Secretary.

- Regional Plan to be forwarded to PMO

Value added in manufacturing[a/], 1974-78

(TShs. million at current prices)

	1974	1976	1977	1978
Grand total	1,156.7	1,755.8	2,074.8	2,186
Consumer goods	606.5	1,060.2	1,139.4	1,066
Food and food products	242.7	479.5	518.8	507.2
Meat, vegetable and fruit canning and dairy products	31.1	33.7	54.3	86.3
Grain mill products	32.5	161.0	182.0	211.4
Sugar factories and refineries	48.2	91.1	107.9	91.1
Edible oil milling	18.0	9.3	27.3	27.3
Tea processing, coffee curring and roasting others	112.9	184.4	147.3	91.1
Non-food products	363.8	580.7	620.6	558.4
Breweries	43.4	75.8	69.7	83.8
Tobacco manufacture	82.5	95.8	98.6	124.5
Cotton ginning, spinning and weaving of textiles	150.7	221.6	224.9	185.2
Manufacture of carpets and knitting mills	11.4	15.1	43.3	57.4
Cordage, ropes and twine	19.1	44.1	45.6	10.1
wearing apparel and made-up textile goods	56.7	128.3	138.5	97.0
Intermediate goods	458.0	541.2	747.4	966.2
Sawmilling and plywood manufacture of wood products	20.4	27.1	48.1	58.8
Manufacture of furniture and fixtures	11.2	11.3	15.3	15.3
Printing and publishing	58.9	51.5	63.4	82.1
Manufacture of pulp, paper board and products	13.5	35.8	37.3	60.0
Basic industries chemicals, non-elible and petroleum products	78.9	93.2	112.4	126.3
Tanneries and leather finishing	22.1	39.4	29.9	60.5
Manufacture of pharmaceutical, paints, soaps and other chemical products	21.5	38.5	43.2	95.8
Manufacture of fertilizers and pesticide	61.0	33.4	105.2	40.2
Manufacture of rubber products including tyres and tubes	43.7	60.0	105.5	124.0
Manufacture of plastic products	23.2	28.2	28.9	29.0
Manufacture of glass products and building materials	36.2	17.8	23.3	124.3
Iron, steel and other non-ferrous metal basic industries	32.7	62.4	70.2	153.9
Manufacture of metal products	34.7	42.6	64.7	
Capital goods	74.9	121.9	134.6	126.0
Manufacture and repair of machinery	31.3	55.8	66.0	58.9
Motor vehicle assembling	43.6	66.1	68.6	67.1
Other manufacturing	16.6	32.5	53.4	28.5

Source: Survey of Industrial Production, 1974, and data provided by the Bureau of Statistics.

a/ Firms employing 10 or more workers.

Appendix 3:8

Value added per worker[a], 1974-78

(TShs. thousand at current prices)

	1974	1976	1977	1978
Grand total	16.5	22.5	24.6	22.7
Consumer goods	12.6	20.9	21.2	11.6
Food and food products	15.2	24.0	24.8	19.2
Meat, vegetable and fruit canning and dairy products	18.8	20.6	29.4	22.3
Grain mill products	13.4	9.0	72.8	36.1
Sugar factories and refineries	21.7	15.5	17.3	15.5
Edible oil milling	11.0	6.3	13.9	13.8
Tea processing, coffee curring and roasting others	14.1	22.5	17.5	13.8
Non-food products	11.3	18.8	19.0	13.6
Breweries	22.7	37.2	33.3	39.4
Tobacco manufacture	18.5	18.0	18.6	24.2
Cotton ginning, spinning and wearing of textiles	9.0	16.2	16.1	9.2
Manufacture of carpets and knitting mills	13.9	17.6	45.2	14.1
Cordage, ropes and twine	8.4	18.5	19.6	16.9
Wearing apparel and made-up textile goods	9.7	21.5	17.2	16.9
Intermediate goods	26.0	27.3	32.8	39.8
Sawmilling and plywood manufacture of wood products	6.4	8.4	11.9	19.5
Manufacture of furniture and fixtures	13.1	11.7	11.5	11.0
Printing and publishing	33.4	28.8	33.0	33.7
Manufacture of pulp, paper board and products	11.7	26.4	25.2	33.9
Basic industries chemicals, non-edible and petroleum products	59.9	9[illegible].2	[illegible]7.4	41.4
Tanneries and leather finishing	48.8	64.6	33.3	83.2
Manufacture of pharmaceutical, paints, soaps and other chemical products	28.2	18.1	18.2	76.0
Manufacture of fertilizers and pesticides	61.3	30.9	94.8	27.6
Manufacture of rubber products including tyres and tubes	34.9	42.6	70.7	87.2
Manufacture of plastic products	43.9	58.5	34.5	71.4
Manufacture of glass products and building materials	16.7	7.5	9.5	
Iron, steel and other non-ferrous metal basic industries	36.8	76.0	90.1	63.3
Manufacture of metal products	15.4	21.2	22.0	28.1
Capital goods	24.6	34.5	34.6	30.8
Manufacture and repair of machinery	27.1	35.1	36.8	30.5
Motor vehicle assembling	27.9	33.9	32.3	31.1
Other manufacturing	12.3	7.9	13.9	27.9

Source: Survey of Industrial Production, 1974, and data provided by the Bureau of Statistics

a/ Firms employing 10 or more workers.

Employment and labour costs in manufacturing, 1974-78

	Employment (No. of employees)				Labour costs (Tzs.million at current prices)		
	1974	1976	1977	1978	1974	1976	1977
Grand total	69,974	78,140	84,175	95,041	512.6	650.8	703.1
Consumer goods	47,987	50,705	53,648	66,041	303.7	396.8	412.8
Food and food products	15,933	19,946	20,995	24,983	92.6	123.2	105.7
Meat, vegetable and fruit canning and dairy products	1,657	1,639	1,849	3,862	12.5	10.0	13.1
Grain mill products	2,423	2,622	2,499	5,352	12.7	15.0	16.0
Sugar factories and refineries	2,219	5,968	6,231	5,883	19.1	40.1	19.8
Edible oil milling	1,639	1,485	1,967	1,974	7.8	9.0	11.2
Tea processing coffee curing and roasting others	7,995	8,213	8,469	7,412	40.5	49.1	45.6
Non-food products	32,054	30,759	32,693	41,040	211.1	273.6	307.1
Breweries	1,913	2,037	2,096	2,126	25.6	37.7	30.9
Tobacco manufacture	4,468	5,329	5,298	5,119	26.3	31.6	33.4
Cotton ginning, spinning and wearing of textiles	16,744	13,660	13,951	20,130	103.2	129.5	140.8
Manufacture of carpets and knitting mills	823	956	957	4,068	5.8	7.0	7.8
Cordage, ropes and twine	2,270	2,339	2,322	3,853	12.9	16.3	15.2
Wearing apparel and made-up textile goods	5,835	6,438	8,069	5,744	37.3	51.5	79.0
Intermediate goods	17,594	19,310	22,817	23,783	165.9	198.6	228.9
Sawmilling and plywood, manufacture of wood products	3,206	3,228	4,042	3,013	16.5	18.0	24.4
Manufacture of furniture and fixtures	855	962	1,335	1,382	5.5	10.6	6.3
Printing and publishing	1,761	1,788	1,919	2,439	17.4	19.0	23.0
Manufacture of pulp, paper board and products	1,156	1,355	1,478	1,779	7.7	10.6	9.8
Tanneries and leather finishing	453	610	897	721	4.0	6.6	9.3
Basic industrial chemicals, non-edible oils, petroleum products	1,316	1,573	1,154	3,054	28.5	33.2	28.0
Manufacture of pharmaceuticals, paints, soaps and other chemical products	763	2,122	2,375	1,151	6.8	11.8	13.6
Manufacture of fertilizers and pesticides	995	1,080	1,111	1,458	15.2	15.9	18.3
Manufacture of rubber products including tyres and tubes	1,252	1,410	1,492	1,422	12.5	16.6	17.4
Manufacture of plastic products	528	482	839	876	5.2	5.6	8.7
Manufacture of glass products and building materials	2,162	2,274	2,456	2,674	18.7	20.7	25.1
Iron, steel and other non-ferrous metal industries	888	821	779	3,914	7.6	9.1	10.0
Manufacture of metal products	2,259	2,005	2,939		20.3	23.6	32.0
Capital goods	3,047	3,535	3,888	4,087	33.8	44.0	49.8
Manufacture and repair of machinery	1,482	1,588	1,994	1,933	16.7	19.0	23.2
Motor vehicle assembling	1,565	1,947	2,094	2,154	17.1	25.0	26.6
Other manufacturing	1,346	4,090	3,822	1,021	12.2	11.4	11.6

Source: Survey of Industrial Production, 1974 and data provided by the Bureau of Statistics.

Manufactured goods exported, 1970-79

(At current prices, Value in TShs. '000)

Type of product	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Meat in airfreight containers and meat preparations	8,232	9,856	10,208	4,472	10,633	4,994	5,106	5	40	188
Canned beef	15,849	27,560	33,172	16,638	34,228	9,447	11,397	12,131	2,907	773
Butter, ghee	122	328	143	2	93	-	82	68	29	5
Wheat, maize cereal	32	-	6	119	178	12	29	26	34	18
Flour and others	4	39	13	15	24	35	10	37	36	624
Cashew kernel	21,670	21,850	22,444	33,709	36,765	44,441	76,225	75,302	67,903	82,106
Fruit preserved and fruit preparation (jam, juices)	843	1,396	648	1,770	727	288	1,196	658	35	138
Vegetable, roots and tubes preserved n.e.s.	31	131	32	33	574	2,368	598	65	8	3,214
Sugar, sugar preparations and honey	2,138	2,796	4,639	4,157	2,047	53,031	8,005	26,538	48,841	88,317
Coffee roasted and coffee extracts	6,557	11,720	5,990	6,945	10,885	5,060	6,368	8,488	7,887	-
Chocolate and other food preparations	-	-	-	-	-	-	1,041	-	-	-
Feeding stuff	30,892	28,695	34,661	52,245	55,588	40,089	54,803	69,604	39,363	41,094
Other food preparations	3,321	2,501	1,353	199	389	62	102	1,317	555	656
Sub-total: Food preparations	99,691	872	113,309	120,304	146,131	160,727	238,903	204,239	167,638	218,133
Beverages, soft drinks, spirits	102	99	38	54	4	31	555	270	94	92
Tobacco manufacturers	-	-	-	-	-	-	-	-	-	3
Cigarettes	70	167	133	726	2,557	6,062	3,815	4,349	11,508	17,256
Sub-total: Beverages and Tobacco	172	226	171	780	2,561	6,093	4,370	4,619	11,602	17,351
Pyrethrum extract	13,972	18,358	24,639	18,988	16,222	19,804	19,983	20,461	20,322	9,693
Petroleum and petroleum products	105,286	143,313	216,178	87,844	133,252	139,295	172,950	145,042	82,896	136,486
Animal and vegetable oil and fats processed	3,873	3,661	2,630	5,318	4,525	3,017	8,783	5,946	5,708	11,177
Chemical elements compounds	8	11	10	154	700	735	1,207	1,012	127	303
Dyeing, tunning extracts pigments paints etc.	7,902	8,038	15,527	16,688	32,049	20,957	24,361	35,247	23,543	27,825
Medical and pharmaceutical products	534	247	359	46	244	101	41	25	1	41
Essential oils and perfume materials	6,507	2,514	3,155	2,125	6,156	2,088	3,080	750	177	11,935
Fertilizers manufacturers	-	-	-	24	3,287	1,877	252	-	-	-
Plastic materials regersted cellulose	225	30	58	14	24	290	2	31	69	30
Chemical materials n.e.s.	1,532	3,139	2,401	960	8,663	7,807	10,339	10,571	4,573	4,998
Sub-total: Chemicals	139,839	179,311	264,957	132,161	205,122	195,971	251,000	219,085	137,416	205,21

Manufactured goods exported, 1970-79 (contd.)

(Value in TShs. '000)

Type of products	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Leather, leather manufactures n.e.s. and dresses from skins	3,734	2,515	2,790	4,138	2,600	706	450	450	27	583
Rubber manufacturers	-	-	-	260	446	196	3	12	13	-
Rubber tyres and tubes for vehicles and craft	41	270	-	14,897	20,051	8,533	19,368	9,901	5,429	25,103
Wood and cork manufacture (excluding furniture)	6,871	5,802	5,192	11,538	6,569	2,922	3,478	2,206	3,489	3,004
Paper, paper board	481	249	247	1,201	1,592	1,104	2,421	974	880	3,141
Textile yarn fabrics, made up articles and related products	8,317	36,335	22,076	12,314	7,410	7,609	9,930	308	3,337	29,565
Sisal fabrics	17,177	44,734	39,018	72,337	150,827	91,726	110,805	124,079	115,963	218,978
Non-metallic manufacture n.e.s.	-	2	-	-	-	-	-	-	-	1,954
Cement for building purposes	475	1,044	1,066	1,660	5	286	717	1,609	8,855	3,267
Glassware	1,266	106	1,363	45	50	67	1,241	1,294	729	6,019
Iron and steel	34	247	14	10,946	12,297	21,425	12,952	2,259	929	6,059
Non-ferrous metals	11	-	-	-	-	-	-	-	2	59
Aluminium	13,077	13,059	12,960	13,879	13,531	6,645	22,196	9,282	28,654	10,235
Manufacture of metals n.e.s.	6,365	5,645	3,100	4,570	1,710	1,063	2,388	1,036	931	1,448
Sub-total: Manufactured goods	67,869	110,058	87,906	147,785	217,088	136,505	186,486	153,410	169,238	316,415
Machinery, other than electric	-	72	164	688	814	52	621	107	43	19
Electrical machinery apparatus, appliances	-	21	-	-	54	-	-	15	-	577
Radio broadcast receivers	6,877	8,869	4,578	4,772	7,205	8,704	13,110	1,589	85	5,060
Batteries and cells	4,360	7,456	5,443	6,230	5,576	9,569	9,615	9,194	11,284	16,597
Transport equipment	262	169	185	14	104	-	3	201	80	352
Sub-total: Manufacture of machinery	11,499	16,587	10,370	11,604	13,753	18,325	23,349	11,106	11,482	22,607
Sanitary plumbing, heating, lighting, fixtures and fittings	53	3	5	44	28	-	3	1	-	-
Furniture	229	1,912	1,511	442	1,084	584	1,621	38	21	4,189
Travel goods, handbags and similar articles	16	43	42	-	-	2	-	21	41	193
Clothing	6,873	3,490	3,041	4,089	8,392	7,951	13,031	9,517	7,401	75,857
Footwear	1,940	1,072	354	384	489	122	105	281	676	597
Professional, scientific and controlling instruments	-	-	1	-	-	-	11	-	4	-
Miscellaneous manufactured articles n.e.s	1,337	9,337	6,685	5,797	5,672	8,163	4,370	4,234	1,271	11,268
Smoking pipes, pipe bowls, stems	1,912	1,635	1,837	2,583	2,912	2,488	2,738	1,609	1,141	1,208
Sub-total: Miscellaneous manufactures	12,350	17,402	13,476	13,340	18,577	19,310	21,879	15,701	10,555	93,312
Grand total	331,430	430,546	490,189	436,074	603,232	536,931	725,987	598,160	507,931	873,034
Percentage change	-	+29.90	+13.81	-11.03	+38.33	-10.9	+35.20	-17.60	-15.10	+71.80

Source: Annual Trade Reports 1970 to 1978; Speech by Hon. C.D. Msuya, Minister for Industries, to the Budget Session of the National Assembly for the 1980/81 financial year.

Explanation: Total manufactured exports include re-exports.

Capacity utilization in Tanzania manufacturing[1/]

In a study of a sample of 53 manufacturing enterprises in Tanzania, made in 1976 by Dr. Wangwe of the University of Dar es Salaam, the following salient features could be highlighted. In the tables are shown the relative frequences of capacity utilization among the sample firms as well as a cumulative frequency.

Table 1

Rate of capacity utilization in per cent	Relative frequency distribution in per cent
Less than 20	4
21 - 30	4
31 - 40	8
41 - 50	11
51 - 60	11
61 - 70	20
71 - 80	11
81 - 100	31

Table 2

Rate of capacity utilization in per cent	Cumulative frequency distribution in per cent
Note more than 20	4
30	8
40	16
50	27
60	38
70	38
80	69
90	100

1/ Source: "Factors in influencing capacity utilization in Tanzania manufacturing" by Dr. G. Wangwe, University of Dar es Salaam, published in International Labour Review, January 1977.

According to Dr. Wangwe it seem to be typical to have several factors sharing simultaneously in the causation of particular cases of under-utilization. However, these factors could generally be grouped under; (a) supply factors, and (b) demand factors.

(a) Supply factors

(i) Shortage of raw materials. This affected about 80 per cent of the sample firms and the reasons were:

- Foreign exchange problem. Some firms reported up to six months time to wait for their import licences. 70 per cent of the firms reporting shortage of raw materials as the main reason for not operating at capacity blamed foreign exchange allocations as the problem.

- Inadequate transport facilities. 18 per cent of the firms blamed this as the main problem.

- Working capital. Mostly small firms suffered from inadequate working capital as financial institutions seemed reluctant to support small enterprises. 25 per cent of the firms reported this as the main problem.

(b) Demand factors

Among these factors are included:

- Economies of scale. Overcapacity in the short run but not in the long run, i.e. a temporary demand problem.

- Technical grounds. The minimum size of particular operations may exceed the domestic demand.

- Fluctuations in demand. This was found significant for clothing firms only.

- Oligopolistic structure. A few large firms cater for the whole market of a particular product but their combined capacity is larger than total demand. Consequently the number of firms should be reduced.

- Export market has not been significantly tapped because of un-competitiveness and deficiencies in export promotion services.

Comparing the figures from Dr. Wangwe's research with those from the Ministry of Planning and TISCO for the subsequent years, the problem of under-utilization of capacity clearly seems to have worsened. One important factor here is the very serious position on foreign exchange reserves Tanzania is facing.

Parastatal organizations: Manufacturing sector, capital accounts sources and applications of funds, 1970-1978

(TShs. '000 at current prices)

	1970	1971	1972	1973	1974	1975	1976	1977	1978
Sources									
Retained profits	(4,500)	11,300	64,500	1,800	(12,500)	106,500	64,500	212,200	195,700
Depreciation	32,400	43,000	57,000	84,100	104,900	111,000	107,300	127,400	123,700
Loans from Tanzania Govt.	2,500	-	3,800	16,200	18,500	72,800	260,100	108,500	33,800
Grants from Tanzania Govt.	600	3,700	400	100	-	-	-	55,500	6,400
Loans from abroad	9,200	32,300	33,600	26,800	16,500	63,700	7,500	25,600	13,800
Grants from abroad	-	-	1,400	-	-	28,000	-	1,700	1,300
Loans from local banks	181,300	140,500	125,000	149,500	801,600	350,300	644,100	189,200	101,800
Other sources and cash balance	(15,600)	(1,500)	(119,600)	(67,600)	(522,800)	(403,300)	(422,400)	(51,300)	(234,400)
Total receipts	205,900	229,300	166,100	227,100	406,200	335,000	661,100	668,800	242,100
Applications									
Land and land improvement	1,200	12,000	200	4,500	3,900	8,900	13,500	8,300	1,200
Residential buildings	1,500	8,700	6,800	4,500	10,100	5,400	9,300	32,000	3,500
Non-residential buildings	29,300	27,800	20,900	29,900	28,500	22,200	35,900	56,700	27,600
Other works	(500)	10,500	7,000	8,000	20,500	(4,900)	254,500	122,200	9,900
Transport equipment	6,700	7,800	12,400	12,400	7,800	12,500	32,500	29,900	21,100
Other machinery and equipment	165,000	109,600	79,000	93,100	82,400	158,200	107,100	182,000	100,500
Fixed capital formation	203,200	176,400	128,100	152,200	159,200	202,300	452,600	431,100	170,500
Increase in stocks	(4,400)	52,700	36,700	74,700	233,100	123,300	(7,200)	48,100	(56,500)
Capital formation	198,800	229,100	164,800	226,900	392,300	325,600	445,400	479,200	114,000
Net acquisition of financial assets	7,100	200	1,300	200	13,900	400	215,700	189,600	128,100
Total expenditure	205,900	229,300	166,100	227,100	406,200	335,000	661,100	668,800	242,100

Source: Government of United Republic of Tanzania; Ministry of Finance and Planning; Bureau of Statistics. "Analysis of Accounts of Parastatals", Dar es Salaam 1979.

Tanzania's basic industrial structure, concentration and regional dispersal

1. The country's industries may be categorized in following four groups:

(i) Agricultural processing

- Cotton ginneries
- National Milling Corporation (maize meal)
- Sisal processing
- Cashew processing
- Sugar factories
- Oil seed crushing
- Tanneries
- Tanganyika Packers (meat)

(ii) Consumer goods

- Cigarette factory
- Breweries
- Soft drinks
- Textiles
- Shoes

(iii) Agricultural intermediates

- Fertilizer
- Metal Box (cans)
- Tyre factory
- Farm implements factory

(iv) Large-scale industry

- Cement factories
- Oil refinery
- Steel rolling mill
- Paper and pulp mill (under construction)
- Vehicle assembly

2. The dispersal of industry under these categories may be summarized as follows:

(i) Agricultural Processing Industries

- National milling (wheat and maize) is still concentrated in Dar es Salaam, but national maize mills have opened over the last five years.

- Sisal processing is concentrated in the Tanga - Morogoro - Dar es Salaam regions.

- Cashew processing which started in Dar es Salaam is now widely dispersed in Lindi and Mtwara and elsewhere in the south.

- Sugar factories at Moshi, Kilombero, Tanga and Kagera are widely dispersed.

- Oil seed crushing are at Dar es Salaam and Mwanza with new under-utilised factories at Morogoro and Nachingwea.

- Tanneries have been established at Mwanza, Moshi and Morogoro.

- Cotton ginneries were always widely dispersed in West Lake and Mwanza regions.

- Meat processing factories have been established in Shinyanga and Mwanza to supplement the Tanganyika Packers Factory at Dar es Salaam.

(ii) Consumer goods

- The cigarette factory (old B.A.T. Unit) has remained in Dar es Salaam but the brewery is planning a new unit at Mwanza to reduce transport costs.

- Soft drinks production started in Dar es Salaam but is now quite well regionalized with more to come.

- Textile industry has been subject to the most conscious policy of regionalization of industry with factories in Mwanza, Tanga, Arusha and Morogoro with new units planned at Shinyanga and Mtwara.

- In footwear, Bora Shoes (ex. Bata) remains in Dar es Salaam. A new factory is under construction at Morogoro.

(iii) Agricultural intermediates

- Fertilizer plant is located at Tanga.

- Metal Box remains in Dar es Salaam.

- Tyre factory in Arusha has been established by General Tyre.

(iv) Large-scale industry

- Cement factories are at Wazo Hills north of Dar es Salaam, at Tanga and Mbeya.

- The oil refinery, steel rolling mills and Kibo Paper Mill are located in Dar es Salaam; the new pulp and paper mill complex is under construction at Mufindi; and there are plans to develop a fertilizer complex at Kilwa based on Songo-Songo Island natural gas.

(v) Vehicle assembly is all concentrated at Dar es Salaam.

3. This appendix gives only a partial coverage (80-90 per cent) of Tanzania's industrial sector output. It reflects the dominance of the public sector corporations although some private sector units are included such as:

- Small oil seed units
- Small tanneries
- Soft drinks units
- Textile and garment firms

4. The bulk of industrial activity in Tanzania is still concentrated in and around Dar es Salaam, including most of the private sector industries with the major companies located between the airport and the harbour and railway station (the Pugu Road industrial area).

Linkage effects of basic industries in Tanzania[1/]

In 1976 K.S. Kim, then with the Economics Department of the University of Dar es Salaam, made some research into the linkage effects in Tanzanian Industry.

According to C.T. Thomas[2/] two basic materials alone, iron and steel and textiles, from the back-bone of modern industrial consumption. These together with paper, plastic, rubber, glass, leather, cement, wood, fuel and industrial chemicals, account for the overwhelming bulk of basic materials used in industrial consumption. Most of the value added in industry is derived from this range of industries. Consequently these industries constitute the range of strategic linkages and form the cornerstone of an industrialization programme.

From this Kim formed the vector of the "basic" industries for Tanzania. Kim's method was to assess the short run impact on income, employment and foreign exchange earnings. More specifically the effects of aunit-increase in final demand for a certain sector's net output. In order to accommodate final demand repercussions, the final demand sectors were decomposed into two categories - endogenously - determined and exogenously - determined final demand. An input-output table worked out for Tanzania in 1970 was used, which included altogether 45 producing sectors, 5 final use sectors, and 5 categories of primary inputs (including intermediate goods imports)[3/], consumption expenditures were postulated to depend on the level of national incomes and the remainder grouped as exogenous expenditures.

Table 2 and 3 show the result of the calculations for the forward and backward linkage effects of Tanzanian industries. These are then ranked in descending order by the linkage indices.

Kim observed that on the whole there were close positive relations

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1/ Based on K.S. Kim: The linkage effects of basic industries in Tanzania some policy issues and suggestions, ERB Paper 76.II, 1976.

2/ C.Y. Thomas: Dependence and transformation, New York, 1972.

3/ For the sake of tractability, the producing sectors were consolidated into an 18 - order classification system. See Table 1.

between the orderings of forward and backward linkages for all the policy variables under consideration. In particular, the ranking are almost identical for the foreign exchange effects. The sectors ranked high in terms of backward linkage effects tended to be correspondingly high in terms of forward linkages. The glaring exceptions to this rule were in regard to export crops (1), mining (4) and basic services (15, 16, 17). Exportable crops and mining industries showed high values of the backward linkage index in all the policy categories, but were below the national average in terms of forward linkage effects for both income and employment. The service sector generally were ranked highly by the income forward linkage measures but were low by the corresponding backward measures.

This discussion, so far, has abstracted from the long-run policy objectives of industrialization for Tanzania which is the development of the basic industries. The overall performance of these basic industries in terms of three policy criteria (maximize income, employment and foreign exchange earnings) was summarized by Kim in a set of Venn diagrams (see Figure 1). Since the income effects are closely correlated with the foreign balance effects in a positive direction, the two maximizing sets were combined into one set in the figures.

Among the set of basic industries only food and food processing industries (2 and 5) met the three policy goals simultaneously in both measures of linkage. Textile (16) qualified for this category in the measure of backward index. The value of the backward index, however, was barely above the medium of all industries.

The bulk of the basic industries - services, public utilities and construction sectors - are relatively heavy users of labour with a favourable impact on employment for the long run. However, with the important exception of food and its related industries, the basic sectors are also heavy users of foreign exchange with a minimum impact on domestic value added. This essentially shows an important aspect on the constraints imposed by the structural characteristics of the economy upon a policy aimed at basic industrialization for Tanzania.

Table 1: 18-order classification of Tanzanian industries

		Industry Code Number in '45 Order' classification scheme
1.	Export crops	2, 4, 6, 7, 8
2.	Domestic agricultural goods	1, 3, 5, 9, 10, 11
3.	Fishing, forestry and hunting	12, 13
4.	Mining	14, 15
5.	Food processing, beverages and tobaccos	16, 17, 18
6.	Textile and clothing	19, 20, 21
7.	Wood products and paper	22, 23
8.	Chemicals and petroleum	24,
9.	Metal and non-metal	25, 28
10.	Railway, automobile workshops	26, 27
11.	Small scale industries	29, 30, 31
12.	Electricity and water	32
13.	Construction	33
14.	Hotel and restaurants	35
15.	Transport and communication	36, 37
16.	Business services	34, 38, 39, 40, 44
17.	Public services	41, 42, 43
18.	Unspecified	45

Table 2. Backward linkage indices

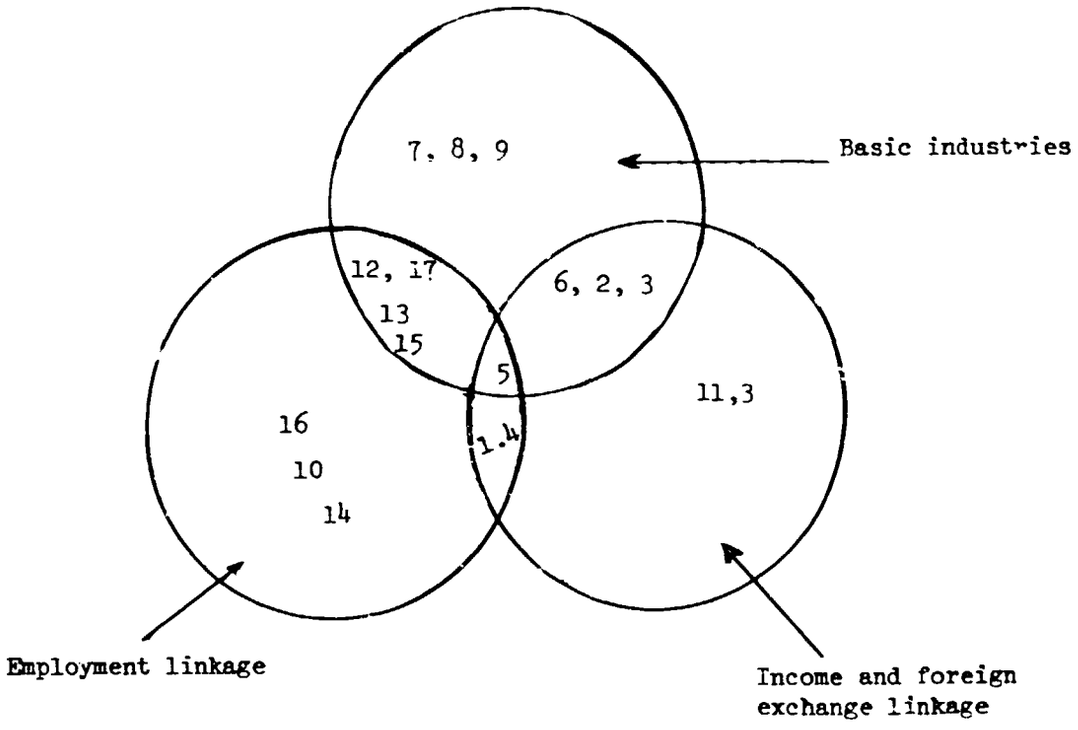
Industry	Income	(Rank)	Employment	(Rank)	Trade balance	(Rank)
1	2.6262	1	0.6834	5	2.9798	1
2	2.5833	2	0.5856	10	0.0058	10
3	2.4361	3	0.4951	14	0.4951	4
4	2.3098	4	0.7150	3	1.3634	2
5	2.2792	6	0.5346	12	0.4514	5
6	2.1224	9	0.5297	13	1.2511	3
7	1.7924	15	0.5785	11	-0.2433	16
8	1.4015	17	0.4098	17	0.1436	8
9	1.4113	16	0.4642	16	-0.4011	18
10	1.8100	14	0.6524	8	-0.3793	17
11	2.2924	5	0.4953	15	0.2867	6
12	2.0671	12	0.6607	7	-0.0637	11
13	1.8184	13	0.6688	6	-0.1626	13
14	2.2284	7	0.6135	9	0.1535	7
15	2.0717	11	0.7079	4	0.0630	9
16	2.2011	8	0.7757	2	-0.1957	14
17	2.1172	10	1.0067	1	-0.1959	15
18	0.0628	18	0.0089	18	-0.1366	12

Table 3. Forward linkage indices

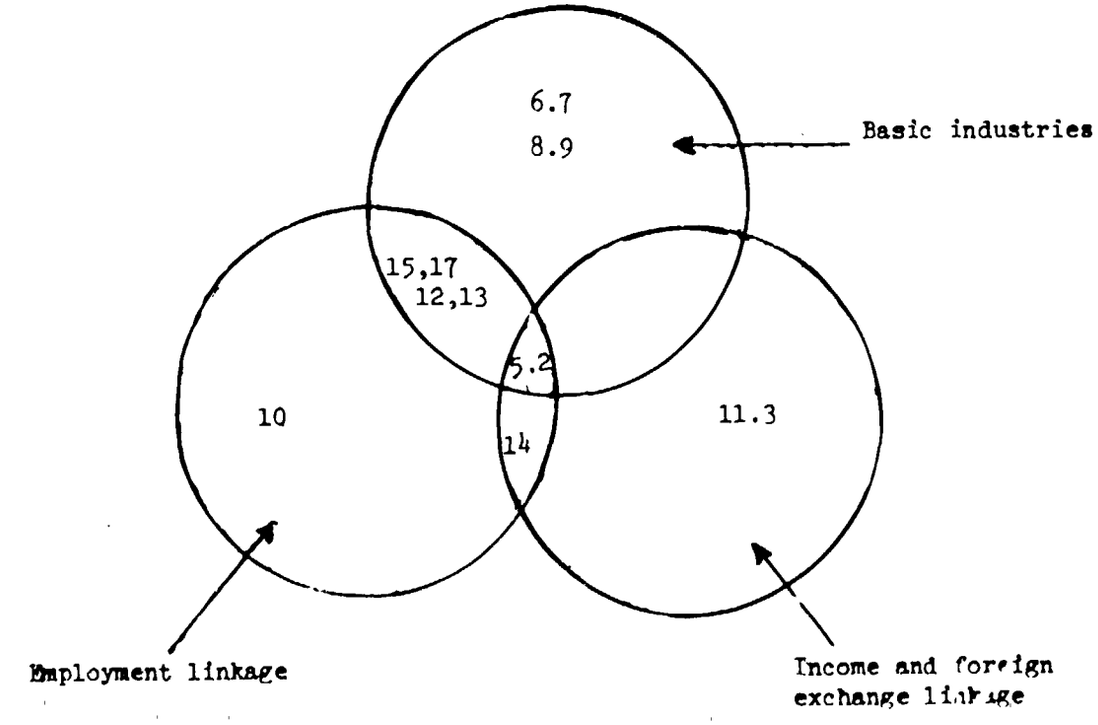
Industry	Income	(Rank)	Employment	(Rank)	Trade balance	(Rank)
1	0.7758	13	0.2666	12	0.8817	1
2	4.5593	1	0.4444	6	0.1009	10
3	2.4147	4	0.1452	17	0.4980	5
4	0.6649	16	0.2402	14	0.6773	2
5	1.9848	6	0.3145	9	0.4070	6
6	9.9547	11	0.3117	10	0.5353	4
7	0.6779	15	0.2908	14	-0.2498	19
8	0.7757	14	0.2243	15	0.2813	8
9	0.5458	17	0.2416	13	-0.4266	17
10	0.8686	12	0.3686	7	-0.3999	16
11	1.3857	8	0.1509	16	0.5947	3
12	1.5470	7	0.6498	5	-0.2418	13
13	0.9565	10	0.7132	4	-0.5550	18
14	1.0646	9	0.3408	8	0.2156	9
15	3.5598	3	1.6856	2	0.3130	7
16	4.2269	2	1.4289	3	-0.1871	12
17	2.3183	5	2.2477	1	-0.3262	15
18	0.0274	18	0.0000	18	-0.1547	11

Figure 1. The standing of the basic industries in the linkage effect

(A) Backward linkage



(B) Forward linkage



Production of major crops in Tanzania, 1972/73-1979/80

('000 metric tons)

Crops	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80
A. CASH CROPS								
Coffee:								
Total production	47.5	42.4	52.1	55.4	48.7	52.5	49.6	46.8
Export	63.0	39.4	48.0	61.4	44.9	49.4	45.4	31.2
Local consumption	2.0	0.6	0.6	1.5	1.5	1.6	0.8	n.a.
Cotton (seed cotton):								
Production	230.2	195.0	221.0	126.0	194.7	168.1	166.5	177.8
Export of cotton lint	50.1	50.1	39.5	42.2	51.6	30.1	39.2	31.4
Cotton lint for local mills	n.a.	10.8	14.7	11.5	8.1	14.4	14.3	19.0
Tobacco:								
Production (wet leaf)	13.1	12.6	18.3	14.2	19.1	18.4	17.1	17.2
Export sales	8.6	13.1	6.0	8.4	12.3	11.5	10.4	6.1
Local sales	3.6	2.7	3.9	3.7	2.2	1.0	4.5	4.3
Sisal (on calendar year):								
Production	156.9	155.4	143.4	127.8	119.1	105.0	91.9	81.4
Export of fibre anf flume (excluding sisal products)	153.1	113.4	93.4	101.5	90.3	68.0	79.2	76.1
Pyrethrum:								
Production	4.0	3.3	4.7	3.9	3.3	2.5	1.6	1.6
Export of extract powder	3.2	2.5	2.8	3.7	1.4	3.0	1.1	0.7[a/]
Local sales	0.1	0.05	0.1	0.2	1.0	1.7	0.3	0.3
Tea:								
Production	13.3	12.3	13.9	13.1	15.2	18.5	17.5	17.3
Export	9.2	9.5	9.7	10.4	12.0	12.0	14.9	15.0
Local sales	2.5	2.6	2.2	2.2	3.0	4.1	3.3	2.1

(contd.)

Production of major crops in Tanzania, 1972/73-1979/80

('000 metric tons)

Crops	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80
Cashenuts:								
Production	125.2	145.1	110.5	78.5	93.3	68.5	57.1	49.0
Export	90.2	77.0	120.1	97.1	58.0	97.3	42.3	n.a.
Local sales	n.a.	22.1	12.1	22.7	18.4	20.1	24.6	n.a.
Oil seeds:								
Groundnuts:								
Production	3.5	1.4	0.5	0.5	0.4	1.5	2.6	5.5
Sesame:								
Production	7.3	6.6	5.8	5.9	7.5	6.6	6.6	3.9
Sunflower seeds:								
Production	9.5	6.3	7.0	5.9	4.7	7.2	12.1	15.6
Castor seed:	10.							
Production	10.2	5.2	3.4	2.2	2.4	2.2	1.7	1.3
Soya beans:								
Production	n.a.	n.a	0.8	0.05	0.9	0.6	1.1	1.0
Cardamom:								
Production	0.8	0.8	0.6	0.4	0.4	0.3	0.3	0.4
Copra:								
Production	n.a.	n.a.	0.6	0.06	2.1	3.1	1.0	0.6
B. FOOD CROPS								
Sugar products:								
Production	92.3	106.4	114.4	95.7	114.5	104.7	123.0	105.7
Exports	n.a.	n.a.	n.a.	29.3	110.7	10.9	14.0	n.a.
Imports	n.a.	n.a.	n.a.	11.0	19.4	22.5	22.0	n.a.

(Contd.)

Production of major crops in Tanzania, 1972/73-1979/80

('000 metric tons)

Crops	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80
Maize:								
Purchases	106.5	73.6	24.9	91.1	124.0	213.1	222.3	161.2
Paddy:								
Purchases	73.1	59.7	23.6	11.7	16.0	24.6	26.9	29.7
Wheat:								
Purchases	47.0	28.0	15.2	25.8	27.1	35.0	27.5	26.7
Sorghum:								
Purchases	n.a.	n.a.	n.a.	2.9	10.7	33.6	59.8	20.8
Millet:								
Purchases	n.a.	n.a.	n.a.	2.2	10.9	39.2	11.0	16.8
Beans:								
Purchases	n.a.	n.a.	n.a.	7.5	10.2	31.7	28.3	35.2
Cassava:								
Purchases	14.3	19.0	18.9	17.6	19.7	36.9	63.8	44.0

Source: Bulletin of Crop Statistics. Government of United Republic of Tanzania, Ministry of Agriculture, August 1980.

a/ Data from Price Policy Recommendations for year 1980/81, Agriculture Price Review.

Value added of agricultural processing industries

(TShs. million at current prices)

Industrial activity	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Food manufacturing	120	152	180	200	228	221	224	n.a.	268.1	313.3	296.4
Beverages	44	73	62	49	60	186	245	n.a.	403.6	502.6	475.4
Tobacco	48	41	54	67	83	204	289	n.a.	325.6	360.9	341.4
Textile	125	110	166	194	161	204	220	n.a.	407.4	615.2	582.0
Total contribution	337	376	492	510	532	825	978	1,000.9	1,404.7	1,792.0	1,695.2
Total GDP	82,150	88,570	10,032	11,490	14,010	16,988	20,606	26,123	29,863	34,106	32,630
Percentage contribution to GDP	4.10	4.25	4.61	4.44	3.80	4.86	4.75	3.83	4.70	5.25	5.20

Source: National Accounts of Tanzania 1966-1976
1978 figures from Minister of Industries, speech to Parliament 1979/80
1979 figures from Minister of Industries, speech to Parliament 1980/81
1980 figures from Minister of Industries, speech to Parliament 1981/82

Total production of most important minerals, 1970-1979

Mineral	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Diamonds (gms)	141,628	167,438	148,178	100,291	99,069	99,600	87,600	81,500	59,161	58,253
Gold (refined)(gms)	244,445	5,184	6,621	1,726	2,218	2,400	300	-	10,999	8,775
Silver (gms)	34,281	1,125	1,602	115	87	-	-	-	-	-
Coal (mt)	2,664	2,797	3,464	1,994	1,551	-	-	-	7,000	7,000
Glass sand (mt)	3,987	52	11,311	15,233	14,875	-	-	-	-	-
Lime (mt)	6,437	5,202	1,818	5,987	4,820	-	-	-	5,129	6,111
Salt (mt)	41,994	37,278	44,247	38,176	34,176	45,000	57,000	39,000	38,608	37,464
Gypsum (mt)	-	-	14,906	12,871	21,123	12,839	37,149	7,941	20,205	9,952

Source: Ministry of Mining - Geology and Mines Division - Dodoma, March 1981
Bank of Tanzania Reports; STAMICO; and Economic Survey 1979/80

Electric power installation and sales, 1977-79

Branches	Power installed (MW)				Power sales (million KWh)			
	1977	1978	1979	Percentage change 1978/79	1977	1978	1979	Percentage change 1978/79
Coast:								
Dar es Salaam	61,641	61,641	61,641	0.00	302,84	364,93	375,42	2.87
Morogoro (Kidatu)[a/]	100,000	100,000	150,000	50.00	21,13	23,04	31,00	34.54
Tanga	38,500	38,500	38,500	0.00	62,77	62,73	68,51	9.21
Arusha/Moshi:								
Arusha	3,700	3,700	3,700	0.00	38,89	42.94	48.76	13.55
Moshi	9,960	9,960	9,960	0.00	15,75	18.33	23.13	26.18
Sub-total	13,660	13,660	13,600	0.00	54.64	61.27	71.89	17.33
Other branches:								
Bukoba	1,150	1,150	1,360	18.26	2.90	2.78	3.55	27.69
Dodoma	2,895	3,370	3,555	5.48	7.30	7.82	9.01	15.21
Iringa	1,970	1,970	1,970	0.00	4.96	6.67	6.10	8.55
Kigoma	0,980	0,980	0,980	14.18	1.99	2.68	3.66	36.56
Lindi	0,640	0,640	0,640	16.40	1.71	1.40	1.47	5.00
Mafia	0,780	0,780	0,780	0.00	0.62	0.69	0.91	31.88
Mbeya	1,715	3,040	3,040	0.00	5.53	5.15	5.56	7.96
Mpwapwa	0,370	0,415	0,415	0.00	0.47	0.58	0.56	-3.34
Mtwara	4,135	4,135	4,135	0.00	2.87	2.91	3.51	20.61
Musoma	0,890	0,890	1,890	112.35	3.38	3.16	3.47	9.81
Mwanza	9,000	27,000	27,000	0.00	30.25	25.52	54.27	112.65
Nachingwea	0,680	0,680	0,950	39.70	0.90	1.06	1.01	-4.72
Shinyanga	1,300	1,630	1,660	1.84	3.04	2.96	3.49	17.90
Singida	0,480	0,480	0,690	43.75	0.97	1.15	1.35	17.39
Songea	0,660	0,930	0,930	0.00	1.10	1.56	1.83	17.30
Sumbawanga	-	-	0,972	-	-	-	-	-
Tabora	2,695	2,695	2,695	0.00	4.96	6.14	5.88	-4.24
Tukuyu	1,200	1,200	1,200	0.00	1.30	3.13	3.58	14.37
Tunduru	-	-	0,447	-	-	-	-	-
Sub-total	31,540	51,985	55,553	6.86	74.25	75.36	109.21	44.49
Grand total	245,341	265,792	319,360	20.15	515.63	587.33	656.03	11.69

Source. Economic Survey 1979-80.

a/ The Kidatu Power Plant in Morogoro is now 200 MW as from 19 February 1981.

Electricity sales by user, 1969-1979

(million KWh)

Year	Domestic use	Commercial use	Maximum demand	Light industrial use	Public lighting	Total sales	Power station use and transmission losses	Total units generated
1969	58.15	42.45	187.66	15.06	3.46	306.78	51.54	358.32
1970	61.34	45.96	213.12	16.81	3.80	341.03	54.93	395.96
1971	63.57	48.92	257.81	17.20	4.04	391.54	54.09	445.63
1972	67.91	51.03	263.92	17.26	4.13	404.25	69.33	473.58
1973	73.40	53.40	281.80	18.80	4.50	431.40	82.50	513.90
1974	75.[illegible]	57.03	302.95	18.90	4.56	458.87	76.90	535.77
1975	86.16	56.49	318.79	19.85	4.96	486.25	74.60	560.85
1976	85.78	57.42	323.51	18.75	4.60	490.06	100.20	590.26
1977	93.22	60.40	336.47	20.78	4.73	515.60	96.57	612.17
1978	112.27	64.15	381.54	24.09	5.58	587.63	31.88	619.51
1979	130.61	70.97	402.99	32.51	4.81	641.89	115.39	757.28

Source: Economic Survey 1979-80.

Known mini hydro-electro stations in Tanzania

Place	Type of turbine and manufacture	(Metres)	Capacity
Kitai-Songea	Michell by Ossberger	9.5	45
Nyagao-Lindi	Michell by Ossberger	6.7	15.8
Isoko-Tukuyu	Michell by Ossberger	42.0	11.5
Uvemba_Njombe		7.4	101.0
Bulongwa-Njombe		13.5	180.0
Raengesa-Sumbawanga		33.0	44.0
Rungwe-Tukuyu		27.0	21.2
Nyagao-Lindi		7.08	38.8
Peramiho-Songea		5.2	34.6
Isoko-Tukuyu		20.0	7.3
Ndanda-Lindi		45.0	14.0
Ngaresero-Arusha		4.5	15.0
Sekoroni-Soni	Horizontal axis: Francis	70.0	6.3
Mbarali-Mbeya	Bopellar type: (China)	6.0	200.0
Kitai-Songea		4.5	56.3
Ndolage-Bukoba		125.0	55.0
Ikonda-Njombe		19.0	40.0

Source: Energy Policy in Tanzania by IIED, London, August 1980.

Register of small rivers investigated for small hydro-potential in western Tanzania

Name of river	District of Location	Capacity (MW)
1. Yungu	Mbinga	0.09
2. Mbawa	Mbinga	1.0
3. Luwika	Mbinga	1.4
4. Luaita (Mbinga)	Mbinga	0.19
5. Upper Ruvuma	Songea	2.0
6. Hanga	Songea	0.55
7. Lilondi	Songea	1.4
8. Kitiwaka	Njombe	5.1
9. Malisa	Njombe	1.25
10. Kiwira (up stream)	Kyela	3.0
11. Lupa	Chunya	2.8
12. Waku	Chunya	2.5
13. Yeye	Chunya	2.5
14. Lukima	Mpanda	4.0
15. Mtozi	Ufipa	2.4
16. Mbede	Ufipa	1.24
17. Mamba	Ufipa	0.15
18. Kilongo	Ufipa	0.41
19. Mpete	Ufipa	0.05
20. Chulu	Ufipa	0.85
21. Kirambo	Ufipa	0.28
22. Muse	Ufipa	0.52
23. Luiche	Ufipa	1.1
24. Milepa	Ufipa	0.4
25. Mba	Ufipa	3.0
26. Kilemba	Ufipa	0.53
27. Kawa	Ufipa	2.0
28. Luamfi	Ufipa	1.2
29. Mtambo	Mpanda	2.4
30. Mkuti	Kigoma	0.63
31. Ruchungi	Kigoma/Kasulu	1.0

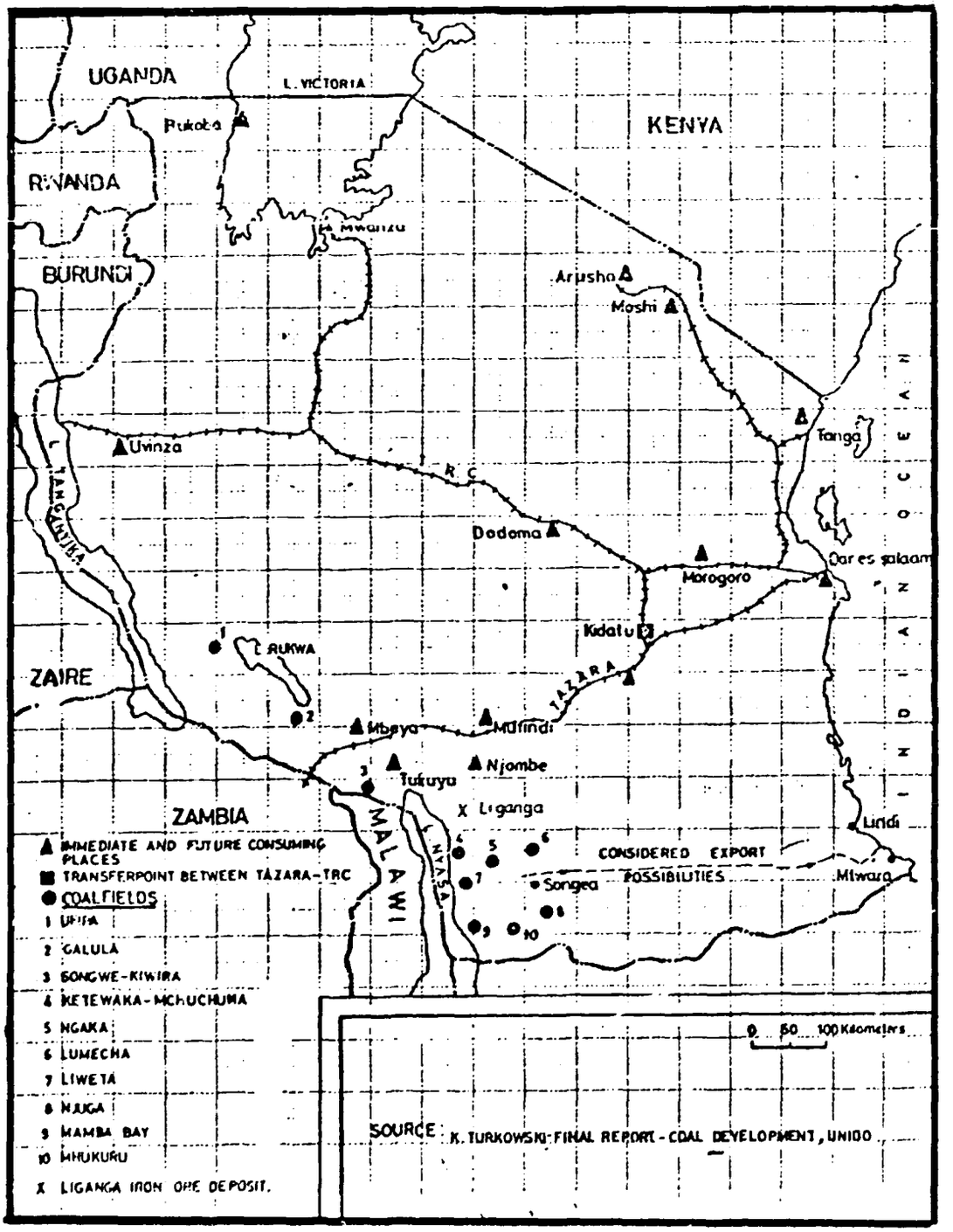
Source: Energy Policy in Tanzania by IIED, London, August 1980.

Tanza. coal prodcution and consumption, actual and projected, 1979-1985

	Actual	Projections					
	1979	1980	1981	1982	1983	1984	1985
A. Production: (tons)							
Ilima Colliery	7,000	7,000	20,000	20,000	20,000	20,000	-
Songwe-Kiwira	-	-	-	-	50,000	100,000	300,000
Total (A)	7,000	7,000	20,000	20,000	70,000	120,000	300,000
B. Consumption:							
Mbeya Cement	-	-	24,000	34,000	34,000	34,000	34,000
Pulp and paper project	-	-	-	-	17,000	26,000	29,000
TANESCO	-	-	-	-	-	-	130,000
Tea (Katumba and Mwakaleli Tukuyu)	2,127	5,000	6,000	7,000	8,000	9,000	10,000
Tea (Chivanjee and Musekera Tukuyu)	2,971	1,000	1,000	1,000	1,000	1,000	1,000
Tobacco growers (Iringa)	665	1,500	2,000	3,000	3,000	3,000	3,000
Tobacco processing (Morogoro)	-	-	1,000	2,000	2,000	2,000	2,000
Otehr and contingency	390	5,000	6,000	7,000	8,000	9,000	15,000
Total (B)	6,151	12,500	40,000	54,000	75,000	84,000	224,000
Shortfall (-)/Surplus (+)	+849	-5,500	-20,000	-34,000	-3,000	+36,000	+72,000

Source: Coal Development, State Mining Corporation, by Karol Turkowski, UNIDO Expert on Coal, December, 1980.

LOCATION OF COAL FIELDS IN TANZANIA



Estimated consumption of firewood and charcoal, 1970

	Thousand m^3 (roundwood equivalent)		
	Mainland	Zanzitar	Total
Household			
Rural	26,384	628	27,012
Urban	1,216	148	1,364
Total	27,600	776	28,376
Non-household			
Total consumption	29,700	800	2,100
Per capita consumption (m^3) in household	2.1	2.0	2.1
Non-household	0.2	0.1	0.2
Total	2.3	2.1	2.3
Breakdown of consumption into firewood and charcoal			
Firewood			
Rural	26,124	621	26,745
Urban	706	105	811
Total	26,830	726	27,556
Charcoal			
Rural	260	6	266
Urban	510	44	554
Total	770	60	720

Source: "Energy Policy in Tanzania", by IIED, London, August 1980.

Note. The figure of 2.1 m^3 per head is almost double that found in the 1961 survey. It is also considerably higher than the estimate given by Regional Officers to the members of the study team in different areas of the country. The range of these estimates was 1.1 m^3 to 1.7 m^3 per head.

Appendix 4:K

Village afforestation, 1973-1979

(Hectares)

Region	1973	1974	1975	1976	1977	1978	1979
Arusha	143	221	502	40	71	396	-
Dar es Salaam	-	-	-	-	-	-	-
Dodoma	160	315	318	328	469	682	620
Iringa	81	68	36	66	331	553	-
Kigoma	4	22	10	-	106	-	117
Kilimanjaro	-	-	-	-	471	383	601
Lindi	-	-	-	-	-	85	106
Mara	-	-	-	-	691	768	650
Mbeya	236	280	242	185	143	337	853
Morogoro	10	37	32	114	80	-	335
Mtwara	-	-	-	-	60	139	-
Mwanza	-	-	-	-	325	194	440
Rukwa	-	-	-	-	229	490	-
Ruvuma	-	-	-	-	-	-	609
Shinyanga	118	175	60	213	-	1,142	685
Singida	214	231	358	401	107	439	768
Tabora	92	39	54	197	53	-	456
Tanga	-	-	-	-	102	129	-
Kagera	-	-	-	-	33	-	-
Coast	-	-	-	-	148	253	-
Total	1,066	1,588	1,612	1,544	3,771	5,880	6,473

Source: "Economic Policy of Tanzania", by IIED, London, August, 1980

Biogas plants installed by the Small Industry Development Organization (SIDO)

Location	Established	Capacity
1. Misungwi Rural Training Centre Mwanza District	Jun 1975	3 m^3
2. Ngudu Health Centre Kwimba District	June 1975	4 m^3
3. TANU Ideological College Murutunguru	August 1975	3 m^3 (2 plants)
4. District Health Centre, Magu District	August 1975	2 m^3
5. Rural Medical Aid, Sengerema District	October 1975	2 m^3
6. Butiama Ujamaa Village Mara	September 1975	8 m^3
7. Maiya Prison, Shinyanga	October 1975	3 m^3 (3 plants each)
8. Arusha Prison	1975	2 m^3
9. Monduli Juu Primary School Monduli District	July 1975	4 m^3
10. Rural Training Centre, Monduli District	1976	6 m^3
11. Hanang, Arusha	1976	3 m^3
12. Kiteto, Arusha	1976	3 m^3
13. Mbulu	1975/76	4 m^3
14. Kindai Holding Ground, Singida District	March 1976	3 m^3
15. Urambo, Tabora	February 1976	4 m^3
16. Chamwino, Dodoma	1976	3 m^3
17. SIDO Pavilion - Azimio Ground, Arusha	February 1977	4 m^3

Source: SIDO.

Note: Data beyond February 1977 not available.

Appendix 4:M

Levels of self-sufficiency and localization of high and middle level manpower in the Tanzania civil services, 1961-1978

Year	Citizens	Non citizens	Total	Established posts	Level of localization (%)	Level of self-sufficiency (%)
1961	1,170	3,282	4,452	6,035	26.4	19.4
1962	1,821	2,783	4,723	6,409	38.6	28.4
1963	2,469	2,580	5,049	6,729	48.9	36.7
1964	3,083	2,306	5,389	7,276	57.2	42.4
1965	3,951	2,011	5,962	8,019	66.3	49.3
1966	4,364	1,898	6,262	9,006	69.7	48.5
1967	4,937	1,817	6,754	9,911	73.1	49.8
1968	6,208	1,619	7,827	10,921	78.3	56.8
1969	6,123	1,351	7,474	11,024	81.9	55.5
1970	8,042	1,377	9,419	14,300	85.4	56.2
1971	9,708	1,015	10,723	16,393	90.5	59.2
1972	11,988	745	12,733	20,331	94.1	58.9
1973	12,600	800	13,400	19,877	94.0	63.4
1974	15,182	1,001	16,183	25,788	93.8	58.9
1975	16,851	1,235	17,250	26,803	93.1	59.9
1976	15,689	1,116	16,805	28,091	93.4	60.1
1977	15,699	1,109	16,808	n.a.	93.4	n.a.
1978	15,700	1,110	16,810	29,779	93.4	77.2

Source: Ministry of Manpower Development.

SIDO training centres

Place	Activities
1. Dodoma	- Sheet metal, machine operation gobar gas, etc.
2. Azimio-Tabora	- Weaving, carpentry, metal works
3. Lanzoni	- Fruit and vegetable preservation
4. Njombe	- Bamboo crafts, mats and carpets
5. Kilosa	- Oil extraction, soap making
6. Usseri-Rombo	- Utamaduni wa vibuyu (gourd crafts)
7. Mbeya	- Pottery and ceramics, bricks and tiles, gobar gas, lime pozzolana
8. Mwambisi	- Bricks and tiles
9. Kibaha	- Hand-made paper
10. Usangi	- Industrial workshop; carpentry, sheet metal
11. Mandaka	- Polytechnica centre

Source: SIDO.

Production and future plans for selected industries

Industry	ISIC No.	Units	Pysical production		Installed capacity 1980	Planned Production 1985	Demand (local)	
			Average production 1975-1979	1980			1980	1985
1. Sugar	3118	000 mt		123	176	230,000	207	304
2. Cashew processing	3121	000 mt		22	41		n.a.	n.a.
3. Beer	3133	000 litres	75,000	64,000	103,000	208,500	119,680	275,000
4. Tobacco	3140	000,000 pieces	4,000	4,900	7,200	7,200	5,300	n.a.
5. Sisal spinning	3215	000 tons	-	n.a.	5,500	n.a.	n.a.	
6. Textiles	3211	000 m	84,000	84,000	160,000	222,000	157	172
7. Clothing (garment)	3220	000 pcs		288	1,500	n.a.	n.a.	n.a.
8. Foot wear	3240 3559	000 pairs	4,400	5,300	14,900	14,860	n.a.	n.a.
9. Leather	3231	000 m^2		14,000	34,400	34,400	n.a.	n.a.
10. Wood products	331	000 m^3		105	280		n.a.	n.a.
11. Fertilizers	3512	000 mt	46	54	145	n.a.	n.a.	n.a.
12. Petroleum refining	3530	000 mt	617	566	750	1,600	779	1,028
13. Paints	3521	000 litres		1,400	5,600			
14. Soap and detergent	3523	000 mt		50	-		204	232
15. Plastic products	3560	m. tons			11,200			
16. Tyres	3551	000 numbers		430	540		748	
17. Glass	3620	m.tons			23	44	58	101
18. Ceramics	36	000 mt	-	-	-	2,400	1,310	1,520
19. Cement	3622	000 mt	264	326	1,100	1,350	968	1,449
20. Iron and steel	3710	000 mt	-	52	125	125	165	269
21. Aluminium	3720	000 mt	3.8	4.0	12	12	n.a.	-
22. Metal fabricatopm	3800-42	000 mt	n.a.	2.5			8.5	1,300
23. Motor vehicles	384	Nos.		1,107	4,500	12,020	18,000	22,000

Sources: Ministry of Industries budget speech Bureau of Statistics, TISCO various reports and estimates.

Demand forecast for selected metal products, 1980-2000

	Classification/metal product	Growth rate per annum	Unit	Demand			Proposed plant capacity	Remarks
				1980	1990	2000		
1.	ISIC 381-metal fabrication							
1.1	Gas cylinders	3%	Nos.	12,000	16,000	21,500	20,000	
1.2	Wire products							
1.2.1	Drawn wire	1980-88 - 10% 1988-2000 - 4%	M.T.	23,490	50,000	75,000	Review in 1985	
1.2.2	Wire products including nails	"	M.T.	12,750	28,750	42,500	-	
1.3	Drums	10% up to 1985 5% up to 1990 3% up to 2000	Nos.	230,000	510,000	685,000	400,000	
1.4	Wire (electrical) cables							
1.4.1	ACSR and AAC conductors	5%	M.T.	521	650	650	350,000	Additional capacity
1.4.2.	Copper wire	5%	M.T.	673	1,200	1,500	400,000	Additonal capacity
1.4.3	Stranded G.I. wire	8%	M.T.	200	290	425	350,000	
1.5	Heavy structure, vessels and boiler shops	Average per year	M.T.	42,500 (1980-85)	65,000 (1985-00) 14,000		10,000 Review in 1985	
1.6	Package boiler		Nos.	65	70	75	50 Review in 1990	Total capacity of 192 million caps available with metal box where existing capacity utilization is only 50 per cent
1.7	Tin cans							
1.8	Hand tools Springs Stoves Cutlery Utencils Fasteners and builders hardware, including bolts and nuts Metal stampings Light fixtures Safe valut manufacture Metal furniture Buckets, tanks etc.							A little capacity exists and these fall under medium- and small industries These are therefore left to be developed by SIDO
1.9	Transmission towers		M.T.	3,000	3,000	4,500	3,000	
1.10	Crown corks	6%	Million	463	830	1,485	Review	

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(cont'd.)

	Classification/metal product
2.	ISIC - 382
2.1	Diesel engines
2.2	Pumps - surface, borehole
2.3	Machine tools
2.4	Sewing machines
2.5	Industrial furnaces
2.6	Road roller
2.7	Hot mix
2.8	Concrete mix
2.9	Mining machinery such as mini tube cars, winches
2.10	E.O.T. crane up to 20 ton
2.11	Tower crane
2.12	Stone crushing and quarry equipment
2.13	Sealed units
2.14	Garage compressor
2.15	Blower and exhaust fans
2.17	Dairy equipment - cheese presses, cheese separator Dough mixer
2.18	Food and canning machinery
2.19	Laundry presses
2.20	Household washing machines
2.21	Flour mill equipment like maize hullers, small mill, separators etc.
2.22	Weigh bridge and weighing
2.23	Spare parts for: Mining machinery Sugar machinery Sisal machinery Textiles Leather Tea and coffee machinery Flour mills, oil mills Cement Paper mills Chemical plant Beverages Dairies
2.24	

Growth rate per annum	Unit	Demand			Proposed plant capacity	Remarks
		1980	1990	2000		
6%	Nos.	1,000	1,800	3,200	1,500	
6%		2,500	4,500	8,000	4,000	
up to 1990 8% after 2000 5%		2:0	540	900	400	
3%	Nos.	5,000	6,700	9,250	5,000	
	Nos.	-	-	-	10	
	Nos.	20	35	50	25	
	Nos.	20	35	50	25	
	Nos.	40	65	100	50	
	Nos.	-	-	-	200	
	Nos.	10	16	20	10	
	Nos.	10	15	20	10	
5%	Nos.	1,000	1,650	2,700	1,500	
3%		40	55	75	40	
2%	Nos.	15	20	25	10	
	M.T.					
	M.T.				10	
					Review 1988	Small capacities exist. These items could be developed by SIDO
5%	Nos.	100	160	250	Review 1988 100	
	Nos.			20		

(Contd.)

	Classification/metal product	Growth rate per annum	Unit	Demand 1980	Demand 1990	Demand 2000	Proposed plant capacity	Remarks
2.24		As per Appendix 5:C						
3.	ISIC - 38.							
3.1	Electrical appliances:							
	Toaster	6% up to 1990 4% beyond 1990	Nos.	8,000	14,000	21,000	To be developed by SIDO/ DARCO	
	Iron		Nos.	20,000	38,000	56,000		
	Cooking range		Nos.	3,000	5,000	7,000		
	Electric kettle		Nos.	8,000	14,000	21,000		
	Hot plate		Nos.	5,000	9,000	13,000		
	Water heater		Nos.	6,000	11,000	17,000		
3.2	Electircal	8% up to 1990 5% beyond 1990	Nos.	1.0 m	2.0 m	3.25 m	To be developed by SIDO/ DARCO	
3.3	Transformer	6%	Nos.	440	780	1,400	640	
3.4	Switch gear	2%	Nos.	200	245	300	130	
3.5	Motor starter	5%		2,400	3,900	6,350	2,400	
3.6	Miniature ciruit breakers	6%	Nos.	1,750,000	315,000	564,000	50,000	
3.7	Electric fans	10%	Nos.	22,000	24,000	26,500	1,500	
3.8	Electric motors	5%	Nos.	2,400	3,900	6,350	3,000	
3.9	Electric meters	6%	Nos.	26,400	47,300	847,000	24,000	
3.10	Welding transformer	4%	Nos.	100	125	160	100	
3.11	Welding electrode	10%	M.T.	1,100	2,400	4,000	1,200	
4.	ISIC - 384:							
4.1	Light commercial vehicles, less than 5 tons	7%	Nos.	9,590	18,700	6,800	8,000 (Two shift basis)	
4.2	Tractors	5%	Nos.	1,300	1,550	1,900	1,500 (single shift)	
4.3	Heavy commercial vehicle, above 7 tons	7%	Nos.	1,850	3,600	7,500	2,000	
4.4	Bicycles		Nos.	100,000	179,000	320,000	Review 1985	
4.5	Motor cycles	6%	Nos.	3,000	5,400	9,700	3,000	
4.6	Boats, 250/500 tons capacity			2	5	10,000	10,000	
4.7	Railway wagons	4%	Nos.	436	474	635	400	
4.8	Conveyors	Adhoc	M.T.	-	-	-	50	
4.9	Lifts	Adhoc	Nos.	2	3	5	-	
4.10	Trailers and low loaders	-	Nos.	200	400	500	450	

Source: TISCO study, "Development Plan for Metal Working Industries in Tanzania," January 1981.

Agricultural implements

Implementation	Gap as per TISCO 79-70	Suggested production	Balance gap	Remarks
Hand implements				
Hand hoes	2,000,000	200,000	1,800,000	Balance requirement to be met by SIDO sponsored small-scale units and rural smith shops
Matches	3,500,000	250,000	3,250,000	
Axe	50,000	50,000	-	
Shovel	300,000	75,000	225,000	
Spade	300,000	75,000	225,000	
Cane knife	150,000)			
Sisal knife	150,000)	80,000	222,000	
Pruning shears	2,000)	10,000		
Hand sprayer	70,000	10,000	60,000	
Sickle	100,000	60,000	40,000	
Animal drawn implements				
Plough set	50,000)	20,000	30,000	Balance requirement to be met by SIDO sponsored small-scale units and rural smith shops
Harrow set	500)			
Cultivators	300			
Planter	300	2,000		
Weeder	300		300	
Tractor drawn implements				
Disk plough set	500	500		
Disk harrow set	400	1,100		
Cultivator	-	493		
Furrower		1,310		
Universal coffee ploughing machines		275		
Subsoiler planter	50	500		
Rotary cultivator	-	500		
Irrigation equipment (all in tons)				
Sprinkler, pumps and accessories	400	500		
Spare parts for agricultural machinery				

Source: TISCO study, "Development Plan for Metal Working Industries in Tanzania", January 1981.

Note: Aim is to produce more of animal drawn and tractor drawn implements so as to take up cultivation of big farm lands and improve the total out put from the agricultural sector.

Higher requirement of hand tools will slowly get reduced and also the hand tools will last longer as more and more lands are brought under mechanized cultivation.