

Tanzania: Industrial and Mining Sector Survey

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Volume III: Annex III: Current Status and Development Prospects of Engineering and Basic Metal Industries and
Annex IV: Current Status and Development Prospects of the Textile Industry

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1 Tanzanian Shilling = US\$0.14
1 US\$ = 7.14 Tanzanian Shillings

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TANZANIA
INDUSTRIAL AND MINING SECTOR SURVEY

Structure of Report

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CURRENT STATUS AND DEVELOPMENT
PROSPECTS OF ENGINEERING AND BASIC
METAL INDUSTRIES IN TANZANIA

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SUMMARY AND CONCLUSIONS

1. In spite of rapid output growth in the last decade, Tanzania's engineering sector is still in a very early stage of development. Its share in the output of, value added by, and employment in the total manufacturing sector in 1971 was 15%, 10% and 8%, respectively. Development of the engineering sector is given high priority in the Government's long-term "basic industrial strategy". This strategy aims at a gradual restructuring of the economy by linking the pattern of production more closely to domestic resource availability and local demand. The basic raw material of the engineering industry, steel, is likely to be made in Tanzania from domestic iron ore and coal starting in 1980 or thereabouts.

2. Most of the 55 registered companies operating in the engineering sector are privately owned but close to half the value of total output of the sector is accounted for by seven state owned or state controlled companies and one controlled by a Workers' Development Cooperative. There is no clear delineation of the respective roles of public and private enterprises. The perceived uncertainty concerning the future of private enterprise in Tanzania acts as a brake on the development of private engineering enterprises and has been identified by the mission as an important policy issue. Little is known about and there appear to be no policies for the development of engineering enterprises in the so-called "informal" sector. Cooperatives, of which there are very few in this field are encouraged and are eligible for government support. The number of small-scale engineering firms in the informal sector is believed to be a multiple of the officially registered ones. They provide an important training ground and tend to be efficient producers of simple engineering and fabricated metal products and repair services used, in particular, by lower income groups in towns and in rural areas. The Small Industries' Development Organization's (SIDO) program for rural mechanization and small industrial estates could provide a good basis for spreading industrial skills but the need for efficiency incentives and checks should be given greater emphasis.

3. Some exports of locally manufactured engineering products to neighboring African countries have developed in recent years but their total value is still only about \$3 million (1973) or 1% of total commodity exports. The main products are radios, dry batteries, and aluminum circles and sheets. Razor blades, welded steel pipes, fabricated aluminum products and a range of other engineering products have also been exported in small quantities from time to time. The potential for export growth is probably greater than indicated by recent export performance. There are no export incentives; public sector engineering enterprises (with the exception of one that was recently taken over from the private sector) are not export oriented and most private sector enterprises tend to hold back on expansion for a variety of reasons.

4. Although the potential for export growth should not be ignored, the main thrust for the development of the engineering sector in the immediate- and medium-term future will have to come from further import substitution which as a strategy has become more attractive in light of the Government's plan for local steel manufacturing. The mission supports the engineering industry projects that are currently being prepared by the National Development Corporation, in particular, the proposed scrap melting and billet casting furnace, the proposed machine tool plant and the expansion of farm implement manufacturing capacity. The mission identified a number of new project possibilities where the scope for import substitution is still considerable and where from a technical point of view local manufacture is believed to be within Tanzania's capability. Particular emphasis is placed on truck, bus and trailer body manufacturing. A strategy, starting with CKD vehicle assembly and leading eventually to the local manufacture of all heavy vehicle bodies and other major components is recommended. The export potential of this industry is believed to be good. The same applies to the local manufacturing of railway freight cars.

5. The mission estimates that total domestic demand for primary steel products that could be made by a local mill is unlikely to exceed 170,000 tons by 1979 but is more likely to be around 130,000 tons, even if an aggressive import substitution policy is pursued.

6. Frequent raw material supply disruption and acute shortages of managerial and many engineering skills have been identified as the main operational problems facing established industries. Supply problems could be reduced through the expansion of the storage facilities of the National Steel Corporation, by improving the information flow between this Corporation, the Agricultural and Industrial Supplies Company and their customers or by giving individual firms greater freedom to import their own requirements.

7. The local capacity to design tools and machines or to adapt imported technologies to local requirements is still very limited. An ambitious technical education program has been launched, including the establishment in 1973 of an Engineering Faculty at the University of Dar es Salaam. If successfully implemented this strategy should assure an adequate supply of skilled engineering workers and higher level technicians from about 1981. In the meantime, management and technical skill shortages are bound to remain pervasive and dependence on expatriates and imported technologies will continue. The mission suggests that renewed emphasis is given to on-the-job training programs organized by individual firms or groups of firms. The Government might consider allowing firms to set-off the cost of such programs against the 10% expatriate employment tax. Particular encouragement needs to be given to the training of production and marketing managers to improve productivity and export-orientation. Better use could be made of the management training facilities of the National Institute of Productivity.

Coverage

8. The engineering and metal fabricating industries described and reviewed in this report are broadly those defined under the International Standard Industrial classifications as:

- Fabricated Metal Products
- Machinery (other than electric)
- Electrical Machinery, Apparatus, Appliances and Supplies
- Transport Equipment

The following products are grouped under these headings:

ISIC381 Fabricated Metal Products

- 3811 - Cutlery, hand tools, general hardware
- 3812 - Furniture and fixtures primarily of metal
- 3813 - Structural metal products e.g. window frames
- 3819 - Other fabricated metal products, such as nails, nuts, bolts, cooking utensils, tin containers, metal stampings.

382 Machinery (Other than Electric)

- 3821 - Engines and Turbines for Machinery
- 3822 - Agricultural machinery and equipment
- 3823 - Metal and wood working machinery
- 3824 - Special industrial machinery e.g. mining, textiles
- 3825 - Office, computing and accounting machinery
- 3829 - Other mechanical machinery such as pumps, compressors, repair of machinery.

383 Electrical Machinery, Apparatus, Appliance & Supplies

- 3831 - Electrical industrial machinery and apparatus
- 3832 - Radio, television and communication equipment
- 3833 - Electrical appliances and housewares
- 3839 - Other electrical appliances such as dry batteries, electrical appliance accessories, electric lamps

384 Transport Equipment

- 3841 - Ship building and repairing
- 3842 - Railroad equipment
- 3843 - Motor vehicles
- 3844 - Motorcycles and bicycles
- 3845 - Aircraft
- 3849 - Transport equipment not classified elsewhere such as wheelbarrows, and baby carriages.

ISIC 385 (The Manufacture of professional, scientific measuring equipment), which generally are summarised under the heading 'Engineering Industries' are not considered in this report because domestic production in Tanzania is unlikely to be economically viable in the foreseeable future. There are at present no manufacturing facilities within Tanzania.

Organization of this Annex

9. This Annex is divided into three chapters. The first one describes and evaluates the present state of engineering industries in Tanzania. The mission was unable to gather any systematic information on small scale engineering industries in the so-called "informal" sector not covered by the census of industrial production. The analysis of existing industries is therefore essentially limited to registered companies with ten or more employees. Chapter II suggests project priorities for development of the subsector and Chapter III analyses the potential growth of domestic demand for primary steel over the next five years.

CHAPTER I: PRESENT STATUS, STRUCTURE AND EFFICIENCYPast Growth Trends

10. Gross output of the engineering sector has been growing very rapidly (25 percent per annum from 1966-1971). Its share in total output by all manufacturing industries increased from 7.7 percent in 1966 to 15 percent in 1971. Its share in total value added, however, has remained fairly constant (between 9 and 10 percent) which suggests that most of the recent growth in the engineering sector has taken place in industries where the value added is modest in relation to the value of sales. As shown in table 1 (statistical appendix) the most rapid output growth has taken place in ISIC 384 which comprises mostly bus and truck assembly works as well as vehicle repair shops. Table 2 shows the growth of value added for the same groups of industries.

11. Employment within the engineering sector has been growing rapidly. In 1971 it stood at 4,310, which was 92 percent above the 1966 level. By comparison employment within the manufacturing sector as a whole currently stands at 53,516 and the growth over the same period was only 62 percent. Whilst employment has been increasing at a rate of 14 percent per annum in the engineering sector, total labor costs have been increasing at only 16 percent over the same period. Therefore, up to 1971 real wage increases were not significant. Since that year, however, there have been several significant increases in minimum wages. An analysis of growth trends for both employment and labor costs in each subsector of engineering is shown in tables 3 and 4.

12. Gross investment in engineering and basic metal industries has shown a rather erratic pattern but the indications are that it has been growing faster than investment in the manufacturing sector as a whole, as shown in Table 5. The most important new investments that have been made in recent years are in a new 30,000 t.p.a. capacity (three shift) steel rolling mill in Tanga (completed early 1971), the continuous expansion of steel and aluminum rolling, cutting and galvanizing facilities of Aluminum Africa Ltd. in Dar es Salaam, a Philips radio assembly plant in Arusha, a National radio assembly plant in Dar es Salaam, the expansion of several tractor, truck and bus assembly plants (mostly in Dar es Salaam), and a new farm implements factory in Dar es Salaam.

13. Table 6 indicates that net imports of engineering products have been growing about 21 percent in average per annum during 1969-73 and in those years represented between 36 percent and 45 percent of the value of total commodity imports. Mechanical machinery and transport equipment comprise the bulk (about 70 percent) of engineering product imports. Imports of engineering products from East African Community partners (particularly Kenya) are very limited. They represent about 1 percent of the total and consist mostly of metal cases, drums, boxes, insulated wire cables, batteries, cells for torches and transistors, and crown corks.

Size and Location of Industries

14. According to the 1971 Survey of Industrial Production (which was the most recent survey available to the mission) there were in that year 55 establishments in the engineering sector with ten or more employees. Together these employ 3,810 people. Their size distribution (as measured by employment) is shown in Table 7. Fabricated metal products dominate the subsector both in terms of the number of establishments (40 percent of the total) and number employed (52 percent of the total).

15. Employment in the subsector is heavily concentrated in Dar es Salaam with over 80 percent of the workers. The regional distribution of engineering industries and employment in such establishments are presented in Table 8.

Company Structure and Ownership

16. Only 7 of the 55 engineering industries covered by the 1971 Survey of Industrial Production are Government owned or controlled. One is 60 percent owned by a Workers' Development Cooperative. These eight companies together employ about 45 percent of the total work force. In 1973 the Government acquired a majority interest (60 percent) in what was the largest remaining private company in the subsector, Aluminum Africa Ltd. This company is in fact one of the larger manufacturing establishments in the country, employing 650 people (1974). There is no clear delineation of private and public enterprise roles. Hence there is much uncertainty in the remaining private engineering industries which acts as a powerful disincentive for investment and growth. All major new projects in the subsector are public sector projects. The only known exception to this is a new Sh 14 million car battery factory planned to be established in Dar es Salaam by 1976 by a private Japanese/Tanzanian combination. In spite of the many uncertainties faced by private industries, a few are still expanding through the reinvestment of profits that could otherwise not be transferred to foreign shareholders because of dividend transfer restrictions. An important example of such private investment in the sub-sector is the rapid expansion of Aluminum Africa Ltd. since 1967 and especially since 1971.

17. The five largest (in terms of employment) remaining private engineering establishments in Tanzania are a radio assembly and dry battery factory in Dar es Salaam (currently employing about 600), a metal furniture factory in Dar es Salaam (employing 325), a radio assembly plant in Arusha (employing 150), a farm trailer and water tank factory in Dar es Salaam (employing 150), and a truck and bus body, metal furniture and electroplating factory in Dar es Salaam (employing 120).

18. To promote small industry development, the Government established (in 1973) a new parastatal organization, the Small Industries Development Organization (SIDO). SIDO gives overall direction to the Government's rural industrialization program and provides technical assistance to (would be) small-scale enterprises, especially those that are organized on a cooperative

basis. SIDO has an ambitious program for the establishment of a large number of rural industries, including some in the metal engineering sector. One of the main problems in executing this program is expected to be the introduction and maintenance of adequate efficiency standards and incentives. SIDO's program for small industrial estates in selected urban and semi-urban areas appears to be well conceived and should be promoted as a powerful vehicle for the spreading of industrial skills. One constraint to small industry development appears to be the Government's (and therefore SIDO's) strong preference for cooperatives as opposed to individual entrepreneurs. Only a few enterprises have been established under SIDO sponsorship so far.

The Informal Sector

19. As mentioned, Tanzania's annual surveys of industrial production include manufacturing establishments employing ten or more. Very little information is available on the very small enterprises (employment below ten) and the self employed. However, in Tanzania, like in many other developing countries, there are many very small enterprises, including a substantial number operating in the engineering sector. They produce a great variety of goods and services mainly used in rural areas and by the lower income groups in urban areas. Because such very small enterprises often operate outside the formal framework of Government regulations, taxes, minimum wages, and license requirements, they belong to what is now in the literature on economic development frequently referred to as the "informal sector".

20. According to a survey by Schadler (1968) ^{1/} the number of very small enterprises engaged in engineering and metal fabricating in Tanzania is almost three times as high (147 in 1968) as the number of such enterprises employing ten or more and operating in the formal sector. Many of the 147 very small engineering and metal fabricating firms identified by Schadler are one-man operations. Total employment provided by these industries, however, still amounts to 537, or almost 15 percent of total employment in the formal engineering sector in 1971. See Table 9.

21. The goods and services produced by the very small enterprises in the informal sector are generally of the same kind as those produced in the formal sector but they are usually less sophisticated, less well finished, and much lower priced. They include pots, pails, pans, stoves, oil lamps, all sorts of cooking utensils, metal furniture, auto and bicycle repair services, panel beating services, water repair services, etc. Frequently the raw material used is scrap metal for which there is no alternative use. From an economic efficiency point of view the very small metal transforming enterprises are often better performers than the larger import-dependent enterprises in the formal sector. It is not known whether the number of such very small enterprises operating in the informal sector in Tanzania is

^{1/} K. Schadler, Crafts, Small Scale Industries and Industrial Education in Tanzania, GFO Institute, Munich, 1968.

increasing or decreasing. The Government does not encourage private enterprise. The emphasis is placed on development through cooperatives of which there are very few in this field. The mission suggests that for the promotion of rapid development of metal using industries it is important (a) to recognize the economic contributions made by this sector, and (b) to create an environment in which it is encouraged rather than discouraged.

Fabricated Metal Products

22. This sector is dominated by three companies (Palray Ltd, Ubungo Farm Implements Ltd, and Metal Box Company Ltd.) who together employ about 50 percent of the workers in (formal sector) metal fabricating firms (22 in 1971). The three companies mentioned produce metal furniture and fixtures for offices, hospitals and schools, agricultural implements (principally hoes, ploughs and panga's), and tin containers respectively. Although rapid progress has been made in the local production of these and other fabricated metal goods (including wire products, nails, fences, metal holloware and light structural metal products such as windows and door frames), the potential for further import subsidation for many of these products remains considerable, as is evident from the import analysis in Chapter II.

Mechanical Machinery and Equipment

23. This industry consists mostly of repair shops for industrial machinery and vehicles and is geographically more dispersed than any of the other engineering industries. Only a minor part of the total production effort is related to the actual manufacture of tools, spare parts, or machinery. The largest company in this field is National Engineering Company, Ltd. in Dar es Salaam which company employs 275 (1974) and is 60 percent owned by a Workers' Development Cooperative. It is at present the only company in Tanzania with a foundry unit. An indication of what can be achieved in the field of machine tool making is provided by a small private company in Tanga (Akberali Hassanali & Sons, employing 44) producing a range of good quality timber cutting and special purpose sisal processing machinery. This is at present the only company in Tanzania which actually designs and builds industrial machinery of some sophistication. The National Development Corporation is planning to establish a subsidiary company for the manufacture of industrial tools and machines as will be discussed in Chapter II.

Electrical Appliances

24. This industry is dominated by two private firms (Philips Electronics, Ltd. in Arusha and Matsushita Electric Company, Ltd. in Dar es Salaam) who together employ 736 (1974). The Philips radio and gramophone assembly plant was established in Arusha following the so-called "Kampala Agreement" (1964) between the Presidents of Kenya, Uganda and Tanzania which allocated a number of industries among the three countries to reduce imbalance in the level of industrial development between them and to reap the benefits of production

on a larger scale for the East African Community as a whole). ^{1/} Arusha is centrally located in the East African Market. Exports of radios and gramophones from Tanzania to its EAC partners has fallen or stagnated in recent years after they also established local production capacity.

25. The domestic market for radios and gramophones has grown very rapidly and so has local production. A second radio assembly plant was established in Dar es Salaam (1970; employment approaching 600 in 1974) which also manufactures a number of component parts as well as dry batteries. Tanzania is now by and large self-sufficient in radios and gramophones. About half the total battery production is exported, mostly to Kenya and Uganda. Most other electrical machinery and apparatus, including electric motors, switch-gear, household appliances, etc. continue to be imported. Some possibilities for import substitution are considered economically feasible (see Chapter II).

Transport Equipment

26. This rapidly growing industry comprises the assembly of semi-knocked down trucks and tractors, and the manufacture of steel bus and truck bodies. The assembly of bicycles (by the National Bicycles Company, Ltd, an NDC subsidiary) is expected to commence in 1975. Nearly the entire labor force (975 in 1971) in this industry is concentrated in Dar es Salaam. From an economic point of view the manufacture of bus, truck and trailer bodies is the most interesting activity in the industry because of the high domestic value-added component in the value output. This industrial activity is currently dominated by two private firms (Burns and Blane, Ltd. and Kattar Singh and Hari Singh, Ltd.). There is good economic potential for a significant expansion of the vehicle body building industry for the local market and probably exports as well.

Basic Metal Products

27. Although basic metal industries are not normally classified as engineering industries, they have been included in this survey to give a more comprehensive picture of the metal using industries. There are only two companies of significance in the basic metal products sector. The first is Tanga Steel Rolling Mills, Ltd. (80% owned by NDC) which produces from imported billets a limited range of steel angles, flats and round bars, and concrete reinforcing bars. The factory was commissioned in 1971 and output is currently running at 10,000 t.p.a., nearly half of which is concrete reinforcing bars. The second company, Aluminum Africa Ltd, was established in the early 60's as a member of the Chandaria group. The company has grown very rapidly both through backward integration and through broadening its line of products. In 1973 the Government acquired a 60% interest in the company. Compensation payments will be used to finance a further significant expansion program, the details of which are being worked out jointly by the Government and the

^{1/} The General Tire factory (NDC subsidiary) was situated in Arusha for the same reason.

company. Current output of the rolling mills is 5,000 t.p.a. for aluminum and 16,000 t.p.a. for steel. The principal products are galvanized corrugated sheets, welded steel pipes and aluminum circles and sheets. Over 40% of the aluminum products are exported to neighboring countries in East Africa (mostly to other members of the Chandaria group). Welded steel pipes have also been exported.

Capacity Utilization

28. No systematic data is available on the degree of capacity utilization in the engineering and basic metal industries sub-sector. The impression gained by the mission is that there is much scope for increasing production through improved capacity utilization. With the exception of three companies (Matsushita Electric Company Ltd., Ubungo Farm Implements Ltd., and Aluminium Africa Ltd.) all factories in the sub-sector are working two shifts or less. A large majority work only one shift. Overall capacity utilization in the subsector is estimated at 35-50 percent of what might be achieved under ideal circumstances.

29. The under-utilization of available machine capacity is due to a variety of factors including an overall shortage of managerial personnel and skilled workers, supply disruptions and a narrow domestic market. The "narrowness" of the market, however, is a rather flexible concept. For many engineering products the potential for import substitution has by no means been exhausted and the size of the market is to some extent a function of Government procurement policy. For instance, instead of importing whole buses and trucks, the Government and its agencies could insist on the local manufacture of those parts that can be made efficiently.

The Efficiency of Local Production

30. An analysis of the inputs into the engineering industries covered by the 1971 Survey of Industrial Production reveals the following rough structure of production costs:

	<u>Materials</u>	<u>Labor Costs</u>	<u>Overheads and Selling Costs</u>
	----- percent -----		
Fabricated metal products	58	14	28
Mechanical machinery and equipment	41	23	36
Electrical apparatus and equipment	72	8	20
Transport equipment	47	8	45

31. Although the breakdown of costs for individual commodities within these four categories may be different from the averages, the available information suggests that - given the composition of production in 1971 - the domestic value added component in metal fabricating and in the production of mechanical machinery is probably much greater than in the assembly of radios and transport equipment which two activities make up the bulk of the value of output in the electrical apparatus and transport equipment industries. The principal raw materials used by the four groups of industries (steel and aluminum) have to be imported (at least for the time being). The types of skills required and the wages paid for these skills do not differ a great deal between the four groups of industries. Assuming a well-trained and disciplined labor force as well as competent management, the share of wage costs in total production costs therefore provides some measure of the economies that may be achieved through import substitution.

32. The mission has not been able to make a thorough analysis of the efficiency of local production (as compared to imports) for each of the wide variety of products manufactured in the engineering and basic metal industries. A detailed comparative efficiency analysis would be very complicated and in practice virtually impossible because: (a) raw material prices have been highly unstable in recent years; (b) some Tanzanian parastatal enterprises have been able to procure sizeable tonnages of steel from China and the USSR at lower than world market prices whereas other industries have not; and (c) the variety in kind and quality of products and services produced by the engineering industries is great, close substitutes are often not available and border prices are difficult to establish.

33. For reasons indicated in the preceding paragraph, the mission can do little more than draw some "impressionistic" conclusions about the efficiency of domestic engineering and basic metal industries. The Tanga steel rolling mill has so far not been an efficient producer mainly because: (a) the factory works on a one shift basis only; (b) large quantities of scrap generated have not been re-used, pending the completion of a scrap-melting

furnace project which is now under consideration. The mill's problems are aggravated by supply problems. It requires 80 mm. billets of which there are only few suppliers. It had to close down for three months in 1973 for lack of raw material.

34. The efficiency of the only other basic metal industry in the country, Aluminum Africa Ltd., compares favorably with similar establishments elsewhere. The company has an established export market in neighboring countries for aluminum sheets and circles. Welded steel pipes have also been exported.

35. Most engineering products attract an import duty of 20 to 30 percent. Ex-factory prices of locally fabricated metal products such as metal furniture, metal containers, aluminum and enameled holloware, pressure stoves, nails and other wire products generally compare favorably with imports of comparable quality. Most of the firms in this industry are reasonably efficient small-scale private enterprises that were established during the 50's and early 60's when protection against foreign competition was lower than it is at present. Some of their products are regularly exported to Kenya. The two radio assembly plants also produce at ex-factory prices at or below import alternatives. One company competes successfully on the Kenyan market with a local manufacturer in that country. Radio and gramophone assembly operations are technically efficient but the economic contribution made by these industries could be increased through the gradual introduction of domestic component manufacturing including initially casing and packing material. One of the two factories has already made a number of important steps in that direction.

36. The farm implements factory in Dar es Salaam has been plagued by many problems since it began operations in 1970. The company has not been an efficient producer so far, mainly because of circumstances beyond management control. Its main problems have been overstocking of imported hoes and ploughs by the former State Trading Corporation, factory layout problems due to original design errors and raw material (steel) supply disruptions. There is much scope for productivity improvement, however, and there is no inherent reason why the factory could not become an efficient producer after removal of technical bottlenecks.

37. The truck, bus and trailer body building industry is efficient but very small at present in relation to its potential. In view of the important differential in transport costs between raw steel and built-up bodies, the labor intensity and relative simplicity of the manufacturing process and the fact that small scale production units can be quite efficient, the freight body industry should be able to make a significant contribution to the development of the engineering sector. Current ex-factory prices for locally built bodies are about 30 percent below c.i.f. import prices and are comparable to those prevailing in Kenya. Even though the finishing is usually inferior to European standards (weld and grind marks clearly showing beneath the paint) the bodies are built very strongly and appear to be well suited to Tanzanian conditions.

Supply Problems

38. Raw materials used by the engineering industries are supplied by the two rolling mills, the National Steel Corporation which is a stockholder, or are directly imported by the user. In the latter case this is usually special steels such as tinplate for cans, steel for hoes, billets for rolling, aluminum ingots, etc. Merchant bars and standard sections are usually imported by the National Steel Corporation. Supply problems are pervasive. They are caused by the current world shortage of steel and by domestic problems, including delays caused by comprehensive import licensing, delays in the port, and lack of procurement experience. (Construction materials imported for East African Community Corporation projects, the Tan-Zam railway and Kidatu hydro-electric project are exempt from import licensing requirements.) Supply problems lead to excessive stocking by some firms and temporary shortages by others.

39. Import supply problems could be reduced somewhat through the recycling of domestically generated scrap metal. It is estimated that some 6,000 to 7,000 tons of recoverable steel scrap is being generated every year. Most used to be exported but the Government imposed a scrap export ban in 1971. Since that time much scrap has accumulated (estimated at some 20,000 tons) but none of it has been used so far and part of it has lost its value through oxidization. There is clearly a need for one or more steel scrap melting furnaces.

40. One bottleneck in the local distribution of steel products causing supply disruptions to building contractors and engineering industries is the very limited capacity of the stock yard of the National Steel Corporation. This yard holds at present a maximum of 7,000 tons which is a fraction of requirements. The expansion of yard capacity should be given high priority. Another problem is the lack of a stock list catalogue for industrial machines and tools, such as drills, taps, milling outlets, etc., held by the state-owned Agricultural and Industrial Supplies Company, Ltd. This company has a confinement for the import of such goods and is the principal stockist in the country. Publication of a periodically updated list would improve communications between the supplier and its customers especially outside Dar es Salaam.

41. There appears to be a great shortage of precision measuring instruments and metallurgical testing equipment, such as hardness and tensile testing instruments, in the country both in the factories and in the technical schools. The availability and use of such instruments for the control of heat treatment operations and dimensional limits is required for high speed machinery, spare parts, drive shafts, etc. In this context it is of interest to mention that the Ministry for Commerce and Industry is preparing for the establishment of a National Institute of Standards. As far as the engineering industry is concerned this is an important step in the right direction aimed at raising quality standards which should facilitate exports at a later stage.

Labor and Management Constraints

42. The shortage of skilled artisans of almost every description is probably the single most important constraint to achieving rapid expansion of the engineering sector. The problem has been aggravated by the departure in recent years of many skilled residents and citizens of Asian extraction. On the management side the picture is very similar. There is an acute shortage of experienced Tanzanian managers with a technical background in the engineering industry. Domestic engineering design capability is still very limited. Until such time that this capability increased, Tanzania will continue to depend on imported technology.

Training and Technical Education

43. Most training of semi-skilled and skilled artisans to date has been given on the job by engineering companies themselves. This form of internal training has in many cases led to very good results and deserves every encouragement. The Government might consider allowing companies with well designed on-the-job training programs to set off the cost of such programs against the 10 percent expatriate levy. Increased emphasis has in recent years been placed on formal training in specialized schools for technical education.

44. Skilled workers are trained at the Industrial Training Center in Dar es Salaam. The skills which the Center emphasizes are those of machine tool operators, carpenters, painters, fitters, and welders. The courses are of the "sandwich" type which means that the trainee spends one year at the Center taking courses and the following year in industry. About 200 students graduate from the Center each year. Because demand is very much in excess of this number, four more similar centers are planned for Arusha, Tanga, Mwanza, and Ifunda.

45. Higher level technicians are trained at the Technical College of Dar es Salaam (TCD) which offers six-year courses in civil, mechanical, electrical and chemical engineering. Annual intake to TCD varies from 300 to 400. The College tends to be somewhat theoretical in its approach and does not place enough emphasis on applied engineering. Laboratories and equipment are not adequately maintained. A second technical college is to be established in Arusha in 1975. Its capacity would be the same as TCD's but it would place greater emphasis on practical training and applied engineering. Once both colleges operate at full capacity (producing between them about 600 graduates annually from 1982), they are expected to be able to satisfy domestic demand for higher level technicians until the middle 80's.

46. The University of Dar es Salaam Faculty of Engineering was opened in 1973. It offers a four-year undergraduate course, leading to a B.S.C. (Engineering) in Civil, Mechanical and Electrical Engineering. The annual intake of the Faculty is 120 students (60 civil engineering, 40 mechanical

engineering and 20 electrical engineering). For metal engineering and chemical engineering, students still have to be referred to universities abroad.

47. The Faculty of Engineering curricula places great emphasis on practical training under supervision in industry. To promote applied industrial research and the development of intermediate technology, the Faculty is anxious to maintain close links with industry and with the Tanzania Agricultural Machinery Testing Unit (TAMTU) in Arusha. A post-graduate program is not likely to come into existence before the first under-graduate course has been completed (1977).

48. After the addition of four new industrial training centers and one technical college, the annual production of graduates (from 1982) is expected to be approximately as follows:

- (i) University Engineering Faculty: 100 engineers
- (ii) Technical Colleges (2): 600 higher level technicians
- (iii) Industrial Training Centers (5): 1,800 skilled workers

At this level of production, supply is expected to be in line with demand from 1982 until the middle 80's.

49. Secondary education is in the process of being redesigned. The Ministry of Education is planning to transform the existing general schools into four separate types, each one with a bias in a particular direction (technical, commercial, agricultural or domestic science). There were already two secondary schools with a technical bias (in Ifunda and in Moshi) offering practical courses in carpentry, welding, machine operation and engineering drawing. Because of a shortage of funds for the financing of workshop equipment and qualified teachers, the effect of these courses on the supply of technically trained people has been limited so far.

Wages, Labor Costs and Labor Productivity

50. The information in Table 10 on wages and labor costs per working hour (including fringe benefits) is based on data collected by the mission in September 1974, and applies to skilled factory floor workers, such as stamping machine operators, repetitive assemblers, machinists, production welders, etc.

51. It is apparent that wage rates per working hour and labor costs per hour (including fringe benefits) differ significantly from company to company. No systematic explanation could be found for this. The National Union of Tanganyika Workers (NUTA) is endeavoring to bring private sector wages in line with those prevailing in the public sector.

52. The average labor cost in the engineering industry in Tanzania is just over Sh 4/-per hour which is about 17 percent of the prevailing rate in the UK for comparable skills in the engineering industry. Observations of the tempo of working of direct production workers during factory visits indicated that where the work is machine paced, by conveyer belt or otherwise, output levels are comparable to UK standards. In most engineering plants, however, the work tempo was estimated to be around 60 to 70 percent of average UK levels.

53. In addition, many Tanzania enterprises were found to employ up to 50 or 60 percent more workers than required for efficient operations, while work stoppages due to supply disruptions and other organizational problems tend to be much more frequent than in advanced industrialized countries. Because of differences in technology and capital intensity a direct comparison of labor productivity between the Tanzanian and U.K. engineering industries is not possible but all indications point at the great need and the scope for productivity increases.

Exports of Engineering Products

54. An estimated 5 percent of the output of engineering industries in Tanzania is currently exported, mostly to Kenya and Zambia. There are no such exports outside Africa. Table 11 shows that the list of export items includes several small and very small items. In 1973 there were basically only four products worth mentioning (radios, dry batteries, aluminum circles and sheets, and metal containers) which together accounted for over 80 percent of the total. Of these four, metal containers are not a regular export product. ^{1/} The two radio assembly plants (one of which also manufactures batteries) are together responsible for the bulk of all engineering product exports. The only other important exporter in the field is Aluminium Africa Ltd. (aluminum circles, sheets and occasionally some steel pipes and galvanized corrugated sheets) which company, for all practical purposes, only exports to members of the Chandaria group in neighboring African countries.

^{1/} The 1973 exports of metal containers represents the incidental sale of oil drums to Sudan.

CHAPTER II. IDENTIFICATION OF PRIORITY PROJECTS

The Scope for Further Import Substitution

55. The engineering sector in Tanzania is still very small and the scope for further expansion based on the domestic market is considerable. In addition, surplus production for external markets should be economically feasible for a wider range of engineering products than are currently exported. A rough picture of the degree of self-sufficiency in the supply of each of the four major categories of engineering and metal products is presented below.

	(in million of T. Shillings)			Total Domestic Supply	Domestic Output as % of Domestic Supply
	Domestic Output	Imports	Exports		
Basic and fabricated metal products	152	147	4	295	52%
Machinery other than electric	20	445	1	464	4%
Electrical machinery	34	135	10	159	21%
Transport equipment	97	370	-	467	21%
Totals	303	1,097	15	1,385	22%

56. This chapter first briefly reviews the projects that are known to be either under implementation or under active consideration by the government. In the second part of this chapter an attempt is made to identify additional project possibilities. These additional possibilities have been selected on the basis of the following criteria:

- (a) The project fits the Tanzanian government's overall basic industrial strategy and there is a strong probability that Tanzania can produce efficiently compared to the import alternative;
- (b) Tanzania has or can easily acquire the technical and managerial skills required for the project;
- (c) The existence of a market in Tanzania or abroad can be readily demonstrated.

Review of Engineering Sector Projects Under Implementation or Active Consideration by the Government

57. A bicycle manufacturing/assembly project which had been under consideration for almost ten years, is now under implementation by NDC. It aims at the production of 150,000 bicycles annually from 1976 which is more than double the current annual level of imports. The project could have significant ripple effects and support to the growth of domestic component manufacturing establishments. In addition it should provide a good training ground for many simple engineering skills. Investment in the project is estimated at Sh 43 million.

58. Probably the most important project currently under consideration is the expansion of the Aluminium Africa Ltd. In June 1973 the government acquired a 60 percent interest in the equity of the company and stipulated that compensation payments would be used for the financing of an as yet undefined expansion program. Since the company is a well managed efficient producer of some of the basic inputs into engineering industries with an established and rapidly expanding market in Tanzania and neighboring countries, implementation of this project by NDC should, in the opinion of the mission, be given high priority.

59. Another important project is the establishment of a steel scrap melting and billet casting facility in Tanga. A feasibility study for a Sh 14 million 10 t.p.d. electric furnace has been prepared but project implementation has been delayed for unknown reasons. Meanwhile, a large quantity of steel scrap has accumulated at the site of the Tanga rolling mill since the government imposed a scrap export ban. In view of the mill's great vulnerability to import supply disruptions establishment of the furnace should be regarded a high priority project. A larger size furnace would probably be somewhat more efficient (an 18,000 t.p.a. (or 50 t.p.d.)) but Tanzania would then become import dependent for most of its scrap requirements which may well create another serious supply problem. The volatility of scrap prices on the international market and the unreliability of supply are notorious. A Sh 17 million, 18,000 t.p.a. furnace is reported to be under consideration as part of the expansion plan for Aluminium Africa Ltd.

60. The establishment of a new stock yard for the National Steel Corporation is understood to be under consideration but the timing of implementation is uncertain. If the government insists on centralizing the import and domestic wholesale function for a wide range of metal products and tools used by the engineering industry in the hands of NSC this relatively small project should indeed be given high priority. It may be expected to yield a high return in terms of fewer supply disruptions to domestic industries.

61. NDC is currently preparing a project for the establishment of a machine tool plant for the manufacturing of a wide range of metal and wood working machinery, pumps and compressors. No details have been announced so far. Little thought appears to have been given to the possibility of making

use of the experience and skills available in the only existing machine tool factory in the country (Akberali Hassanali and Sons in Tanga) which has been successful for many years at designing and building cross cut saws, circular saw roller benders, break down machines for saw mills and other woodworking machinery. The promotion of a domestic tool and machine making industry understandably has been given high priority by the government as an essential element of its basic industry strategy. The main problem here is that the range of industrial machines for which the domestic market is large enough to sustain production at an economically acceptable level is undoubtedly narrow. Most specialized industrial machinery requirements will have to be imported. The repair and maintenance function, however, can and should be localized as soon as possible.

62. The de-bottlenecking cum expansion project for the Ubungo Farm Implements factory in Dar es Salaam is a simple and inexpensive project of high priority. Implementation of this project has recently begun but it should have been completed years ago. The factory currently works at only 30 percent of capacity but even at full capacity it would only be able to satisfy half of Tanzania's annual requirements of hand hoes (2 million) and animal drawn ploughs. A second farm implements factory is planned for Mbeya but no details have been announced.

New Project Possibilities

63. As a first step to the identification of specific project possibilities to achieve more rapid growth within the engineering sector, a detailed analysis was made of all relevant imports from 1969-1973 (see Table 12).

64. Because of fluctuations from one year to the next, the average value of imports during the last three years for which external trade statistics were available (1971-1973) was used for the construction of a table showing imported engineering products in descending order of value (see Table 13). This table provides a basis for identifying key areas for import substitution.

65. The three digits SITC classifications listed in Table 13 were then further broken down to pin-point the key products within each classification. These key products were examined in the light of Tanzania's skill and raw material position which led to the compilation of a list of products worthy of closer examination by Tanzania's planning authorities. The products listed are all relatively simple products for which the technology is already available within the country or can readily be imported. The size of the domestic market is considered sufficient to sustain production on an economic scale.

Products Eligible in Principle for Import Substitution

66. In the "fabricated metal products" sector the manufacture of locks, padlocks, hinges and catches should be technically quite feasible and economically justified. This would also help in building up a small press tool making industry. The manufacture of a range of finished structural parts of

steel and cast iron foundry products such as manhole covers, pipes and all sorts of fittings should also be considered. Practically all fabricated metal parts on trucks and buses such as exhaust pipes, silencer systems, brackets, radiators, springs and steel pressed pulleys can be made locally, initially perhaps mainly for the replacement market. There is no reason why Tanzania could not be self sufficient in metal household buckets and similar containers.

67. With regard to "machinery other than electric" the local manufacture of a range of pumps for liquids and pipe fittings for water supply systems should be well within the capability of the National Engineering Company to undertake as an expansion project. The manufacture of transmission shafts, cranks and pulleys should also be considered a possibility. The same applies to simple construction and loading machinery such as wheelbarrows, concrete mixers and conveyors. The local manufacture of small internal combustion engines and spare parts for static operation (e.g. for spray units, compressors and electricity generation) could provide a basis for the manufacture of motor cycles later on.

68. In the "electrical sector" an obvious possibility is the local manufacture of motor vehicle batteries. It is understood that a private sector enterprise is already undertaking such a project. It should certainly also be possible to start the local manufacture of small electric motors (sizes and types to be determined by a detailed market survey).

69. With regard to "transport equipment" the local manufacture of all truck, bus and trailer bodies (instead of importing fully assembled units) should be the ultimate aim of a strategy that would start with the c.k.d. assembly of all such vehicles. This strategy could make a very major contribution to the development of the engineering sector. It would be based on a phased program of import substitution of components including the fabricated metal parts mentioned in paragraph 65. Another important project possibility is the manufacture of railway freight cars, or at least the bodies initially. The demand in East Africa for freight cars is likely to rise sharply, partly because of the new railway line from Dar es Salaam to Zambia and the large iron and steel project in Chunya district. A project for railway freight car (body) manufacture could be linked with the production of heavy finished structural parts, referred to in paragraph 65.

Implementation of Engineering Sector Development Strategy and Export Possibilities

70. The public sector capacity for undertaking new projects is limited. Past experience shows that with few exceptions it takes very long indeed to translate general project ideas into specific projects ready for implementation and that the pace of implementation tends to be rather leisurely. The engineering sector in a small country like Tanzania typically consists of many relatively small production units. Small scale production can be quite efficient in the case of many products. Product variety is great. Success or failure of the individual firm is often a function of its ability to adapt to changing technology

and changing market conditions. Most of the know-how and skills available in Tanzania's engineering industries are still concentrated in private sector enterprises. If the private sector is assigned a clearly defined role, it could make a significant contribution to the rapid development of the engineering sector. One possible way of achieving this is to discuss a strategy for the development of the sector with representatives of the industry and to work out a mutually agreed program of expansion and diversification.

71. As mentioned, current exports of engineering products are very limited but could be expanded given a proper incentive framework and better information flows. The pervasive uncertainty concerning the future role of the private sector also acts as a break on export growth. There is a ready market for some of their products in neighboring African countries which is not being exploited for lack of incentives. Public sector enterprises have so far concentrated on import substitution. The longer term future export potential could be particularly important with respect to truck, bus, lorry and possibly also railway freight car bodies. Metal furniture appears to be another promising possibility. For the immediate and medium term future, however, the main thrust for the development of the engineering sector will have to come from further import substitution and from the development of new products adapted to Tanzanian requirements.

CHAPTER III. THE GROWTH OF METAL CONSUMPTION
AND THE DEMAND FOR PRIMARY IRON AND STEEL

Tanzania's Steel Mill Project

72. Tanzania is planning to build an integrated iron and steel mill based on domestic iron ore and coal reserves. (For a further discussion of this import and project and its raw material base refer to Volume II, Annex II, paragraphs 142-146, and Volume I, Main Report, paragraph 106.) The government has not so far announced any details on the production technology or the size of the mill, or the timing of its completion, but it is understood that the target date for first production is 1980 or shortly thereafter. In view of the great significance of this project for the Tanzanian economy and its immediate relevance for the development of the engineering sector, the mission has attempted to make a projection of the likely growth in local demand for primary steel output by the local mill.

Present Metal Usage

73. As all metals have to be imported, the most up-to-date information available on metal usage is contained in the 1973 Annual Trade Report of the East African Community. A detailed analysis was made of net imports, less re-exports for iron and steel products under the following categories:

- iron and steel basic raw materials, such as bar, sheet, tube, wire, rails;
- simple semi-finished and finished products such as nails, finished structural parts, hoes, hand tools;
- intermediate finished products, such as tanks, buckets, locks, springs;
- complex products with import substitution possibilities such as bicycles, trailers, railway freight cars, machine tools.

The purpose of these particular sub-divisions was to differentiate between groups of products with different levels of potential import substitution possibilities. The import survey is contained in Table 14.

74. Table 14 shows that total 1973 imports of iron and steel in their basic raw material state amounted to 149,000 tons. Of this, about 66,000 tons consisted of rails and sleepers for use in the Tan-Zam railway project which leaves about 83,000 tons for other uses. For projection purposes, the latter figure is believed to provide a more meaningful basis than the total of 149,000 tons. In addition, a further 55,000 tons of iron and steel products were imported in products that in the opinion of the mission are in varying degrees eligible for import substitution. Thus, the 1973 imports total of

iron and steel products relevant for an analysis of demand for the products of a local steel mill was approximately 138,000 tons. The comparable figure for 1971 was 121,000 tons and for 1972 it was 157,000 tons.

Future Usage

75. These paragraphs are concerned with the use of primary iron and steel products in domestic metal using industries. Projections of future demand for iron and steel in Tanzania are probably more a function of government policies than of historical growth patterns. If the government decides to give top priority to the development of engineering and other metal using industries, then demand would, of course, grow faster than otherwise. Several attempts have been made in recent years by the government itself, and by various consultants to project the local demand for iron and steel at various points in the future. Available projections for e.g. 1980 show very different results. The differences are partly due to different estimates of base year consumption and partly to different assumptions about the growth rate of the economy in general and the metal using industries in particular. Because total steel imports, the composition of those imports, and therefore apparent steel consumption, show erratic fluctuations from year to year the choice of a base year is rather critical. The mission studied steel imports during the last three years (1971-1973) and concluded that 1973 steel import statistics provide probably as good a base for projection purposes as any.

76. In projecting future consumption of iron and steel, the mission used a consumption growth rate of 6.5 percent per annum. This rate corresponds closely to the historical growth pattern. Obviously, the growth of future steel consumption could be higher or lower depending on the investment rate, the pattern of investment and other factors. As a first step, the mission assumed no further import substitution which means that the composition of demand for iron and steel products in 1979 (see Table 15) would remain unchanged.

77. Table 15 suggests that total demand in 1979 would be around 200,000 metric tons of which about 120,000 tons would be in the form of primary materials. The next question to be answered is how much of the remaining 80,000 tons that would otherwise be imported in the form of semi-finished and finished products could be manufactured in Tanzania from primary materials. To answer this question the mission first reviewed each of the simple semi-finished and intermediate-finished products to assess what percentage of imports could be substituted by 1979 through the growth of output by existing domestic manufacturers. With regard to the complex products, an assessment was made for each of the main products included in the relevant part of Table 14 with a view to determining a rough picture of the probable increase in local demand for primary materials associated with an aggressive drive for more import substitution. The results of this exercise are shown in Table 16.

78. Finally, to estimate local demand for primary iron and steel products in 1979 that could be supplied by a local mill allowance has to be

made for the likelihood that specialty products such as tinned plate and tool steel will not be made in Tanzania for economies of scale reasons. Although no plans have been announced for rolling mills that will be linked to the planned steel plant, it is probably not realistic to expect that the new and existing rolling mills together will be able to supply more than 75 percent of total domestic demand for primary iron and steel materials, or about 110,000 tons liquid steel equivalent. The choice of 1971 as a base year (instead of 1973) using otherwise the same methodology, would have yielded a higher estimate of the projected domestic demand for locally made steel in 1979, namely about 130,000 tons of liquid steel equivalent. In addition, it is possible that the local mill would be able to manufacture rails (probably mainly replacement rails) for East African Railways and possibly Zambia Railways. The annual demand for replacement rails is highly erratic but could average around 20,000 t.p.a. during the 1980's which should be added to the potential demand for locally manufactured steel.

79. In view of the many problems and uncertainties associated with projecting the demand for iron and steel products (including uncertainty with regard to the rate at which the government is going to build a new capital at Dodoma) local demand by 1979 for primary products that could be made by a local mill can be projected within a fairly wide range, say between 110,000 and 170,000 tons of liquid steel equivalent.

STATISTICAL APPENDIX TO ANNEX III

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Value of Gross Output (1966-1971)
(in Shs. million; current prices)

Table 1

ISIC Industrial Sector	Total Gross Output					% Total Engineering Only 1971
	1966	1968	1969	1970	1971	
371 Basic metal ind. 372 incl. rolling	75.5	77.7	84.3	101.1	72.3	34.4
381 Fabricated metal products					79.5	
382 Machinery (other than electric)	14.4	21.6	29.2	42.8	19.9	8.6
383 Electrical mach., apparatus, appliances					34.1	
384 Transport equip.	9.8	31.2	110.9	68.2	97.3	42.2
Total engineering plus basic metal	99.7	130.5	224.4	212.1	303.1	
Total engineering only					230.8	100.0
Total all manuf. ind.	1289.3	1269.0	1522.6	1744.4	2012.9	
Eng. plus basic as % of total manuf.	7.7	10.3	14.7	12.1	15.0	

Source : Survey of Industrial Production 1966, 1970, 1971

Value Added (1966-1971)
(in shs. million; current prices)

Table 2

ISIC Industrial Sector	Total Value Added					% Total Engineering Only 1971
	1966	1968	1969	1970	1971	
371 Basic metal ind. 372 incl. rolling	16.9	15.6	20.5	23.6	12.4	44.4
381 Fabricated metal products					22.8	
382 Machinery (other than electric)	5.8	5.6	7.2	13.4	8.3	16.1
383 Electrical mach., apparatus, appliances					4.7	9.1
384 Transport equip.	4.7	11.2	41.0	14.0	15.6	30.4
Total engineering plus basic metal	27.4	32.4	68.7	51.0	63.8	
Total engineering only					51.4	100.0
Total all manuf. ind.	295.2	378.3	475.4	560.6	642.8	
Eng. plus basic as % of total manuf.	9.3	8.6	14.5	9.1	9.9	

Source: Survey of Industrial Production, 1966, 1970, 1971

ISIC Industrial Sector	Total No. Employees					% Total Engineering Only 1971
	1966	1968	1969	1970	1971	
371 Basic metal ind. 372 incl. rolling	1,329	928	1,350	1,266	500	52.1%
381 Fabricated metal products					1,987	
382 Machinery (other than electric)	463	640	563	871	511	13.4%
383 Electrical mach., apparatus, appliances					337	
384 Transport equip.	447	539	802	771	975	25.7%
Total engineering plus basic metal	2,239	2,107	2,715	2,908	4,310	
Total engineering only					3,810	100.0%
Total all manuf. ind.	32,972	42,387	43,396	48,314	53,516	
Eng. plus basic as % of total manuf.	6.7%	5.0%	6.3%	6.0%	8.0%	

Source: Survey of Industrial Production 1966, 1968, 1969, 1970, 1971

Note: This table covers firms with ten or more employees only. Employment covers all paid workers of the establishments, operations, admin., personnel, supervisory, technical and clerical. Excluded are working proprietors and unpaid family workers.

Labor Cost 1966-1971
(in Shs. million; current prices)

Table 4

ISIC Industrial Sector	Total Labor Costs					% Total Engineering Only 1971	
	1966	1968	1969	1970	1971		
371 Basic metal ind. 372 incl. rolling	8.9	n.a.	8.0	7.6	3.2	42.0%	
381 Fabricated metal products							
382 Machinery (other than electric)	2.9	n.a.	3.9	6.8	4.8		17.8%
383 Electrical mach., apparatus, appliances							
384 Transport equip.	2.4	n.a.	6.4	6.2	8.1		
Total engineering plus basic metal	14.2	n.a.	18.3	20.6	30.1		100.0%
Total engineering only					26.9		
Total all manuf. ind.	134.9	n.a.	214.6	240.2	261.1		
Eng. plus basic as % of total manuf.	10.5%	n.a.	8.5%	8.6%	11.5%		

Source: Survey of Industrial Production 1966, 1969, 1970, 1971

Note: Labor costs include wages and salaries, employees contributions to provident and pension funds, gratuities and other benefits in cash or kind.

Gross Investments 1966-1971
(in Shs. million; current prices)

Table 5

ISIC Industrial Sector	Gross Investment					% Total Engineering Only 1971
	1966	1968	1969	1970	1971	
371 Basic metal ind. 372 incl. rolling	3.3	1.2	1.6	6.4	5.3	54.6%
381 Fabricated metal products						
382 Machinery (other than electric)	1.2	4.6	4.1	7.2	0.7	12.7%
383 Electrical mach., apparatus, appliances						
384 Transport equip.	2.1	0.2	0.6	0.9	1.1	20.0%
Total engineering plus basic metal	6.6	6.0	6.3	14.5	10.8	
Total engineering only					5.5	100.0%
Total all manuf. ind.	192.2	76.1	100.1	108.5	157.2	
Eng. plus basic as % of total manuf.	3.4%	7.9%	6.3%	13.3%	6.9%	

Source: Survey of Industrial Production 1966, 1969, 1970, 1971.

Note: Gross investment consists of expenditure on new fixed assets together with additions, improvements and major alterations to existing fixed assets such as buildings, machinery and equipment.

Imports of Basic Metal and Engineering Products, 1969-1973
 (Shs. million; current prices)

Table 6

SITC Trade Classification	Value of Imports (Shs. millions)					% Total Engineering Only 1973
	1969	1970	1971	1972	1973	
69 Manuf. of metal	74.2	85.2	146.8	111.3	138.7	12.1%
71 Machinery (other than electric)	193.8	389.1	446.9	411.5	399.8	34.8%
72 Electrical mach., apparatus, appliances	75.3	102.8	135.2	160.9	213.8	18.6%
73 Transport equip.	195.8	287.6	369.8	309.7	396.9	34.5%
Total all eng. manuf.	589.1	864.7	1096.7	993.4	1149.2	100.0%
Total all net imports	1418.8	1939.2	2414.4	2597.6	3139.5	
% of all net imports	38.0%	44.6%	45.5%	38.2%	36.6%	

Source: E.A.C. Annual Trade Reports

Size Distribution of Engineering Establishments, 1971

Table 7

No. of Workers in Establishment	Number of Establishments					% of Total No. of Workers
	Fab. Metal Products	Mech. M/c & Equip.	Elec. M/c % Equip.	Transport Equip.	Total	
500 and more	nil	nil	nil	nil	nil	
100 to 499	6	1	2	3	12	61.2%
50 to 99	5	1	nil	4	10	19.0%
20 to 49	8	6	1	3	18	14.8%
10 to 19	3	7	1	4	15	5.0%
Total Number Establishments	22	15	4	14	55	100.0%
Total Employed	1,987	511	337	975	3,810	
% of Total	52.1%	13.4%	8.8%	25.7%	100%	

Source: Survey of Industrial Production 1971

Geographical Distribution of Engineering
Industries and Employment, 1971

Table 8

	Coast		Tanga		Arusha and Kilimanjaro		Mwanza		Total Persons Engaged	Total Estab- lishment
	No. Emp.	No. Est.	No. Emp.	No. Est.	No. Emp.	No. Est.	No. Emp.	No. Est.		
Fab. Metal products	1649	19	145	1	---	---	148	2	1987	22
Mech. Mach. & Equip.	262	4	161	5	59	4	29	2	511	15
Elec. Mach. & Equip.	182	2	---	-	122	1	33	1	337	4
Transport Equipment	932	11	22	1	10	1	11	1	975	14
No. of Employees										
No. of Establish.	3070	36	328	7	191	6	221	6	3810	55
% of Employees in Each Location	80.6%		8.6%		5.0%		5.8%		100%	

Source: Survey of Industrial Production 1971

Very Small Scale Engineering
Industries in Tanzania, 1968

Table 9

Number of Firms	Trade or Industry	Number of Employees
8	Agricultural equipment repairers	7
11	Bicycle repairers	8
15	Electricians	68
6	Motorcycle repairers	
35	Motor mechanics	349
43	Sheetmetal workers	87
4	Typewriter repairmen	
25	Watch repairers	18
TOTAL 147		537

Source: K. Schädler, page 101.

Wage Rates and Fringe Benefits in Selected
Engineering Establishments, September 1974

Table 10

	<u>Hours Worked Per Week</u>	<u>Basic Earnings Per Month</u>	<u>Wage Rate Per Hour (Shillings)</u>	<u>Labor Cost Per Working Hour Including Fringe Benefits</u>
<u>Basic Metal & Fabricated Metal Manufacturers</u>				
Company No. 1	45	425/-	2.19	2.84
2	45	600/-	3.09	3.86
3	44	500/-	2.62	3.66
4	45	400/-	2.06	3.09
5	45	450/-	2.32	<u>3.01</u>
Average				<u>3.29</u>
<u>Mechanical Machinery and Repairs</u>				
Company No. 1	42	500/-	2.75	3.43
2	45	500/-	2.63	3.42
3	44	800/-	4.21	6.48
4	45	520/-	2.68	<u>3.08</u>
Average				<u>4.10</u>
<u>Electrical Sector</u>				
Company No. 1	43 3/4	500/-	2.64	3.43
2	42	500/-	2.76	<u>3.17</u>
Average				<u>3.30</u>
<u>Transport Equipment Establishments</u>				
Company No. 1	42	625/-	3.43	4.80
2	45	450/-	2.31	3.35
3	45	850/-	4.36	6.54
4	45	650/-	3.35	4.69
5	42	1000/-	5.52	<u>7.72</u>
Average				<u>5.42</u>

Source: Based on information collected during visits to companies.

1/ Fringe benefits include payment for annual and public holidays, provident fund, 2% housing tax, free uniforms, subsidized canteen, medical facilities, time spent on literary training, bonus payments, transport, etc.

2/ The major part of the work force was male, even in the electronic sector.

Exports of Engineering and Metal Products From
Tanzania and Transfers to E.A.C., 1973 (in Shs. million)

Table 11

<u>SITC</u>		<u>Total Exports</u>	<u>Of Which Exports to EAC</u>
	<u>Manufacturers of Metal</u>		
673	Iron and steel bars, rods, angles, sheets	0.40	--
684	Aluminum circles and sheets	2.90	--
691	Finished structural parts & structures	0.02	0.02
692	Metal containers for storage & transport	1.84	0.08
693	Wire products (excl. electric), fence, cables	0.04	0.04
694	Nails, screws, nuts, bolts	0.55	0.55
695	Tools for use in the hand or in machines	0.31	0.01
697	Household equip. of base metals	1.47	1.47
698	Manufactures of metal (locks, hinges, etc.)	0.23	0.23
	sub-total	7.76	2.40
	<u>Machinery Other than Electric</u>		
712	Agricultural machinery & implements	0.49	0.49
718	Machines for special industries - textile, mining, etc.	0.17	0.17
719	Machinery & appliances & machine parts	0.04	0.04
	sub-total	0.70	0.70
	<u>Electrical Machinery, Apparatus & Appliances</u>		
724	Telecommunications apparatus, e.g., radios	4.77	4.77
729	Other electrical M/c & apparatus, e.g., batteries	6.22	6.22
	sub-total	10.99	10.99
	<u>Transport Equipment</u>		
732	Road motor vehicles	0.01	0.01
	sub-total	0.01	0.01
	GRAND TOTAL	19.46	14.10

Source: Annual Trade Report, E.A.C. 1973

Imports of Engineering Products
(Shs Million)

Table 12

SITC	1969	1970	1971	1972	1973
69	<u>Manufactures of Metal</u>				
691	<u>Finished structural parts & structures</u>				
	14.61	3.61	35.45	29.01	27.67
692	Metal containers for storage & transport				
	3.15	3.55	4.02	6.27	6.71
693	Wire products (excl. electric), fence, cables				
	5.67	10.18	21.90	13.08	8.58
694	Nails, screws, nuts, bolts, rivets, etc.				
	3.11	7.93	12.09	12.28	12.90
695	Tools for use in the hand or in machines				
	19.07	23.39	25.71	13.84	32.49
696	Cutlery & razor blades				
	4.39	5.62	2.69	0.72	3.17
697	Household equip. of base metals				
	6.97	7.53	10.57	7.73	11.64
698	Manufactures of metal (locks, hinges, etc.)				
	17.27	23.35	34.40	28.30	35.58
	<u>sub total</u>	<u>74.24</u>	<u>146.83</u>	<u>111.23</u>	<u>138.74</u>
71	<u>Machinery other than Electric</u>				
711	<u>Power generating machinery other than electric</u>				
	15.57	17.54	33.29	32.77	39.81
712	<u>Agricultural machinery and implements</u>				
	32.59	33.61	42.03	40.07	49.16
714	<u>Office machines</u>				
	6.12	7.83	8.06	8.32	8.07
715	<u>Metal working machinery</u>				
	4.51	14.01	15.01	33.42	4.41
717	<u>Textile & leather machinery</u>				
	22.55	37.10	21.25	20.92	27.57
718	<u>Machines for special industries, textiles, mining, etc.</u>				
	47.19	102.66	111.35	100.11	79.69
719	<u>Machinery & appliances and machine parts</u>				
	66.27	176.32	213.91	175.94	190.96
	<u>sub total</u>	<u>193.80</u>	<u>444.90</u>	<u>411.55</u>	<u>399.67</u>
72	<u>Electrical Machinery, Apparatus & Appliances</u>				
722	<u>Electrical power machinery and switches</u>				
	18.30	19.84	49.70	53.61	26.49
723	<u>Equipment for distributing electricity</u>				
	5.73	13.98	22.78	22.10	11.65
724	<u>Telecommunications apparatus</u>				
	25.72	39.90	42.40	48.72	128.77
725	<u>Domestic electrical equip.</u>				
	9.27	6.48	6.65	10.45	12.50
726	<u>Electrical apparatus for medical purposes</u>				
	1.10	3.87	2.03	1.71	1.46
729	<u>Other electrical machinery & apparatus e.g., batteries</u>				
	15.09	18.79	31.57	24.35	32.98
	<u>sub total</u>	<u>75.21</u>	<u>102.86</u>	<u>160.94</u>	<u>213.85</u>
73	<u>Transport Equipment</u>				
731	<u>Railway vehicles</u>				
	2.59	19.36	64.93	89.75	77.00
732	<u>Road motor vehicles</u>				
	174.39	204.08	254.95	192.12	278.02
733	<u>Road vehicles other than motors & bicycles</u>				
	12.74	21.97	29.48	24.63	33.27
734	<u>Aircraft & parts</u>				
	0.48	39.40	19.75	1.46	2.65
735	<u>Ships & boats</u>				
	5.64	2.79	0.69	1.71	6.04
	<u>sub total</u>	<u>195.84</u>	<u>287.60</u>	<u>309.67</u>	<u>396.98</u>
	<u>GRAND TOTAL</u>	<u>538.09</u>	<u>864.69</u>	<u>1096.66</u>	<u>993.38</u>
				<u>1149.2</u>	

Source: EAC Annual Trade Reports

Imports of Engineering Products
in Descending Order of Value

Table 13

SITC	Description of Classification	: Average Value : 1971, 72, 73 T Shillings millions	: Individual : % of Total	: Cumulative : % of Total
732	Road motor vehicles (cars, motorcycles, trucks, buses)	241.70	22.26	
719	Machinery and appliances and machine parts (not classified elsewhere)	193.60	17.83	40.09
718	Machinery for special industries (construction, mining etc.)	97.05	8.94	49.03
731	Railway vehicles	77.23	7.11	56.14
724	Telecommunications apparatus	73.29	6.75	62.89
712	Agricultural machinery and implements	43.75	4.03	66.92
722	Electrical Power Machinery and switches	43.26	3.98	70.90
711	Power Generating Machinery (other than electric)	35.29	3.25	74.15
698	Manufacture of metal (locks, hinges)	32.76	3.02	77.17
691	Finished structural parts and structures	30.71	2.83	80.00
	Remainder of Classification	<u>217.75</u>	<u>20.00</u>	<u>100.00</u>
	Grand Total	1,086.39		

Imports Less Re-Exports for
Iron and Steel Goods - Tanzania, 1973

(Page 1 of 4 pages)
Table 14

S.I.T.C.	Primary Iron and Steel Materials	Quantity Tonne	Value T.Shillings (million)
671	Pig Iron, Steel Powder & Shot	1,330	2.94
672	Ingots - including blanks for tubes & pipes	6,260	6.26
673.1	Steel or iron wire rod	313	0.54
.2	Bars and rods	10,458	18.81
.9	Angles, Shapes & Sections	3,555	5.88
674.4.1	Corrugated plates and sheet-uncoated	-	-
4.2	Flat sheet up to .355 mm (.014")	14,263	26.49
4.2	Flat Sheet exceeding .355 mm	8,644	15.42
4.3	Universal plates	23	0.06
4.9	Other plates	161	0.31
674.5.1	Coates or Galvanised sheet and plates	485	1.09
.1	Corregated sheet	6	0.01
.2	Flat of less than .355 mm(.014")	10	0.02
.2	Flat sheet exceeding .355 mm	133	0.26
.3	Enamelled, Printed sheet	57	0.12
.5	Others	446	1.03
674.6	Stainless steel plates	16	0.16
.7	Tinned plates	6,999	14.38
675.0	Hoop and strip steel	10,265	20.16
676.0	Rails of iron or steel	52,908	101.27
.2	Sleepers and other Railway trucks	13,506	39.54
677.	Wire for Nail Manufacture	5,929	10.00
	Wire for other uses - fences etc	1,069	3.60
678.1	Tubes and pipes of cast iron	8,302	13.21
.2	Steel tubes - seamless	all exported	-
.3	Steel tubes - welded, clinched	2,687	5.80
.4	High Pressure Hydro Conduit	31	0.19
.5	Tube & pipe fittings	1,457	9.66

679	Iron & Steel Castings & Forgings - Unworked	Nil	Nil
	TOTAL IRON & STEEL PRIMARY IMPORTS	149,313 Tonne	297.21 T.Shillings millions
	TOTAL (Excluding Tanzam Rails & Sleepers)	82,899 Tonne	157.40 T.Shillings millions

S.I.T.C.	Simple Semi-Finished and Finished Products	Quantity Tonne	Value T.Shillings
691.	Steel doors and windows	184	1.58
	Other finished structural parts	5,471	22.50
693.1	Wire cables, ropes, bands, slings	672	5.17
.2	Barbed wire	139	0.31
.2	Fencing Wire	All exported	-
.3	Fencing, netting, grill	516	3.44
.4	Expanded metal	130	0.35
694.1	Nails, tacks, staples, spikes	189	0.59
.2	Bolts, nuts and washers	865	5.44
.2	Wood screws	12	0.20
.2	Other screws, rivets and similar articles	978	6.16
695.1	Hoes (Jembes)	981	4.89
.1	Matchets (Pangas)	234	1.17
.1	Other hand tools used in Agriculture	589	2.94
.2	Hand saws & saw blades	298	1.49
.2	Pliers, pincers, spanners, files & shears	647	3.23
.2	Hand tools not elsewhere specified	706	3.52
.2	Interchangeable tools for hand & m/c tools	300	13.80
.2	Cutting blades for machines	50	1.39
.2	Tool tips - Unmounted of Sintered carbide	12	0.03
698.8	Soldering and weld rods	626	4.50
.9	Man hole covers	409	0.60
	TOTAL SIMPLE SEMI-FINISHED AND FINISHED PRODUCTS	14,800 Tonne	83.30 T.Shillings million

S.I.T.C.	Intermediate Finished Products	Quantity Tonne	Value T.Shilling
692	Tanks, Vats, Reservoirs - exceeding 300 litres	252	1.01
	Casks, Drums, Boxes, Cases	412	3.95
	Compressed gas cylinders	194	1.67
697	Pressure stoves	8	0.16
	Parts for Pressure Stoves	14	0.28
	Domestic stoves, boilers, cookers	88	1.76
	Enamel Hollow ware	23	0.70
	Domestic utensils of stainless steel	15	0.46
	Household buckets	1436	4.78
	Domestic Utensils of Iron & Steel	482	2.35
598	Locks, padlocks & keys	411	8.23
	Furniture fittings, hinges, catches	218	4.36
	Safes and strong room fittings	19	0.39
	Chain and parts	165	1.75
	Anchors, grapnels	11	0.09
	Pins & needles	300	2.34
	Springs and leaves	686	4.87
	Name plates, sign plates	3	0.08
	Earth Pans (Karais)	1	0.01
	Tanks, Vats of 300 litres capacity or less	4	0.16
Articles of iron & steel n & s	781	5.55	
	TOTAL INTERMEDIATE FINISHED PRODUCTS	5,523 Tonne	44.95

4. Complex Products with Import Substitution Possibilities

733.1	Bicycles	1183	13.12
733.1	Parts for bicycles	497	5.52
733.3	Trailers not motorised	152	5.70
715.1	Machine tools for working metal	101	3.50
715.2	Metalworking machinery other than M/c tools	38	0.84
719.5	Machine tools for working wood and plastic	257	8.91
719.2	Manufacture of pumps for liquid	573	18.21

S.I.T.C.		Quantity Tonne	Value T.Shillings
719.2	Centrifuges	170	5.61
719.3	Lifting and Loading Machinery	1,280	20.57
719.9	Transmission Shafts, cranks & pulleys	1,462	23.52
718.4	Construction Machinery	1,814	39.94
711.5	Internal combustion engines other than motor vehicles	25	6.08
711.5	Spares for above I.C. engines	88	21.23
712.1	Agricultural M/c and implements for preparing and cultivating soil	962	8.20
732.2	Buses	1,029	3.85
732.3	Lorries and Trucks	4,112	43.04
732.7	Truck chassis with engine mounted	11,085	116.65
731.8	Chassis frame & spare parts for motor vehicles	5,808	60.78
731.6	Railway & Freight & maintenance cars	2,200	22.21
731.7	Spares for locomotives and rolling stock	2,549	26.70
	TOTAL COMPLEX PRODUCTS	35,385	454.18

Demand for Iron and Steel Products
that are Potentially Eligible for
Import Substitution, 1973 and 1979

Table 15

	1973 (Metric Tons)	1979 (Metric Tons)
Primary iron and steel materials (excluding rails and sleepers)	82,899	120,900
Simple semi-finished products	14,008	20,400
Intermediate finished products	5,523	8,100
Complex products with import substitution possibilities	<u>35,385</u>	<u>51,600</u>
Total	137,815	201,000

Composition of Demand for Iron and Steel
 Products in 1979 with and without Further
 Import Substitution (in Metric Tons)

Table 16

	1979 Without further import substi- tution	1979 With aggressive program for import substitution
1. Primary iron and steel materials	120,900	120,900
2. Simple semi-finished and finished products	20,400	7,100
Shift in demand to primary materials		13,300
3. Intermediate finished products	8,100	4,900
Shift in demand to primary materials		3,200
4. Complex finished products	51,600	42,160
Shift in demand to primary materials		9,440
of which for:		
Bicycle project		(2,164)
Bicycle parts		(913)
Trailers		(208)
Wood working machinery/tools		(372)
Pumps for liquids		(573)
Construction and loading equipment		(1,480)
Cranks, pulleys, shafts		(730)
Agricultural machinery		(700)
Bus and truck bodies		(1,000)
CKD trucks		(300)
Railway freight trucks		(1,000)
5. Total demand for primary materials	120,900	146,840

Source: Mission Projections

CURRENT STATUS AND DEVELOPMENT PROSPECTS OF
THE TEXTILE INDUSTRY IN TANZANIA

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Statistical Appendix

SUMMARY AND CONCLUSIONS

1. Tanzania's textile industry was given special attention by the sector mission because it is at present the largest single industry within the manufacturing sector (accounting for 25% of employment in and 13% of value added by the sector in 1971) and because important decisions have to be made about the direction of its future development. In recent years, Tanzania has made great strides towards self-sufficiency in woven cotton fabrics. Starting from almost complete import dependency prior to 1966 the textile industry achieved more than 80% national self-sufficiency in 1972. All major mills are now owned or controlled by the Government through the National Textile Corporation (TEXCO) which is a holding company owned by the State. All imports of and domestic wholesale trade in textiles are confined to the National Textile Industries Corporation (NATEX) which is a wholly owned subsidiary of TEXCO. One of the main concerns of the mission is that productivity in most of the existing mills is low and appears to have fallen somewhat in 1974.

2. A number of small projects to increase the capacity of several existing mills are being implemented and a major project to double the capacity of the Mwanza mill is in an advanced stage of preparation. These are all soundly conceived, high priority projects. Their implementation should enable Tanzania to become self-sufficient in woven cotton fabrics and probably achieve a small exportable surplus by 1977 or 1978.

3. Rapid expansion of the cotton based textile industry is a key element in Tanzania's recently adopted long-term industrial development strategy. This strategy aims at a gradual restructuring of the economy by linking the pattern of production more closely to domestic resource availability and local demand. The production of exportable surpluses is seen as a logical extension of this strategy after all or the major portion of domestic demand has been satisfied. The production of cotton textiles fits this strategy as practically all cotton fabrics produced in Tanzania are made of locally grown cotton. Only about 15 - 20% of domestic cotton production is at present used by the local textile industry; the rest is exported as raw cotton, mostly to the Far East and some to Europe.

4. The bulk of Tanzania's cotton crop is of the medium-long staple variety (1-1/16") permitting the manufacturing of a high quality fabric. Most of Tanzania's locally processed cotton is however, "underspun". This means that the same cotton could be used to make finer count fabrics or alternatively that the fabrics presently made in Tanzania could be made from cheaper, shorter staple cotton. The mission considered the alternative of exporting more top (AR) grade medium-long staple cotton but concluded that the economic merits of this alternative would be negligible or negative. The mission also studied the suggestion made by UNIDO in 1972 to increase the use by local textile industries of domestic low (BR) grade cotton (most

of which is at present exported) so as to release more of Tanzania's high priced top grade cotton for export. It appears that inconsistency of quality of low (BR) grade cotton (partly due to unreliable grading at the ginnery level) is the main obstacle to following up this suggestion.

5. Another issue considered by the mission is the choice of the next major project for the expansion of the textile sector (beyond the expansion of the Mwanza mill). Various options are open, including (a) the establishment of another newly integrated cotton textile mill (which appears to be the Government's plan), (b) the further expansion of existing mills, and (c) to concentrate on increasing the production of cotton-polyester blended fabrics before proceeding with the further expansion of pure cotton fabrics manufacturing capacity.

6. The mission concluded that the third alternative is probably the most attractive one deserving serious consideration by the Government for the following reasons:

(a) Tanzania's medium-long staple cotton is technically, ideally suited for blending with polyester fibres which gives Tanzania an advantage in blended fabrics manufacturing compared to many other primary cotton producers.

(b) The domestic demand for blended suiting and shirting fabrics is already around 24 million meters per annum (or about one-quarter of demand for all fabrics) and - like world demand - has been growing more rapidly than the demand for pure cotton fabrics. Production capacity is at present limited to one million meters per annum.

(c) The foreign exchange savings that could be achieved through import substitution of blended cotton-polyester fabrics are at least as good and probably better than those associated with the expansion of all cotton fabric production for the local market and/or exports.

(d) The low productivity and high production costs of Tanzania's existing textile mills are serious obstacles to the launching of a major cotton textile export drive in the next few years.

7. Tanzania has in recent years exported modest quantities of locally made cotton fabrics to neighboring countries in Africa. A major export drive, however, would probably have to concentrate on the European and American markets where competition from local and low cost Asian producers is fierce. Neighboring countries (with the possible exception of Mozambique for which no reliable information could be obtained) are or are soon expected to become self-sufficient in basic cotton fabrics. Concentration on import substitution for blended fabrics as the next major step in the development

of the textile sector (following the expansion of the Mwanza mill) would give the existing mills more time to achieve the productivity improvements required for a successful and sustainable export drive beyond the shores of Africa. A major (say 20-25 million meter capacity) polyester-cotton fabric project, if commenced within the next two years, could bring Tanzania's total imports and exports of woven fabrics into balance by 1980 and eliminate the current annual deficit of around US\$30 million on net textile imports.

I. THE TEXTILE INDUSTRY

Introduction

8. Tanzania's textile industry which was virtually non-existent ten years ago has rapidly expanded and now ranks first in the manufacturing sector, accounting for (1971) nearly 25% of employment, 13% of value added and 11% of the value of output in the manufacturing sector as a whole. Employment in the spinning and weaving of cotton textiles is at present around 14,000. The garment industry employs an additional 3,000. The cotton textile industry is now approaching national self-sufficiency and important decisions have to be made about the direction and size of its future development. The main purpose of this Annex is to analyze the current situation within the textile sector and its likely prospects so as to provide the background required for a sound sectoral development strategy.

Production and Ownership

9. The industry produces mostly carded cotton fabrics. The production of combed yarn and fabrics is negligible and until recently no synthetic or synthetic-cotton blends have been produced. Almost all the woven fabrics are produced from locally grown cotton; only 15% of the cotton, however, is processed and the balance is exported, mostly to Europe and Asia. Manufacturing of blankets was begun in 1961. Between 1965 and 1969, five spinning and weaving mills were built, the two biggest and most recent ones -- Mwanza Textiles and Friendship Textile Mill -- by the public sector. The historical growth of cotton fabrics production is shown in Table I below and the share of each of the existing mills is reflected in the Statistical Appendix of this Annex, Table 8.

Table 1

Local production of cotton fabrics, 1966 - 1974
(in million linear meters)

<u>Year</u>	<u>Local Production</u>	<u>Imported In Grey</u>	<u>Total Local Production</u>
1966	8.0	-	8.0
1967	10.0	-	10.0
1968	33.5	-	33.5
1969	53.3	-	53.3
1970	60.2	-	60.2
1971	66.2	-	66.2
1972	70.2	-	70.2
1973	71.7	2.3	74.0
1974	71.8	4.5	76.3

10. The first spinning and weaving mill was built in Tanzania in 1965 and in 1966 domestic production accounted for 10.3% of the consumption of woven fabrics. By 1973, Tanzania produced 71.7 million meters of fabrics (all cotton) accounting for 84% of domestic consumption (and 68% of all woven fabrics consumption). The industry, employing 825 shifts, was operating at 79% capacity utilization in 1973. As from January 1974 the industry has been employing 1,050 shifts per annum but, because of water and power shortages, there has been only a slight increase in production so far. These shortages should be rectified by 1976 and production may increase up to 84 million meters with the existing facilities. Minor expansion plans already approved and in progress (including new looms to be installed in Kiltex, Friendship and Sunguratex plants) would account for another 17 million meters capacity and would bring total production up to 101 million meters by 1977. Expansion of the Mwanza Textile mill at Mwanza (a project that is already in an advanced stage of preparation and is likely to be financed in part with a World Bank loan), would allow local production of woven cotton fabrics to reach 121 million meters by 1980.

11. After the Arusha Declaration (February 1967) the Government adopted a policy of controlling and directing all major industrial activities, including textile manufacturing, through parastatal organizations. The major textile companies were incorporated into and operated as subsidiaries of the National Development Corporation (NDC). In January 1974, all of the larger textile activities including spinning and weaving, as well as manufacturing of blankets and agricultural (kenaf) bags, were transferred from NDC to a new parastatal company, the National Textile Corporation (TEXCO). TEXCO is organized as a holding company with a staff of 30 and an operating budget of about Sh 4 million. TEXCO holds 33 to 100% of the shares of eight companies and exercises complete responsibility for overall management, production, planning and expansion programs of its subsidiary and associated companies (Statistical Appendix, Table 6).

12. The marketing of all the products manufactured by TEXCO companies is carried out by the National Textile Industries Corporation (NATEX), a wholly owned subsidiary of TEXCO. NATEX is also responsible for the export and import of yarn, fabrics, garments, as well as other textile articles and agricultural bags. The garment manufacturing and knitting industry consists mostly of small production units in the private sector. There are also two small private cotton weaving mills in the private sector (Statistical Appendix, Table 7). The value of output by privately owned textile and garment industries in 1973 was estimated at Sh 100 million compared to Sh 576 million in the public sector.

Spinning Capacity

13. In 1973 there were 94,000 cotton spindles and yarn production was estimated at 11,300 metric tons ^{1/} (Statistical Appendix, Table 7). Yarn is

^{1/} 120 kg/spindle per annum based on three shifts - average count 20 Ne (English count).

produced by Mwanza Textiles, Friendship, Kiltex and Sunguratex but only Friendship produces in excess of its requirements. The extra production is sold to private weavers and knitters as well as to Mwanza Textiles, and Kiltex. Only 100 metric tons were exported. Imports were negligible while one company (Sunguratex) reported a shortage of yarn on the order of 500 tons. By 1982 yarn consumption is expected to increase to 20,000 tons. To satisfy future demand, 8,600 new spindles will be added by Sunguratex, and 22,500 spindles is included in the Mwanza expansion. Plans are also in hand to modernize and rehabilitate the existing equipment (spinning frames) in Mwanza, Kiltex and Friendship textile mills. With the addition of another shift to the present three shifts (bringing it to 1,050 shifts per annum) the production of yarn by 1982 should exceed demand by some 500 - 1,000 tons, which is a reasonable safety margin.

Weaving Capacity

14. The total number of textile looms installed and active is 3,200 (excluding blanket looms), including 2,700 in the four integrated mills. ^{1/} The average production per loom in 1973 was 26.8 thousand meters and the total production was 72 million linear meters (Table 1 above). Including minor expansions approved and already in progress, at full capacity utilization (1,050 shifts) the production is expected to reach 102 million meters by 1977 and 122 million meters in 1980, when the expansion of Mwanza Textile mill is completed.

Converting Capacity

15. In 1973, the industry's capacity to dye, print and finish textile fabrics was substantially greater than the volume of loom state woven goods produced. Out of 71.7 million meters of woven fabric produced, about 12 million were either sold in grey or in a bleached state, 36 million meters were printed and 24 million meters dyed (Statistical Appendix, Table 10). At the same time, printing capacity was estimated at 49 million and dyeing capacity at 27 million meters. To take advantage of the existing unused capacity, 4.5 million meters of gray cloth were imported in 1974 for printing in Tanzania, and the plan is to import more grey to reduce the shortage of printed fabrics in the country. The expansion of the Mwanza Textile mill in Mwanza (MTL) provides for additional printing capacity for 23.5 million meters. Another 11 million meters of printing capacity will be added as a part of the expansion and rehabilitation of Friendship and Sunguratex plants. The dyeing capacity will also be increased to reach 33 million meters. In 1980 therefore the total dyeing and printing capacity in Tanzania will reach 117 million meters (plus yarn dyeing capacity equivalent to 6 million meters) as compared with weaving production estimated at 122 million meters.

16. Projected printing capacity by 1980 will be around 84 million meters but because of the substantial demand for grey, bleached and dyed fabrics, only about 63 million meters of the domestic woven fabric production of 122 million meters will be available for printing. It may therefore be

^{1/} Mwanza, Friendship, Sunguratex and Kiltex.

expected that substantial surplus printing capacity will arise after the implementation of the above mentioned projects. This projected temporary imbalance is, however, not considered a serious matter, as the excess printing capacity could be used for the printing of imported grey goods in the event of a short-fall in domestic woven fabric production or in case of a shift in demand from grey, bleached and dyed goods to printed fabrics which is entirely possible. The projected dyeing capacity on the other hand is expected to fall short of requirements and additional equipment may be required within the next five years (Statistical Appendix, Tables 9 and 10).

Raw Materials

17. Most of Tanzania's cotton crop is exported. The quality falls into the medium-long capacity (1-1/32 - 1-3/32") which is suitable for spinning yarn up to 50 cc. The total crop increased from 160 thousand bales in 1958 to 430 thousand bales in 1973 (Statistical Appendix, Table 11). Ninety percent of the crop is so-called AR grade which is close to US Memphis SM 1-1/16", and which sells in world markets at approximately 10% premium over the price of 1" staple. The other 10% is BR grade which consists of shorter fibre lengths and contains over-ripe, weaker fibres; its color is also inferior and the trash content is 12% as compared to 7% trash for AR quality. The BR cotton sells at a 25 to 35% discount below AR type.

18. Out of the 63,000 bales used by the local textile industry in 1973 only 3,000 bales were of the BR grade. The balance of BR grade was exported. It has been suggested that if all BR cotton now exported were used by the local industry, 37,000 more bales of AR cotton would become available for export. At current cotton prices, this would increase Tanzania's cotton revenues by over US\$3 million. A strong recommendation was made by UNIDO consultants in 1972 ^{1/} to use more BR grade cotton, but so far little progress has been made. Several trials have been made but production losses due to the high trash content and the inconsistent quality of BR grade cotton outweighed any savings. It appears that the system used to grade cotton in the ginneries has not been consistent or reliable and, consequently, the quality of BR grade received by the mills has been varying substantially from shipment to shipment resulting frequently in inferior yarn, in loss of production and downgrading in quality. Therefore, considerably more work has to be done both at the ginneries as well as at the mills before this course of action can be seriously considered.

19. Another suggestion made by UNIDO consultants was to consider importing lower grade 15/16" cotton for local production to replace the AR type which can be sold at higher prices. About 40,000 bales of the Tanzanian cotton is currently "underspun", i.e., used in yarn counts which can be produced using imported 15/16" cotton from the USA (ORLEANS TEXAS SIM) or

1/ Survey of the Textile Industry in East Africa, UNIDO, Vienna, 1972.

Pakistan (PUNJAB/AC 134). The current difference in price (cif North European port) between AR type and 15/16" grades is of the order of seven US cents per lb (Statistical Appendix, Table 12). However, the cost of shipping 15/16" grade cotton from any likely source (e.g., USA or Pakistan) to Dar es Salaam is at present in excess of this price differential.

Productivity and Costs

20. Production costs in Tanzania's textile industry are high by almost any standard. This is due to low labor productivity, management problems, and frequent supply disruptions (of water, power, intermediate inputs, spare parts and occasionally also raw materials). There is no inherent reason, however, why Tanzania should not be able to become an efficient producer in the future. The problem of low productivity is very complex and touches on almost every aspect of the functioning of the economy. One of the first priorities should be to try and improve labor productivity.

21. Labor costs per unit of output in Tanzania's textile industry should be a fraction of those in Western Europe or North America because average wages and fringe benefits are much lower in Tanzania (about 10% of those currently prevailing in the US textile industry), while the equipment used in most mills is very similar (the Friendship mill is a notable exception). Because of low productivity, however, labor costs per unit of output in Tanzania are only marginally lower in spinning and higher in weaving, compared to those in the USA (see Statistical Appendix, Table 13).

22. The figures indicate that labor productivity in Tanzania's textile industry has actually deteriorated between 1969 and 1974. This is caused, in part, by a sharp increase in the labor force in 1974 to provide the fourth shift (starting from January 1974), which has not been accompanied by any production gains so far. Assuming a full capacity utilization of 1,050 shifts per annum, a 20% improvement in productivity can be envisaged within the next two years.

23. One important factor causing low productivity per man-hour is serious overstaffing in most of the mills. The two largest mills, Friendship and Mwanza both employed in 1973 some 75% more workers than in 1970 even though both mills had become fully operational in 1970 and did not install additional machinery in the meantime. The Mwanza mill currently employs (on a four-shift basis) some 2,400 workers. A plant of the same size in North America using the same equipment would employ no more than 300. The Friendship mill which has roughly the same production capacity as the Mwanza mill but uses a much older (and more labor intensive) technology currently employs more than 5,000. The mission has not attempted to compare the relative efficiency of the Mwanza and Friendship technology mainly because the degree of overstaffing in these two mills is different and the level of employment consistent with optimum efficiency could not be determined with accuracy.

24. Production costs are further adversely affected by inflated prices being paid by the industry for equipment, dyes and chemicals, spare parts, as well as high overhead charges including a large number of highly paid expatriates. A detailed cost comparison has been carried out for eight fabrics produced currently by MTL with the costs of producing similar fabrics in the USA. To eliminate the effect of fluctuation in cotton prices, the mill margins (the difference between the cost of finished product and the cotton content) were used as a yardstick for efficiency. The figures indicate that Tanzania's manufacturing costs are 30% to 80% (55% on the average) higher than the corresponding costs in the USA (Statistical Appendix, Table 17). This rather wide difference in costs is reflected in selling prices. In the case of Kitange fabrics the ex-factory price of the local fabric made in Mwanza in August 1974 was considerably higher than the ex-factory price in the USA or the import price c.i.f. Dar es Salaam of similar fabrics imported from the USA or Asian countries. (Statistical Appendix, Tables 18 and 19.)

25. Similarly, the mill margins and selling prices of carded cotton yarn are higher in Tanzania than in the USA and Western Europe (Statistical Appendix, Table 20). The difference between the domestic yarn prices between Tanzania and Europe is not as significant as in the case of fabrics. However, when the costs of freight and duty are added it appears that Tanzanian yarn can be competitive in the European Common Market only if heavily subsidized. Without the 7% protective duty levied by the EEC on imported cotton yarn the subsidy would still have to be about US\$0.25 per lb of yarn, or about 50% of the value of the cotton content at current prices.

26. The mission's overall conclusion is that Tanzania's production costs for woven cotton fabrics and yarn have to come down significantly before a major export drive for standard cotton fabrics can be launched with a reasonable chance of economic gain. The subsidy required for successful competition on distant markets (even in the absence of artificial trade barriers) would under present relative price and cost conditions be prohibitive and most of it would probably have to take the form of reduced producer prices paid to the cotton farmers. This does not mean, of course, that Tanzania could not export at all. There will always be markets for specialty items (although foreign competition usually catches up quickly with new opportunities) and there will also be periodic shortages of various items in neighboring countries that Tanzania could fill. Export opportunities for 5 to 15 million meters annually may well be possible even if the Tanzanian textile industry as a whole is non-competitive.

27. As in all other sectors the serious shortage of well trained and experienced Tanzanian managers is one of the principal constraints to improving productivity. The only mill which is entirely managed by Tanzanian personnel is the Friendship mill in Dar es Salaam which was built with Chinese aid (1967/68) and which uses a relatively antiquated technology. The Chinese training teams that initially managed the factory and trained the

staff have done an excellent job. They were gradually withdrawn over a period of years in accordance with a detailed training program. The other four public sector textile mills have been managed by foreign companies: Sunguratex by Tootal (UK), Kiltex (two plants) by Texunion (France) until the end of 1974 and Mwanza mill (MTL) by Textilconsult (Italy).

28. At MTL, there are currently 27 expatriates at the upper and middle management level. Most of the key technical people have been under a contract with Textilconsult which indirectly also owns 20% of the shares of Mwanza. Apparently, because of a disagreement about dividend policy as well as TEXCO's dissatisfaction with Textilconsult's performance, particularly in the area of training, the present management contract may not be renewed when it expires in March 1976.

29. It may be expected that because of the Government's new income tax policy, ^{1/} a number of expatriates including several key people currently employed in MTL will elect to leave Tanzania sooner than they otherwise would have done. At Kiltex, all expatriates under a contract with Texunion have already departed and the mill is now managed by expatriates under a contract with Saigol Brothers of Pakistan. TEXCO which was formed only in January 1974 has at present no technical and management personnel to fill the gaps. Arrangements have been made recently by TEXCO with Saigol to recruit management personnel for MTL but even if the replacement of the present management is adequate and competent, the expected rapid change over of personnel could temporarily reduce the efficiency of existing operations and TEXCO's capacity to implement new projects.

30. At present, neither the mills (except Friendship) nor TEXCO have a well defined program for the training of technical, production or administrative personnel. As part of the expansion of MTL, it has been suggested to include a project oriented training scheme. The plan is to select 20 Tanzanian nationals with at least high school education and five years experience in the textile industry. Successful candidates would be sent to one of the recognized textile schools in Europe, North America or Asia for a six week specially designed crash course in textile technology, to be followed by 12 weeks training in the textile mills preferably in a location close to the textile school. In this way, a good start could be made and valuable experience could be gained for the future formulation and execution of a training program for the whole textile sector which undoubtedly will still be required.

^{1/} Early in 1974 the Government introduced a more steeply progressive personal income tax which reduced the after-tax income of the high income earners.

II. MARKETING AND PRICING OF TEXTILES

Organization

31. All yarns, fabrics, garments and other textile articles domestically produced as well as imported are marketed and distributed by the National Textile Industries Corporation (NATEX). The company was formed in 1970 and is a wholly owned subsidiary of TEXCO. Since 1973 NATEX has taken over the sales, marketing and distribution of kenaf and sisal agricultural bags and (as of September 1974) the procurement and importation of inputs used by the textile industry. NATEX has also the sole responsibility for the export of yarn, fabrics, garments and agricultural bags. The sales of NATEX increased from Sh 176 million in 1971 to Sh 560 million in 1973, 64% of which was of local origin. The sale of imported goods amounted to Sh 200 million including Sh 15 million worth of agricultural bags, twine and hessian cloth. Details of NATEX's trading activities are shown in the Statistical Appendix, Table 14.

32. NATEX operates 34 depots throughout the country and its own fleet of vehicles for distribution. Because of its key marketing function NATEX has also been given the responsibility to project domestic demand for all textile goods and to prepare the production program for each of the mills under TEXCO to achieve a balance between the composition of supply and demand. On the domestic market NATEX sells directly to private and cooperative retailers. Exports are effected by NATEX or directly by the manufacturers under a NATEX endorsement. A government working party is considering a textile trade reorganization plan that would transfer NATEX's domestic wholesale function to the newly established Regional Trading companies.

Pricing Policy and Distribution

33. The prices at which NATEX purchases domestic fabrics are determined by the National Price Commission (NPC) of the Ministry of Commerce and Industry and are generally based on ex-factory costs plus a profit margin which on average is intended to be about 10% of costs. In practice, the actual profit may vary from year to year and from item to item. The prices are reviewed periodically (usually once a year) and as costs vary continuously, the mills have occasionally operated at a loss or have been losing money on specific items. (See, for a more detailed discussion of Tanzania's pricing methods, Annex IV in this Volume.) To improve profitability the margin for a particularly popular fabric (Khanga prints) was recently increased to 31% to compensate for low profit and losses on other items. Consequently, an examination of costs and selling prices of specific fabrics reveals a rather complex structure. The current prices were established in April 1974 on the basis of 1973 costs but in the second quarter of 1974, MTL was losing money on 40% of the items.

34. The price paid by NATEX includes Sh 0.3 per square meter Excise Duty (which is the equivalent of about 15% ad valorem per linear meter on average for all fabrics) and 25% Sales Tax (20% for Khanga). On average, the indirect tax on locally produced fabrics is therefore about 40% of the ex-factory price. The taxes are collected by the mills and paid to the Government.

35. Until April 1974 the prices at which NATEX bought differed from mill to mill, depending on their production costs. Since the mills had a guaranteed market for their output (NATEX) this system did not provide an incentive for efficiency. Since April 1974 the prices at which NATEX buys are based on the costs of the least efficient (marginal) producer. Consequently, the other mills (when a particular item is produced in more than one mill) now have an incentive to improve their performance compared to the least efficient mill thus increasing their profit margin. This is a small improvement over the old system but there is still no comprehensive incentive framework that provides efficiency incentives to all mills under all circumstances.

36. NATEX's selling prices (to domestic customers) are identical for the same produce produced by different mills and those prices are uniform for all regional distribution centers. Hence, NATEX absorbs differences in transport costs between the mills and its sales depots throughout the country. Since NATEX - like other parastatal companies - is expected to show a profit, it has an incentive to supply the nearest depots first, which is bound to lead to distribution problems, especially in times of overall shortages. Textile goods, like many other consumer goods to which similar pricing policies apply, are equally distributed with the distant towns and rural areas facing more serious and more frequent shortages than Dar es Salaam and other manufacturing centers.

37. The price of cotton, which accounts for up to 35% of the direct costs of fabric, is determined by the Economic Committee of the Cabinet. Until recently, the price of cotton for the domestic mills was identical with the price obtained in export markets. In 1973 and early 1974, a rapid increase of cotton prices in the international markets created a situation in which all textile mills were losing money as their selling prices were frozen. Eventually, in April 1974, the price of cotton for domestic mills was fixed at Sh 7.47 per kg (US\$0.47 per lb) delivered, and the prices of fabrics were adjusted upwards so most of the mills are expected to show a profit for 1974.

38. The freezing of the price of cotton to local textile mills at a point below the export price does affect the distribution of income between cotton farmers and consumers of cotton textiles. In this particular case, the Tanzanian cotton farmer did not suffer any direct income reduction because the producer price for seed cotton was fixed much below export parity

while surpluses were being accumulated by the Tanzania Cotton Authority, so the price reduction resulted in a reduction of surpluses accruing to the Authority.

39. Under the circumstances, the freezing of the cotton price to local mills was probably a sensible decision. It enabled the Government to stabilize domestic textile prices in a highly unstable international situation without upsetting the cash flows of the textile mills. As a long-term measure, however, the mission has grave reservations about any pricing policy that results in subsidizing the textile mills at the expense of the cotton farmers. To prevent this from happening in Tanzania, the Government may consider adopting the general principle that domestic processors of raw materials should normally pay the same price for those materials as foreign buyers. Special circumstances may, of course, justify special measures but as a general rule the Government should guard against pressures to protect domestic industries and consumers of manufactured goods at the expense of the raw material producers.

Import Restrictions

40. Imported textile goods are subject to customs duties ranging from 30 to 45% and Sales Taxes averaging 33% of the duty paid costs. (The Sales Tax on imported textiles is the equivalent of the Sales Tax plus Excise Duty payable by local mills.) All imports are confined to NATEX but - like all other importers - NATEX requires an import license issued by the Bank of Tanzania. Import licenses are issued in accordance with a national foreign exchange allocation plan which is reviewed at least once every six months. The severity of quantitative import restrictions fluctuates with the country's overall balance of payments position and with the output of local mills.

41. Locally produced textiles are given virtually automatic preference over imported goods. Import duties therefore do not in the first place have a protective function but are revenue raising instruments. NATEX normally sells imported textiles to retailers at cost plus a 10% mark up on total costs including all taxes. Retailers are also allowed (by the National Price Commission) a maximum gross margin of 10% on most items.

42. Because of Tanzania's complicated system of pricing, import licensing and confinement schedules, it is practically impossible to determine with precision what level of nominal and effective protection is in effect afforded to the local textile industry. Perhaps the best method to gain some impression of the relative efficiency of local production compared to import alternatives is to compare mill margins (Statistical Appendix, Table 17). In 1974 the average mill margin for eight different products of MTL was approximately 55% larger than the average for a typical American mill producing the same goods. If those mills paid the same price for their raw material, cotton, the ex-factory costs of MTL would be approximately 40% higher than those of the American mill. However, the American mill uses

cheaper (shorter staple) cotton than MTL to produce the same quality fabric, which means that the actual cost difference is even greater, about 50%. If the US mill were to export its products to Tanzania then the landed cost, Dar es Salaam would still be only about 75 - 85% of the ex-factory cost of MTL.

43. Another approach to the approximate measurement of the relative efficiency of textile production in Tanzania is to compare actual production costs in Tanzania (excluding taxes and subsidies) with import prices from various alternative sources of supply. This is done in the Statistical Appendix, Table 18 for Kitange prints. The Table shows that the MTL ex-factory cost per meter is about 19% higher than landed cost ex-USA and nearly 40% higher than Kitange imported from Pakistan. In other words, if Tanzania were a market economy with no domestic price control and using only tariffs to protect local industries, the nominal import duty required to raise the price of imported Kitange prints to the domestic price level would be of the order of 40%. The equivalent effective rate of protection would be of the order of 120%. These figures clearly support the mission's view that Tanzania is not yet ready to become a regular exporter of cotton textiles and that major productivity improvements are required to achieve that position.

III. DOMESTIC DEMAND AND EXPORT PROSPECTS

Domestic Demand Projections

44. Consumption of cotton and other fabrics in Tanzania is still very low, only about 7.9 meters (1.4 kg) per capita per annum (1974), compared to 8.8 meters (1.6 kg) for Africa as a whole (excluding South Africa), and 15.7 meters (2.8 kg), in all developing countries. Actual consumption of woven fabrics since 1966 is reflected in Table 2 below.

Table 2

Historical production, consumption and imports of woven fabrics
(in million linear meters)

Year	Local Produc- tion	Imported in Gray	Total Local Produc- tion	Imported as			Export	Domestic Consump- tion	Of which: cotton fabrics only
				Finished Cotton	Other	Total			
1966	8.0	-	8.0	50.5	19.5	70.0	-	78.0	58.5
1967	10.0	-	10.0	30.0	12.0	42.0	-	52.0	40.0
1968	33.5	-	33.5	31.5	12.2	43.7	0.4	76.2	64.0
1969	53.3	-	53.3	31.6	7.3	38.9	0.5	91.7	84.3
1970	60.2	-	60.2	9.7	13.8	23.5	4.4	79.3	65.5
1971	66.2	-	66.2	4.9	9.2	14.1	4.7	75.6	66.4
1972	70.2	-	70.2	1.0	13.9	14.9	2.0	74.1	60.2
1973	71.7	2.3	74.0	12.9	21.3	34.2	1.8	106.4	85.1
1974	71.8	4.5	76.3	12.5	28.4	40.7	3.0	114.0	86.6

Of the total 1974 woven fabric consumption of 114 million meters, net imports were 42 million meters at a cost of US\$30 million. Nearly 70% of imported fabrics consist of polyester and polyester-cotton blended fabrics for which domestic production capacity is at present limited to one million meters per annum, or less than 4% of demand.

45. In addition to fabrics Tanzania imports a variety of diverse textile articles as underwear, outerwear, blankets, corsets, handkerchiefs, etc. The c.i.f. value of these articles in 1973 was Sh 94 million and it is estimated that these imports account for an additional 0.4 kg of fibre consumption per capita. The textile import data are summarized below.

Table 3

Textile imports in millions of Sh; 1971 - 1974

<u>Year</u>	<u>Fabrics</u>	<u>Other Textile Articles</u>	<u>Total</u>
1971	39	23	62
1972	49	24	73
1973	162	94	256
1974 (est.)	213	109	312

46. The historical growth of woven fabric consumption has been very erratic. In 1969 total consumption was higher than in the following three years. Taking 1966 as a base year, the trend growth rate appears to have been somewhere between 4 and 5% per annum. One major complication in using past consumption figures as a basis for the projection of future demand is that consumption has from time to time been artificially depressed by quantitative import restrictions. Tanzania's textile marketing authorities estimate that at current retail price levels the domestic market could absorb up to 20 million meters more than what is actually available. At the time of the mission's visit to Tanzania, however, there was no evidence of serious shortages or of a substantial black market in woven fabrics.

47. The mission's projections of demand for woven fabrics are presented in the Statistical Appendix, Tables 3, 4 and 5. Table 3 deals with all woven fabrics together, Table 4 with cotton fabrics only and Table 5 with fabrics other than the pure cotton fabrics. These projections show two alternative demand projections, a minimum and a maximum. The minimum is an extrapolation of historical consumption figures and the maximum assumes that there was a latent (unsatisfied) demand for 19 million meters in 1974. In both cases annual demand is projected to grow at 4.3%. This is roughly equal to what appears to have been the trend during the past eight years, when average per capita incomes grew by about 2% per annum. In view of the serious economic problems that are being faced by Tanzania at the present time and the likelihood that GNP growth will be slow in the immediate future (mainly because of a sharp deterioration in the country's terms of trade) an annual compound growth rate of 4.3% for textile consumption may be on the high side. The mission tends to have more faith in the "minimum" than the "maximum" projections.

48. Several conclusions emerge from the comparison of demand and domestic production projections in Tables 3, 4 and 5 of the Statistical Appendix. The first one is that the expansion of MTL is a high priority and indeed an overdue project. Expansion of the mill should have been undertaken several years ago. However, if the project is implemented in

accordance with current projections and if all the other (smaller) projects currently under implementation are executed without delay, Tanzania may well have a small net surplus of cotton fabrics production from 1978 (until 1982 when the country would again resume net imports). ^{1/} In case the "maximum" projections should turn out to be more realistic Tanzania would not reach a point of self-sufficiency and net import requirements of woven cotton fabrics would reach a low of 16 million meters in 1978 and 1979.

49. The picture is very different for the projected demand for and local production of fabrics other than the pure cotton fabrics (Statistical Appendix, Table 5). There the proportion of fabrics for which there is likely to be demand and that could not be economically manufactured in the country (named "essential imports" in the Table) is much higher than in the case of pure cotton fabrics. This does, of course, not mean that the Government would not have the option to limit or ban those imports if that is desired. However, there will be substantial demand for cotton-polyester blended fabrics that could be efficiently made in Tanzania (between 10 and 15 million meters by 1980).

Export Prospects

50. In the last five years Tanzanian exports of cotton fabrics have been limited to neighboring Uganda and Kenya and varied between two and four million meters per annum. At the same time, exports of yarn have been negligible. With the exception of a few thousand samples of Khanga and Kitange prints distributed through the Tanzanian embassies in the USA and Europe, no serious attempt has been made to explore the export opportunities for Tanzanian textiles outside Uganda and Kenya. The mission is not optimistic about large-scale export possibilities for woven cotton fabrics (or yarn) during the next five-year plan (1975 - 1980) for the following reasons:

- (a) The productivity of existing mills at present is low and production costs are too high for successful competition in international markets. The protective duty on imported fabrics levied by the EEC and many other net importers is a serious aggravating factor, but it is not the main obstacle as things stand at present. The subsidy required to compete effectively in the international market for Kitange prints with, e.g., Pakistan or Taiwan would have to be of the order of 25 to 35% of the ex-factory costs (of MTL) which is the equivalent of more than 60% of the value of the raw cotton input. If the cotton farmer would have to bear the cost of

^{1/} These projections take into account that there will always be some demand for specialty fabrics, the local production of which could not be justified on economic grounds.

such a subsidy it is well possible that cotton production would fall. Before embarking on a large-scale cotton fabric export strategy, Tanzania's first priority should be to drastically raise productivity and lower costs. Also, a considerable amount of market and technical research and development has to be done regarding quality, styling, pricing and distribution before any definite plans for export oriented facilities are formulated.

- (b) Export opportunities in the East African Community and other neighboring countries in Africa are likely to be modest.

51. Uganda traditionally has been an exporter of cotton fabrics (mostly to Kenya). Recently, however, due to political and economic problems the textile industry in Uganda has been reported to operate at a fraction of its capacity but yet in the years 1970-72, Uganda exports of cotton fabrics exceeded imports by 20 million meters. Kenya has been importing textile fabrics at a rate of 40 million meters per annum, including eight million meters of cotton prints. The construction of two textile mills with a total capacity to produce 22 million meters per annum by 1977 and 47 million meters by 1980 is under consideration. It is estimated that in terms of cotton prints, Kenya will be self-sufficient by 1977 and by then, only a small proportion of other imported fabrics will be of the type which can be produced in Tanzania.

52. Erection of new and/or expansion of existing manufacturing plants have also been reported in Zaire, Zambia, Sudan, Malawi and Ethiopia. It appears that most African countries have plans to become self-sufficient by the end of the decade as far as cotton textile fabrics are concerned. A possible exception is Mozambique, but the mission has not been able to gather reliable information on plans for the expansion of the textile industry in that country. Also, in some African countries (Zambia, Somalia), a portion of the textile requirements are being supplied on concessionary terms by the People's Republic of China eliminating almost completely the requirements for regular commercial imports. Consequently, future exports of Tanzanian cotton fabrics to other African countries are likely to be limited to occasional sales and opportunities to build a sizable and permanent market in these countries are not envisaged.

IV. PRIORITIES AND PROSPECTS FOR FUTURE EXPANSION
OF THE TEXTILE INDUSTRY

Priorities for Investment

53. On the basis of demand and supply projections (Statistical Appendix, Tables 3, 4 and 5) the mission concludes that in addition to the rehabilitation and expansion of existing mills already under implementation - there is immediate scope for two major textile projects. The first is an integrated textile mill with a capacity to produce 20 to 30 million meters of cotton fabrics to meet the growing demand for cotton fabrics by 1978. The second is an integrated mill with a capacity to produce 20 - 25 million meters of polyester-cotton blend fabrics.

54. Due to the limited size of the Tanzanian textile industry, problems of infrastructure, the shortage of trained personnel, as well as the fact that spare parts, dyestuffs and chemicals have to be ordered 12 months in advance, there are a limited number of plant sites suitable for integrated mills. There are definite economic and technical advantages in expanding existing plants. However, shortage of water, electrical power, as well as the Government's policy to decentralize the manufacturing industry, would eliminate the three existing textile plants in the Dar es Salaam area as sites for future expansion.

55. Therefore, on the basis of the mission's review of the sector, the expansion of the mill in Mwanza to produce additional cotton fabrics is the first priority. The Government's plan is to double the mill's capacity and therefore expand production by about 20 million meters per annum. The mission concluded that the existing factory buildings could accommodate an even bigger expansion project. A 30 million meter project would have the attraction of adding an additional 10 million meters at relatively low investment cost (no additional infrastructure would be required) without increasing management requirements commensurately. At the same time it would postpone the need for the next integrated cotton textile mill by 18 months to two years if self-sufficiency in woven cotton fabrics is to be maintained.

56. In the opinion of the mission the next priority after the expansion of MTL should not be the establishment of another large fully integrated cotton fabrics mill (as appears to be the Government's plan) but the establishment of an integrated mill to produce polyester-cotton blended fabrics, which should be built as soon as the availability of finance and manpower permit. Arusha's Kiltex plant which is about to start limited production of polyester-cotton fabrics seems to be a logical site for such a project. The existing factory building could accommodate expansion from the present one million meter per annum production capacity to about seven million meters. There is, however, need for an expansion project beyond seven million meters. Domestic demand for polyester-cotton blended suiting and shirting fabrics that could be made efficiently in Tanzania is estimated at 10 - 15 million meters by 1980.

57. It is perhaps ironic that Tanzania probably has a greater comparative advantage in the production of cotton-polyester blended fabrics (based on local cotton and imported polyester fibre) than in pure cotton fabrics. The main reason for this is that Tanzanian AR grade cotton is of a type that is technically ideally suited for the manufacturing of fine blended combed fabrics. This type of cotton is available in limited quantities only in some parts of the world (Egypt, Sudan, Peru, Southwest USA).

58. The potential foreign exchange savings associated with a polyester-cotton blended fabric project is interesting. On average the landed cost in Dar es Salaam (excluding duties and taxes) of standard 65/35 polyester-cotton fabric in 1974 was US\$1.00 per meter. In other words, a 10 million meter project would substitute US\$10 million worth of imports per annum. The annual foreign exchange costs of operating the factory would be about US\$7 million - \$1.8 million for polyester fibre, plus \$700,000 reduced cotton export revenues (assuming a price of \$0.50 per lb. of AR grade) plus \$700,000 for imported dyes, chemicals, spare parts and other inputs, plus \$200,000 expatriate salaries and benefits plus \$3.5 million for interest and amortization of foreign loans used to finance the project. The foreign exchange savings associated with a 10 million meter cotton textile import substitution project would be less. Furthermore, it is quite possible that - because of the type of cotton grown in the country - Tanzania could manufacture fine blended combed fabrics at an internationally competitive cost level.

59. Hence, the mission recommends that the Government should consider a sizable (say 20-25 million meter p.a.) polyester-cotton blended fabric project as the next priority following the Mwanza expansion project. If the project is sited in Arusha, advantage could be taken of existing infrastructure, spare capacity of existing machinery, and local experience in the manufacturing of such fabrics. The Government's priority appears to be for the construction of a large new integrated cotton textile mill in Musoma. There is at present no infrastructure in Musoma to serve the project. Therefore investment capital requirements would be very high and this would come at a time that Tanzania's financial resources are already stretched to the limit. On the other hand, siting a major project in Musoma would bring development and employment opportunities to an area that has in the past been rather neglected.

60. The setting of investment priorities in Tanzania is ultimately the responsibility of the Economic Committee of the Cabinet. Economic consideration appears to weigh in favor of an Arusha based blended fabric project, but this requires a more detailed analysis than what is presented in this Annex. To clarify the issues and to prepare the more detailed analysis required the mission suggests that, as part of the Mwanza expansion project, the Government urgently undertakes a study of the domestic and export market prospects for cotton and polyester-cotton fabrics and the costs and benefits associated with the various alternative development strategies outlined in this chapter.

Constraints on Development of the Textile Sector

61. The principal constraint is a pervasive shortage of qualified and experienced Tanzanian managers. The easiest and quickest way to alleviate this constraint would be to stretch the timetable for the Tanzanianization of senior technical and managerial positions and use more expatriates in the meantime. To prevent such action from becoming a permanent feature of industrial life in Tanzania, the Government should give top priority to on-the-job training and link every important expatriate appointment and each management contract to the execution of an effective training program. TEXCO is responsible for the overall supervision of all major textile mills in the country as well as the import, distribution and marketing of textile products by NATEX. This is a major task in itself. On top of it TEXCO is responsible for the planning and supervision of all expansion plans including the Mwanza project. Together these tasks will fully occupy TEXCO's available management capacity. Any further major new project would require a strengthening of TEXCO lest its manpower resources become too thinly spread for effective control.

62. The second major constraint is a financial one. TEXCO's own financial resources, generated through the cash flow of its subsidiaries, are very limited and any major new project requires the injection of new equity and loan capital. The cost of the Mwanza expansion project is estimated at US\$44.3 million (US\$66.5 million if the expansion would be by 30 million meters instead of 20). The World Bank is likely to be a financial partner in this project. The Musoma project (capacity 25 million meters) is estimated to cost US\$70 million (including infrastructure). A 20 million meter polyester-cotton blended fabric plant in Arusha is estimated to require about US\$45 million capital resources. In all, investment requirements of the textile sector during the next five-year plan are estimated at somewhere between US\$90 million and US\$140 million depending on the choice of strategy.

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TABLE 1

IMPORTS OF WOVEN FABRICS

(In million linear meters)

Year	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
By NATEX ^{1/}	3.8	3.3	3.7	17.4	24.3
By Garment Manufacturers	<u>19.7</u>	<u>0.8</u>	<u>11.2</u>	<u>19.1</u>	<u>21.1</u>
TOTAL	<u><u>28.5</u></u>	<u><u>24.1</u></u>	<u><u>14.9</u></u>	<u><u>36.5</u></u>	<u><u>45.4</u></u>

Source: National Textile Corporation

TABLE 2

WOVEN FABRICS PRODUCTION, CONSUMPTION, IMPORTS AND EXPORTS, 1970 - 74
(In million linear meters)

<u>Year</u>	<u>Production</u>	<u>Imported in Gray</u>	<u>Total Local Production</u>	<u>Imported as Finished Fabrics</u>			<u>Export</u>	<u>Available for Home Market</u>	<u>Population (Million)</u>	<u>Apparent Consumption ^{2/} per capita</u>
				<u>Cotton</u>	<u>Other</u>	<u>Total</u>				
1970	60.2	-	60.2	9.7	13.8	23.5	4.4	79.3	12.6	6.3
1971	66.2	-	66.2	4.9	9.2	14.1	4.7	75.6	13.2	5.8
1972	70.2	-	70.2	1.0	13.9	14.9	2.0	74.1	13.6	5.5
1973	71.7	2.3	74.0	12.9	21.3	34.2	1.8	106.4	14.0	7.6
1974	71.8	4.5	76.3	12.5	28.4	40.9	3.0	114.0	14.4	7.9

Source: National Textile Corporation

TABLE 3

PROJECTED WOVEN FABRICS PRODUCTION, CONSUMPTION, IMPORTS AND EXPORTS

(In million linear meters)

Year	Consumption		Local Production B	Total Net Imports ^{7/}		Essential Imports ^{8/}	Imports (Exports) Balance ^{2/}		Population (Million) F	Consumption per Capita G	
	Min. ^{2/}	Max. ^{3/}		C	Min.		Max.	E		Min.	Max.
			A								
1973 ^{1/}	106	128	74	32	54	17	15	37	14.0	7.6	9.1
1974 ^{1/}	114	133	76	38	57	16	22	41	14.4	7.9	9.2
1975	116	139	85 ^{4/}	31	54	17	13	37	14.8	7.9	9.4
1976	121	145	93	28	52	18	10	32	15.2	8.0	9.5
1977	127	151	102 ^{5/}	25	49	19	6	30	15.6	8.1	9.7
1978	132	157	112 ^{6/}	20	45	19	1	26	16.0	8.2	9.8
1979	137	164	117 ^{6/}	20	47	21	(1)	26	16.5	8.3	9.9
1980	144	171	122 ^{6/}	22	49	21	1	28	17.0	8.4	10.0
1981	150	179	122	28	57	22	6	35	17.4	8.6	10.2
1982	156	186	122	34	64	22	12	42	18.0	8.7	10.3

^{1/} Actual^{2/} Projections based on the apparent consumption in 1974 and on annual growth rate of 4.3% thereafter.^{3/} Projections based on the estimated demand in 1977 and on annual growth rate of 4.3% thereafter.^{4/} Cotton fabrics capacity of 84 million meters plus 1 million meters blended fabrics capacity starting from 1975^{5/} Capacity of present mills at attainable productivity plus minor expansions already approved in progress.^{6/} Mwanza expansion at 50, 75 and full capacity in 1978, 1979 and 1980 respectively.^{7/} Allowing for export of about 2 million meters in both 1973 and 1974 (i.e. apparent consumption plus a national 22 million meters in 1973 and 19 million meters in 1974 being TEXCO's estimates for unsatisfied or latent demand in those years)^{8/} Fabrics which cannot be made in Tanzania.^{9/} E = A - (B + D)

TABLE 4

PROJECTED COTTON FABRIC PRODUCTION, CONSUMPTION,
IMPORTS AND EXPORTS

(In million linear meters)

Year	<u>Demand</u> A		<u>Local</u> <u>Production</u> B	<u>Total Net Imports</u> <u>(Exports)</u> ^{6/} C		<u>Essential</u> <u>Imports</u> ^{7/} D	<u>Import (Export)</u> <u>Balance</u> ^{8/} E	
	<u>Min.</u> ^{2/}	<u>Max.</u> ^{3/}		<u>Min.</u>	<u>Max.</u>		<u>Min.</u>	<u>Max.</u>
1973 ^{1/}	85	103	74	11	29	3	8	26
1974 ^{1/}	87	107	76	11	31	2	9	29
1975	92	112	84	8	28	3	5	25
1976	96	116	92	4	24	3	1	21
1977	101	121	101 ^{4/}	0	20	3	(3)	17
1978	105	127	111 ^{5/}	(6)	16	3	(9)	13
1979	109	132	116	(7)	16	4	(11)	12
1980	114	138	121	(7)	17	4	(11)	13
1981	119	144	121	(2)	23	4	(6)	19
1982	124	150	121	3	29	4	(1)	25

^{1/} Actual

^{2/} Projections based on the apparent consumption in 1974 and on annual growth rate of 4.3% thereafter.

^{3/} Projections based on the estimated demand in 1974 (i.e. apparent consumption plus a notional 18 million meters in 1973 and 20 million meters in 1974 being TEXCO's estimate for unsatisfied or latent demand in those years)

^{4/} Capacity of present mills at attainable productivity plus minor expansions already approved and in progress.

^{5/} Mwanza expansion at 50, 75 and maximum capacity in 1978, 1979 and 1980 respectively.

^{6/} Allowing for export of 2 million meters in both 1973 and 1974.

^{7/} Fabrics which cannot be made in Tanzania.

^{8/} E = A - (B + D)

TABLE 5

PROJECTED REQUIREMENTS OF FABRICS ^{1/}
OTHER THAN PURE COTTON FABRICS
(In million linear meters)

<u>Year</u>	<u>Demand</u>		<u>Local</u>	<u>Total Net</u>		<u>Essential</u>	<u>Import (Export)</u>	
	<u>A</u>	<u>B</u>	<u>Production</u>	<u>Imports</u>		<u>Imports</u> ^{5/}	<u>Balance</u> ^{6/}	
	<u>Min.</u>	<u>Max.</u>		<u>Min.</u>	<u>Max.</u>	<u>D</u>	<u>Min.</u>	<u>Max.</u>
1973 ^{2/}	21	25	-	21	25	14	7	11
1974 ^{2/}	27	26	-	27	26	14	13	12
1975	24 ^{3/}	27 ^{4/}	1	23	26	14	9	12
1976	25	29	1	24	28	15	9	13
1977	26	30	1	25	29	16	9	13
1978	27	30	1	26	29	16	10	13
1979	28	32	1	27	31	17	10	14
1980	30	33	1	29	32	17	12	15
1981	31	35	1	30	34	18	12	16
1982	32	36	1	31	35	18	13	17

^{1/} Including all synthetic fabrics, blended fabrics and woolen fabrics.

^{2/} Actual

^{3/} Projections based on the apparent consumption in 1974 and on annual growth rate of 4.3% thereafter.

^{4/} Projections based on the estimated demand in 1974 and on annual growth rate of 4.3% thereafter.

^{5/} Fabrics which cannot be produced locally for technical or economic reasons.

^{6/} $E = A - (B + D)$

TABLE 6

SUBSIDIARY AND ASSOCIATE COMPANIES OF TEXCO
(as of November 1974)

<u>Company</u>	<u>Share Capital in Million Shillings</u>	<u>% of Shares Owned by Texco</u>	<u>Estimated 1974 Production (in million meters of fabrics)</u>
1. National Textile Industries Corp.Ltd. (Natex)	10	100	Marketing Company
2. Friendship Textile Mill Ltd.	30	100	26 Million
3. Kilimanjaro Textile Corp Ltd.	26.4	57	21 Million
4. Mwanza Textiles Ltd.	20	40	23 Million
5. Tanganyika Dying and Weaving Mills Ltd.	20	51	13 Million
6. Blankets Manufacturers Ltd.	2	33	1,500 blankets
7. East African Kenaf Industries Ltd.	23	100	2,700 kenaf bags
8. Tanzania Bag Corp. Ltd.	7.5	60	3,600 sisal bags

1/ National Textile Corporation

TABLE 7

PRODUCTION AND CONSUMPTION OF COTTON YARN
(In kilograms)

MILL	PRODUCTION 1973	PURCHASES EX F.T.M.	SALES TO MILLS & KNITERS	TOTAL CONSUMPTION
1. Friendship Textile Mill	4,842,142	-	1,017,882	3,824,254
2. Mwanza Textiles	2,830,880	216,000	-	3,046,880
3. Sunguratex	1,114,381	-	-	1,014,381
4. Kiltex Dar/Arusha	2,608,274	85,000	-	2,693,274
5. Moshi Textiles ^{1/}	-	112,000	-	112,000
6. E. A. Kenaf Industries ^{1/}	-	18,000	-	18,000
7. Standard Knit Factory ^{1/}	-	22,600	-	22,600
8. Tanganyika Textiles ^{2/}	-	184,000	-	184,000
9. Tanzania Knitwear ^{1/}	-	95,000	-	95,000
10. Sunflag (T) Ltd ^{1/}	-	121,000	-	121,000
11. Calico Textiles ^{2/}	-	38,500	-	38,500
12. Tanzania Hosiery/Others ^{1/}	-	18,645	-	18,645
13. Export (Kenya)	-	107,143	-	-
TOTAL	11,295,677	1,017,888	1,017,888	11,295,677

^{1/} Private knitting mills.

^{2/} Private weaving mills.

TABLE 8

PRODUCTION OF WOVEN FABRICS BY MANUFACTURING UNITS, 1968 - 1973
(In million linear meters)

<u>MILLS</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Friendship Textile Mill	4.7	12.3	15.7	21.0	21.4	23.5
Mwanza Textile Mill	-	7.7	12.3	16.5	18.2	20.0
Kiltex (Dar)	11.2	13.3	12.0	12.6	13.4	10.8
Kiltex (Aru)	5.0	5.5	5.9	4.3	5.3	4.4
Sunguratex	8.9	10.6	10.5	8.4	8.3	9.1
Tanganyika Textiles ^{1/}	2.9	2.9	2.9	2.6	2.5	2.5
Calico Textile Mill ^{1/}	0.8	0.9	1.0	0.9	1.1	1.4
TOTAL	33.5	53.2	60.3	66.3	70.2	71.7

^{1/} private weaving mills

TABLE 9CONVERTING CAPACITY (PER MILL)

(In million linear meters)

	<u>1973</u>		<u>1980</u>	
	<u>PRINTING</u>	<u>DYEING</u>	<u>PRINTING</u>	<u>DYEING</u>
KILTEX	12	5.5	12.0	9.5
SUNGURATEX	10.5	3.7	17.5	3.7
FRIENDSHIP	8.5	10.0	12.5	10.0
MWANZA	19.0	7.5	42.5	10.0
	<u>49.0</u>	<u>26.7</u>	<u>84.5</u>	<u>33.2</u>

TABLE 10

CONVERTING CAPACITY AND PRODUCTION (BY FUNCTION)

(In million linear meters)

	<u>1973</u>		<u>1980</u>	
	<u>CAPACITY</u>	<u>PRODUCTION</u>	<u>CAPACITY</u>	<u>PRODUCTION</u>
Printing	49	38 ^{1/}	84	63
Piece-Dyeing	27	20	33	34
Yarn-Dyeing	4	4 ^{2/}	6	5
Grey & Bleaching	—	12	—	20
	<u>80</u>	<u>74</u>	<u>123</u>	<u>122</u>

1/ Including 2.3 million meters of imported grey.

2/ Two small private mills

TABLE 11

COTTON CROP
In thousands of bales^{1/}

<u>Year</u>	<u>Total</u>	<u>Used by Domestic Industry</u>	<u>Exported</u>
1958	169		168
1959	203		195
1960	189		187
1961	168		171
1962	214		200
1963	263		259
1964	293		295
1965	369		363
1966	936	13	423
1967	N.A.	N.A.	N.A.
1968	283	30	253
1969	386	44	342
1970	420	53	349
1971	363	58	226
1972	423	60	367
1973	430	62	368
1974 ^{2/}	400	63	337

^{1/} 181 kg. per bale

^{2/} Estimated

TABLE 12

PRICES OF SELECTED COTTON GRADES
(October, 1974)

<u>GRADE</u>	<u>STAPLE LENGTH</u>	<u>CIF</u> ^{1/}	<u>FOB</u> ^{2/}
Mwanza AR No. 1	1 1/16	54.50	52.0
Memphis SM	1 1/16	54.40	
California DPL	1 1/16	51.70	
Texas Middling	1	49.65	
Orlean Texas SLM	15/16	47.15	36.0
Punjab AC 134	15/16	47.00	42.0

^{1/} North European Port in US cents per lb.

^{2/} Country of origin

TABLE 13

COMPARISON OF AVERAGE LABOR COSTS PER HOUR AND PER UNIT OF
PRODUCTION IN SPINNING AND WEAVING, TANZANIA AND U.S.A.,
1969 and 1974

	<u>1969</u>		<u>1974</u>	
	<u>TANZANIA</u>	<u>U.S.A.</u>	<u>TANZANIA</u>	<u>U.S.A.</u>
Average Wage/Hour in US ¢ including fringe benefits	33.3	310.0	41.4	424.0
<u>SPINNING</u>				
Kgs. of 20 cc. produced per man hour	2.7	17.9	2.3	20.1
Labor cost per kg. in US ¢	12.3	17.3	17.9	21.0
<u>WEAVING</u>				
Thousand meters of Weft inserted per man- hour	19.0	156.0	13.9	175.0
Labor cost per thousand meters of Weft inserted in US ¢	1.8	2.0	2.9	2.4

1/ Based on 1836 picks per meter and average width of fabric 1.11 m.

TABLE 14TRADING ACTIVITIES OF NATEX

(In Tsh million)

<u>YEAR</u>	<u>SALES OF IMPORTED GOODS</u>	<u>DOMESTIC GOODS</u>	<u>SALES OF IMPORTED HESSIAN-JUTE</u>	<u>TOTAL SALES</u>	<u>EXPORT SALES</u> ^{2/}
1971	71	105 ^{1/}	-	176	37
1972	103	152 ^{1/}	-	271	22
1973	185	360	15	560	10
1974	329	470	15	814	32

1/ Not including Kiltex and Friendship Textile Mill

2/ Included in Total Sales.

TABLE 15

DOMESTIC PRICE STRUCTURE OF TYPICAL PRINTED FABRICS
(Tsh per meter)

<u>FABRIC^{1/}</u>	<u>EX-FACTORY COST</u>	<u>EX-FACTORY PRICE</u>	<u>EXCISE DUTY</u>	<u>SALES TAX</u>	<u>COST TO NATEX</u>	<u>NATEX WHOLESALE</u>	<u>SELLING PRICE SUB-WHOLESALE</u>	<u>RETAIL PRICE</u>
KITANGE	5.45	5.20	0.35	1.45	7.00	7.15	7.55	8.30
KHANGA	4.44	5.84	0.35	1.31	7.50	10.10	10.60	11.67

1/ Mwanza Textiles Limited

TABLE 16IMPORTS OF FABRICS AND TEXTILES BY COUNTRY OF ORIGIN

(As a percentage of total)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u> ^{1/}
China	25.0	43.0	28.5	51.6	40.0
Japan	32.0	21.0	18.8	N.A.	
Kenya	2.6	2.6	25.1	N.A.	
Hongkong	6.5	11.0	10.5	N.A.	
India	7.7	3.0	N.A.	N.A.	
Others	<u>26.2</u>	<u>29.3</u>	<u>17.1</u>	<u>48.4</u>	<u>60.0</u>
Total	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

^{1/} Estimated

TABLE 17

MILL MARGIN ^{1/} - WOVEN FABRICS
(per meter of fabric in US \$)

<u>FABRIC</u>	<u>USA</u>	<u>MWANZA TEXTILES LTD. ^{2/}</u>
Gray Sheeting	.17	.22
Dyed Linen	.28	.45
Denim	.22	.31
Khanga	.35	.50
Kitange	.38	.61
Twill	.33	.53
Supertwill	.54	.97
Poplin/Dress Prints	<u>.27</u>	<u>.46</u>
Average	.32	.50

1/ Difference between the ex-factory cost and the value of the raw material (cotton).

2/ Estimated costs in 1974

TABLE 18

INTERNATIONAL PRICE COMPARISON

(Price in US\$ per linear meter)

Ex-Mwanza Textile Mill ^{1/}	0.76
Ex-USA ^{2/}	0.64
Ex-Taiwan ^{2/}	0.62
Ex-Pakistan ^{2/}	0.55
Ex-Hongkong ^{2/}	0.63

1/ Ex-factory cost (excluding indirect taxes and subsidies)

2/ Handed price Dar es Salaam (excluding import duty and sales tax)

TABLE 19

EX-FACTORY SELLING PRICES OF WOVEN FABRICS

(In US\$ per meter)

<u>Fabric</u>	<u>Typical mill^{1/} in U.S.A.</u>	<u>Mwanza Textiles Ltd.^{2/}</u>
White sheetings	0.35	0.46
Combed twill	0.80	0.83
Khanga ^{3/}	0.47	0.81
White poplin	0.37	0.68
Deyed denim	0.41	0.50
Kitange	0.58	0.75

^{1/} January 1975 prices

^{2/} October 1974 prices, excluding Sales Tax and Excise Duty

^{3/} The average price for 35% roller prints, 35% screen prints and 30% discharge (screen) prints.

TABLE 20

PRICES OF CARDED COTTON YARN

(In US ¢ per lb.)

	<u>TANZANIA</u>	<u>WESTERN EUROPE</u>	<u>U.S.A.</u>
Mill Margin ^{1/}	46.5	36.5	40.0
Selling Price ^{2/}	117.0	103.5	105.0
CIF European Port- Duty Paid	137.0 ^{3/}		

^{1/} Difference between the ex-factory cost of producing 1 lb. of yarn, ^{2/} 20 cotton count, and the value of the raw material (cotton).

^{2/} September 1974 in the country of origin (ex-factory)

^{3/} Freight 11 US cents, MFN duty 7%.

TABLE 21

IMPORT DUTIES FOR TEXTILE FABRICS ^{1/}

	<u>A</u>	<u>B</u>
	<u>Shillings per Sq. M.</u>	<u>% Ad Valorem</u>
Gray and Bleached	2.50	45
Drills and Twills	3.80	45
Prints		30
Others	3.00	45

^{1/} The duty is either ad valorem or specific, whichever is the greater

TABLE 22

AVERAGE WAGES IN TEXTILE INDUSTRIES OF SELECTED
COUNTRIES, 1974

(In US\$ per hour including fringe benefits)

Tanzania	0.41
Taiwan	0.23
South Korea	0.11
Colombia	0.25
Pakistan	0.24
USA	4.24