



**ISSUES AND PERSPECTIVES IN TANZANIAN
INDUSTRIAL DEVELOPMENT--WITH
SPECIAL REFERENCE TO THE ROLE OF SADCC**

Kwan S. Kim

Working Paper #87 - December 1986

Kwan S. Kim is Associate Professor of Economics and faculty fellow of the Kellogg Institute at the University of Notre Dame. He has served as an economic consultant for governments of developing countries and for international agencies. He has published extensively in the areas of trade and development, and planning and industrialization, with a special interest in East Africa, East Asia and, recently, Mexico. He is editor of Papers on the Political Economy of Tanzania and Debt and Development in Latin America. His recent writings include Política industrial y desarrollo en Corea del Sur (Mexico City: NAFINSA and UNIDO, 1985).

An earlier version of this paper was presented at the conference on "Tanzania after Nyerere," organized by the School of Oriental and African Studies, London University, June 26-27, 1986. The author wishes to acknowledge the valuable comments of Professors Walter Elkan, Ian Livingstone and Peter Walshe. Some of the data and information were collected while the author was on a recent USAID mission in Tanzania, and he wishes to thank S. Tareq and P. Santoso for assisting in research and Dr. Chandra Hardy of the World Bank for providing relevant materials. The views expressed in the paper are solely those of the author.

ABSTRACT

This paper is concerned with the evaluation of Tanzania's industrialization strategies since 1967. After a brief review of the origins and evolution of past industrial strategies, it explores their implications for the emerging patterns of industrial development, examining in particular the structural characteristics and the nature of contradictions of Tanzanian industries. The focus of the paper is to trace causes for the industry's inadequate performance and to critically reevaluate past and current industrial policies, at the same time suggesting future options for Tanzania. In this context, the paper identifies the areas of potential contribution the Southern African regional economic cooperation scheme (SADCC) could make for Tanzanian industrial development. Other contextual issues discussed include roles of public vs. private enterprises and of small-scale vs. large-scale firms; choice of technologies; and human and physical infrastructural developments. Although the paper focuses on the longer-term perspectives, the analysis also deals with the short-term adjustment problems in coping with the current debt crisis.

RESUMEN

Este ensayo examina las estrategias de industrialización en Tanzania desde 1967. Después de un breve repaso sobre los orígenes y la evolución de las estrategias industriales del pasado, explora sus implicaciones para los padrones emergentes del desarrollo industrial, examinando en particular la estructura característica y la naturaleza de la contradicción de las industrias en Tanzania. Se averigua las causas del desempeño inadecuado de la industria y se hace una revaluación crítica de la política industrial no solo del presente sino también del pasado, y a la vez sugiere diferentes opciones para el futuro de Tanzania. En este contexto, el trabajo identifica los aportes potenciales de la cooperación económica regional Sur Africana (SADCC) para el desarrollo industrial de Tanzania. También se discute el papel de la empresa pública versus la privada y de las firmas de pequeña escala versus las de grande escala; las opciones tecnológicas; y la infraestructura humana y física. Aunque el ensayo focaliza las perspectivas a largo plazo, también trata problemas de ajuste de corto plazo para enfrentar la presente deuda externa.

I. INTRODUCTION

Since the late 1960s Tanzania has been experiencing a declining trend in almost every economic indicator. The current economic crisis started with the second oil shock in the late 1970s. The crisis has worsened since then; according to the World Bank's estimate, per capita GDP fell at an average rate of 2.3 percent per year between 1980 and 1984 with the largest decline registered in manufacturing. The deterioration in the terms of trade, decline in exports, and a shortfall in external aid have together led to a drastic reduction in foreign exchange revenue. The resulting cutback in essential imports, which currently amount to about a half of what they were in 1975, has severely hit industry.¹ As a result, the share of manufacturing in GDP is now less than 5 percent, having fallen from 13 percent at its peak. The formal manufacturing sector now only employs about 6 percent of the labor force.

Although the industrial sector is still small in the economy, its development is an ultimate, social goal for Tanzania; it constitutes an integral part of the country's long-term strategy toward socialism and self-reliance.² For any country, of course, industry would be considered important because of its high economic returns, greater production and employment linkages, and productivity improvements through technological adaptation. In the case of Tanzania it is particularly important, because of the aspiration for industrialization in the context of its socialist development strategy, to disengage itself from "international capitalism" and to gain economic independence--a strategy to restructure the primary commodity-based economy that mainly served as markets for industrial products of the colonial powers.

This paper presents an evaluation of Tanzanian industrialization strategies. Starting with a brief description of the origins and evolution of industrial development strategies, the discussions turn to a review of the current situation in attempts to identify

constraints on development as well as possibilities of future development. Particular issues focused on for analysis include foreign investment, roles of large- and small-scale enterprises, Tanzanian participation in SADCC, and human and physical infrastructure developments. The report concludes with a summary of the findings and charts out the future direction in Tanzania's industrial development. Although the focus of the paper is on the longer-term perspectives, policy suggestions also deal with the more short-term adjustment issues with which Tanzania is currently faced.

2. INDUSTRIAL STRATEGIES FROM A HISTORICAL PERSPECTIVE

At independence in 1961, Tanzania had a very low level of industrialization and was the least industrialized of the three East African Common Market partners. The industrial sector accounted for only 3.5 percent of the total GDP, employing a mere 9 percent of the total employed labor force. Its development strategy placed emphasis on agricultural development. Industrial production was primarily oriented towards agro-processing and light manufacturing without internal linkages to domestic raw materials.

Tanzania's first, comprehensive industrialization effort began with the First Five Year Plan in 1964. While continuing with an emphasis on the agricultural sector, the Plan called for an ambitious industrialization program that was to rely on private foreign and domestic investment for expansion of local import substitution industries. Incentive schemes to induce investments included tax holidays, accelerated depreciations, tax rebates, guarantees for repatriation of capital, and tariff protection. To overcome limited domestic markets, the Tanzanian government sought in vain to conclude agreements with the East African neighbouring countries for industrial licensing under which the regional market of East Africa could be reserved for some Tanzanian industries having comparative advantages over the other partner countries.

With the adoption of the Arusha Declaration in 1967, the Government set a new course in industrialization strategy consistent with Tanzanian socialism and self-reliance. The Declaration stipulated two principles that must be adopted in the future industrial plan: (1) The future strategy should not be significantly dependent on foreign investment; and (2) private ownership of industry must gradually be substituted by state ownership in the form of parastatal corporations. The Arusha Declaration did not stipulate any action plans. It was in the Second Five Year Plan which began in 1969 that the strategy was spelled out in detail. While calling for continuous process of transferring the means of production to the state, the plan prescribed a restructuring of industry, placing priorities on the production of simple import-substitution manufactures, intermediate and capital goods, and agro-industry based products for export. At the same time, emphasis was placed on the promotion of labor-intensive, small-scale firms and the decentralization of industry, where this was considered economically appropriate.

The progress in industrial restructuring in subsequent years was very slow, however. In 1974, the government laid down for the Third Five Year Plan more drastic measures for structural changes in the direction of self-reliance. Efforts for industrialization would be aimed at the processing of agricultural products and import substitution of "basic industries", those that would promote Tanzania's capacity to be "self-reliant" in industrial production as well as those that would fulfill the basic needs of human life for the majority of Tanzanians. For the latter category, the industries would include those producing such necessities as food, shelter and clothing. "Self-reliance" in the context of industrial restructuring was to be interpreted as an economic independence. Tanzanian industry depends heavily on intermediate and capital goods imports. The industries producing these goods were considered not only as the cornerstone of the country's industrial structure upon which other branches of industry could be developed, but also as exerting important linkage effects in generating

economy-wide employment. The strategy thus sought development of this branch of industry through import substitution.

Beginning in the late 1970s, however, Tanzania began to be affected by a series of economic malaises of external origins: First, the war with Uganda exhausted Tanzanian exchange reserve by \$600 million. This was immediately followed by the second global oil crisis which raised the price of oil by as much as 25 to 30 percent. The world price of coffee, which is Tanzania's main export product, declined, on the other hand, by another ten percent.³ Tanzania soon had to put on hold further implementation of its industrialization strategy, as the government sought adjustment by cutting imports and per capita expenditure by 50 percent. There were virtually no expansionary capital budget increases, and even recurrent budgets had to be drastically reduced. With the rapid increase in external debt and arrears, and largely in response to increased pressures from the I.M.F., the government decided to reverse the earlier strategy of overprotecting industry, and instituted new measures to support agriculture by increasing agricultural producer prices by 30-35 percent in 1983/84, at the same time giving the economy a more export-oriented structure. Export incentives included devaluations of the shilling, the scheme for export retention and, most importantly, that for "own funds" imports. Under the export retention, exporters are now allowed to retain a share of export revenue for the importation of essential inputs, and under the new import scheme, the government legalized imports that do not require foreign exchange from the central bank.⁴

These policy reforms, which clearly fall short of a comprehensive, internally consistent policy package, do not seem so far to have had much impact on manufacturing production. The economic crisis that began in 1979 continues well into the mid-1980s with little evidence of an early recovery, as Tanzania's external debt and arrears have continued to grow. As Professor Green fittingly remarked,⁵ "What appears possible at

present is reform designed to prevent deterioration or to win limited gains, not total restructuring of the system, as the previous strategies intended to do."

In the next section, we start with Tanzania's basic strategies for industrial restructuring, turning to their implications for development in subsequent sections.

3. THE BASIC DEVELOPMENT STRATEGY

The Basic Industrialization Strategy (BIS), which was adopted as the fundamental policy framework for restructuring socialist Tanzania's industry, accords priority to the development of industries supplying such important producer goods as steel, cement and chemicals, as well as consumer goods and services considered essential to satisfy basic human needs (food, housing, transport, health, education, etc). Emphasis has also been placed at the policy level on production techniques and products which use local resources including labor.

The BIS aims at attaining some "minimum economic scale" of production in the setup of "basic industries."⁶ But it would be misleading to associate the BIS exclusively with large-scale industrial development. Since many types of basic needs goods can be produced economically to serve the local market using local resources under a small-scale production method, in principle the development of small-scale industries should be an important feature of the BIS.⁷

According to the Ministry of Industries, the future industrial structure would consist of three categories--national, district and village industries. National industries include most large-scale activities⁸ catering to the national land and, in some instances, to the export market. Most important national industries are managed under the control of government holding companies (the parastatals).

District industries would comprise mostly medium and small-scale activities concentrated in district centers producing for the regional market. Essentially, district level firms are conceived to be publicly-owned under the jurisdiction of the District Development Corporation (DDC). The specific role of district industries has not been discussed in detail. The idea seems to be based on the recognition of the importance of saving on transport cost for a number of simple consumer goods through a decentralization of industrial activities. The village-level small-scale enterprises are seen to be important for producing simple basic goods for village consumption. Currently the Small-Scale Industry Development Organization (SIDO) is mainly responsible for assistance in establishing viable village enterprises.

Despite the emphasis of Tanzania's program on village-level development, in the past priority had been given to the development of manufacturing projects on a fairly large scale. The development of small-scale industries, in comparison with the emphasis placed on national industries, has not been given as much attention as it deserves. Only recently, with the formulation of the Small Industry Five Year Plan (1978/79-1982/83) in which targets for output, investment and training in small-scale activity were for the first time worked out, the small industry sector appears to have been given a more important role in government planning.

4. DEVELOPMENTAL TRENDS

Medium and Large-Scale Industries

Performance

Between the time of independence in 1963 and the economic crisis of 1974/75 the manufacturing sector⁹ had grown at an average annual rate of 7.8 percent.¹⁰ The share of manufacturing in GDP increased from 6.6 percent in 1964 to 11.5 percent in

1973. During 1976/78, however, the average annual growth rate in manufacturing dropped to 5.6 percent, compared with the targeted growth rate in the Third Five Year Plan of 9.3 percent. According to a recent estimate made by the World Bank, between 1978 and 1984 manufacturing value added continued to decline in real terms by 16 percent a year. In total, between 1979 and 1984 manufacturing output declined by as much as 63 percent. The declining rate of industrial output growth also resulted in a declining share of industrial output in GDP, which fell from a peak level of 10.0 percent in 1976, to 9.3 percent in 1978, and more recently, to 4.7 percent in 1984.

It is significant to note that fixed assets and employment of the parastatal sector currently account for about 70 percent, respectively, of those in medium and large-scale manufacturing. The public sector, however, produces only one-half of total output of medium and large-scale manufacturing industry. The decline in large-scale manufacturing can, to a large extent, be attributed to poor performance of the parastatal sector.

According to a Ministry of Development Planning survey,¹¹ between the first halves of 1978 and 1979 production in physical volume in ten out of nineteen industries actually declined. Among the important sectors that showed a net decline were fertilizer, rolled steel, beer and cigarettes (the latter constitute a major source of government revenues), cement, pyrethrum extract, and consumer goods (shoes, radios, etc.). The performance would appear much worse if estimates for the second halves of the two years of 1978 and 1979 were to be compared. This is because the effects of the 1978/1979 Uganda-Tanzania war began to be felt on the economy starting in the second half of 1979. The effects would be most severe for those industries that depended heavily on imported raw materials and spares.

The declining trend in growth rate of output has been coupled with declining factor productivity.¹² Industrial growth has been declining despite high levels of investment in recent years. The emphasis placed on investment in industry is

demonstrated by the fact that its share in the total rose steadily from 17 percent in 1974 to 27 percent during 1977/78 (Table 1). The slow growth in output, in turn, implies a trend of an increasing incremental capital-output ratio. According to a World Bank estimate the capital-output increased about 50 percent between 1966 and 1974.¹³ Increases in the capital output ratio reflected the declining rates of return on investment. The World Bank study further pointed out that total factor productivity (value added per unit of capital and labor inputs) in industry declined over the period 1966/67-1972/73. While the increase in capital stock was more than two and half times that of labor input, labor productivity remained virtually unchanged. Employment increased at the same rate as output in the manufacturing sector, despite the fact that the capital stock increased at a much faster rate. Thus additional employment and output were possible only at greater investment costs.

Heavy investments in the industrial sector were made in the context of significant capacity underutilization.¹⁴ In manufacturing the problem of the idle capacity was further aggravated by recurrent balance-of-payment difficulties. As raw materials and spare parts imports fell, capacity underutilization became more pronounced, in particular in the food-processing industries. The output level for 1979/80 as a percentage of installed capacity output ranged from 60 percent for cashew-nuts processing to 10 percent for oil-seeds processing. Unlike the case of manufacturing, underutilization in agro-processing industries was mainly caused by declining levels of agricultural output used as inputs by these industries.

Reasons for Poor Performance

The factors which contributed to the declining trends in the industrial sector would of course vary from one branch of industry to another. One fact, however, seems to cut across different branches of industry; that is, the declining rates of growth were not due to the decrease in investment. Among the reasons given by the Tanzanian

Government for the decline were shortages of raw materials and spare parts, frequent interruptions in the electricity and water supply, managerial weakness, lack of trained manpower, rising cost of inputs, particularly of oil, and transportation bottlenecks. In particular, the cut back in essential imports was frequently mentioned as the most important factor contributing to industry's poor performance.

Indeed, the impact of the foreign exchange crunch can be seen from Table 1. When the availability of foreign exchange for importing industrial raw materials and spares is expressed as the ratio of the "allocated" to the "required" foreign exchange,¹⁵ the ratio was 59.4 percent for raw materials and 29.3 percent for spares in 1976. The respective ratio drastically decreased to 22.0 percent and 11.6 percent in 1979¹⁶ since large-scale, modern industries in Tanzania are more energy-intensive relative to other traditional sectors.¹⁷ The continued decline in oil imports since 1975 must be seen as having hit, in particular, such branches of industry as manufacturing, transport and construction. Imports rose by about 8 percent in real terms in 1984, reversing a steady decline since 1974. But consumer goods accounted for about a half of the increased imports, and how

TABLE 1
FOREIGN EXCHANGE "REQUIRED" AND "ALLOCATED"

Year	<u>Industrial Raw Materials</u>			<u>Machinery Spares</u>		
	Required	Allocated	(2) as % of (1)	Required	Allocated	(5) as % of (4)
	(1)	(2)	(3)	(4)	(5)	(6)
1977	2,649.6	1,574.5	59.4	362.1	106.2	29.3
1978	4,158.1	2,138.1	51.4	532.8	154.8	35.7
1979	6,092.0	1,339.3	22.0	481.4	55.7	11.6
1980 (Jan-June)	3,488.6	872.9	25.0	262.3	21.3	8.1

Source: Economic Report, *ibid.*

significantly these imports contributed to reducing input bottlenecks in industrial production was less clear.

In accounting for industry's poor performance, one must not overlook the role of the parastatal firms. While Tanzanian data on capital stock and production are not entirely reliable, there is considerable evidence that despite the resource allocation bias in favor of the parastatal sector, value added per employee was much lower than in the private sector. Poor management in parastatal firms has been one of the main causes of the decline in total factor productivity.¹⁸ This is significant in view of the fact that the parastatal system, accounting now for more than one-half of industrial production, is very important to Tanzania's future, and that substantial amounts of the government budget as well as foreign capital have been primarily directed to the parastatals, thereby ensuring less attention to private-sector firms.

In summary, while it is difficult to separately assess the full impact of different factors, the general decline in industrial productivity has been occurring since the mid-1960s, which certainly does not reflect a sudden phenomenon related to the more recent balance of payment crisis. Both the capital-output and the capital-labor ratios have been rising sharply since the mid-1960s. Such a shift toward capital-deepening in industry would appear inconsistent with the Government's Basic Industrialization Strategy whose objectives emphasize the use of appropriate technology geared to local factor endowments. To some extent, the capital-deepening process in industry may be viewed as resulting from the overvalued Tanzanian shilling as well as the undervaluation of capital goods services frequently present in a centrally planned economy.¹⁹ On the whole, industrial inefficiency resulted from the system of administrative allocation of foreign exchange on a firm by firm basis, coupled with the comprehensive price control and import-licensing schemes that inadvertently eliminated competing imports. Also, the declining trend in productivity partly reflected the problems of infrastructural deficiencies,

particularly severe in large-scale firms: There is a greater degree of dependence on skilled manpower and financial resources which tend to be in shorter supplies in a large enterprise than in a small one.

Outlook

Prospects for future sustained growth in large-scale industries hinge upon the efforts of the government to remove the various bottlenecks mentioned above. The binding constraints on the development of large-scale industry over the next few years are likely to consist of shortages of intermediate and capital goods and the bottlenecks in the transportation sector. The foreign exchange constraint also militated against the development of infrastructural facilities for ensuring adequate supplies of electricity and water to industries. The viability and expansion of these infrastructural sectors in Tanzania rely heavily on imports of essential inputs.²⁰ Hence, the solution to the problem of intermediate goods shortages lies in the ability of the economy to generate sufficient foreign exchange.²¹

The BIS emphasizes production for the domestic market through a strategy of import substitution. Given the high degree of import dependence in industrial production, however, there is little possibility that Tanzania's industrial sector will be able to contribute substantially to foreign exchange earnings under this strategy in the foreseeable future.²²

More importantly, removal of the foreign exchange constraint does not by itself ensure improved industrial performance. Among the important measures that can be taken by the government would be the institution of a new incentive system. The Ministry of Industry has recently directed the management of the parastatal to devise appropriate incentive schemes based on labor productivity. Such a move could have some positive effects on managerial efficiency and productivity. In addition, consideration must be

given to the implications of charging relatively low costs in capital use for the capital intensity in industry. The government must also deal with the restructuring of the parastatal system. The case in point is the National Development Corporation (NDC)--the largest state enterprise in Tanzania established to coordinate and regulate overall industrial activities. At present, the NDC's industrial activity portfolio is considered too large to provide an overall effective management. There is the need to streamline the NDC and other large-scale parastatals by creating more specialized corporations.

Finally, in addition to the slowdown in industrial production, another serious problem has been the rapid deterioration in the transport and distribution network: Only limited quantities of basic consumer and producer goods have been reaching remote rural areas and many localities have been left with virtually no supplies of industrial goods. At present, these bottlenecks in the forward linkages of Tanzanian industry constitute a major inhibiting factor in the development of the national industries that must rely on sizable domestic markets for expansion.

These conclusion should not be interpreted to imply that large-scale industry merits no support. Certain products require a minimum efficiency scale of production that can be met by the Tanzanian domestic market. Their production can be resuscitated through increased availability of foreign exchange or removal of bottlenecks in the transport-distribution system. Clearly, the longer-term viability of these basic industries lies in possibilities of reforms in policy measures and improving the environment to permit better utilization of existing resources.

Small-Scale Industry²³

Performance

Tanzania's small-scale, productive activities are largely concentrated in urban areas, particularly in Dar es Salaam. According to a survey undertaken by the Small Industry Development Organization (SIDO), out of the total 4,337 units in 1978, 2,095 or 48 percent of the total were in Dar es Salaam. If another 400 units in another urban areas were included, this would leave only a little over 40 percent of the small-scale units located in rural areas.

It is difficult to be definite about the economic performance of small enterprises, because little is known about their growth pattern.²⁴ However, based on the recent SIDO report, several key features of the performance can be identified:²⁵

1. The small-scale sector is at least five times as effective as its large-scale counterpart in terms of output measured per unit investment.
2. On average, the incremental capital-labor ratio is lower in rural-based small-scale enterprises than in urban, large-scale ones.²⁶
3. For every shilling's worth of goods produced in a small enterprise, foreign exchange savings through import substitution are calculated at 39 cents. A comparative estimate for large-scale industry is not available. It is doubtful, however, that it will be as high in view of the high import intensity of national industries.

Other information on choice of techniques, labor productivity, economies of scale, and the linkages with the rest of the economy is not available. However, the existing evidence generally indicates that small firms, as compared with large-scale enterprises, are more labor-intensive, more cost-effective and less foreign exchange intensive.²⁷

Constraints on Small Industry Development

The Village Cooperative Act of 1975 defines the village as the smallest legal entity that can engage in industrial enterprises. By law, individual initiatives would be illegal, but in practice this has not been strictly adhered to. Also, all non-perishable crops are currently handled by the National Milling Corporation--a monopoly parastatal in the marketing and distributing of agricultural produce. The processing of grains is confined to those for local consumption only. This implies a severely limited opportunity for villages to increase value-added in their productive activities. The existence of village-unit structure has both positive and negative implications for the viability of village-led entrepreneurship, depending on the cohesiveness of village organization and the attitudes toward cooperative venture in a particular village.

Another constraint on development is the difficulty of mobilizing financial resources internally for small-scale industries. Tanzania's financial institutions have not in general been equipped organizationally and financially to deal with rural-based, small-scale activities. Small industrial ventures have generally been left out of the lending operations of the banking sector. For example, the Tanzanian Investment Bank (TIB) which specializes in lending to industrial ventures has not in the past been able to give much assistance to small-scale industrial ventures. It has been lending to projects requiring not less than T/Sh. 100,000, which has precluded most small-scale activities. Even the Tanzanian Rural Development Bank (TRDB) which specializes in lending to rural development ventures has failed to take up the challenge. Out of the total TRDB loans disbursed so far, only 40 percent went to villages.²⁸ The main obstacles to mobilizing financial resources for small industry have been: lack of technical know-how among the banks; procedural difficulties for a small-scale industrialist to obtain loans; excessive security considerations; reluctance to engage in risk-lending; and the general shortage of lending institutions.

There is also the problem of government intervention through the administrative price-setting that often turns out to be disruptive to productive activities. Anecdotal evidence abounded on the impact of unrealistic pricing of raw materials that led to disruptions in supplies of vital inputs to many small-scale processing industries (e.g., lack of animal fat for soap factories, shortage of maize mills, etc.).

Outlook

Prospects for an enhanced role of rural-based small industry appear more promising, so long as the current foreign exchange crisis and bottlenecks in transportation continue to plague those of large-scale firm base industrialization.

The Tanzanian government appears interested in reducing the previous emphasis on large-scale industries. The recent Industrial Development Plan (1978/79-1982/83) indicated a perceptible shift in priorities toward small industry development. Its main thrust was to increase drastically the contribution of small-scale industry in the economy. The share of small industry in total industry GDP was to rise from 19 percent in FY 1977/78 to close to 50 percent by FY 1983/84.²⁹ The Plan included the establishment of:

1. industrial Estates in twenty regional centers (one for each region);
2. district and village industries;
3. handicrafts.

The regional industrial estates were envisioned to consist of essentially small-scale firms using indigenous resources to serve as the nerve centers for further industrialization of the region. Their specific role would be to link industrial activities in the region to the market and resource endowment of the region, thereby relieving the national industries of the transportation problems. The establishment of the region-based industrial centers would then be followed by developments of a series of small

enterprises and the handicrafts--mainly for export--first at the district and then at the village level.

There was some doubt, however, as to whether even the first phase of these plans could be successfully implemented within the planned period envisaged. Given the budget and managerial capacity constraints confronting SIDO, much of the success in implementing the plans would depend on the availability of external funding and technical assistance.³⁰

Another worrisome feature of the industrial estate program is its dependence on foreign exchange availability. Implementation of the estate program would have required roughly T/Shs.600 million for machinery imports and another T/Shs. 250 million for raw materials in the initial stage of development.³¹ It is unclear why these requirements were so high in view of the fact that small-scale industry generally has lower foreign exchange requirements relative to large-scale counterparts.

In summary, Tanzania's recent industrial policy appears to encourage small industry development. In this sense, the relative contribution to overall industrial output of small industry is expected to increase in the years to come. However, the outlook for significant growth even in this sector is not bright: In addition to the anticipated problems of the shortage of manpower with expertise, future development will continue to depend on the support it obtains from the government in terms of investment resources, allocation of credit and foreign exchange. Finally, it is unclear whether or not the Village Cooperative Act can on balance promote entrepreneurship at the local level.

5. INFRASTRUCTURAL DEVELOPMENT

The key factor in industrial enterprise performance is availability of human capital stock as well as physical infrastructural base. This section examines Tanzanian industry's

infrastructural base and, in particular, government policies regarding infrastructural improvements in the areas of transportation, manpower and energy.

Transportation³²

Most analyses of the Tanzanian economy cite the transport sector as a key factor in the problems currently facing Tanzania.³³ For instance, lack of roads and other transportation facilities has been a major inhibiting factor in Tanzanian agricultural production, which depends on the transport of adequate supplies of both agricultural inputs (fertilizer, farming implements etc.) and incentive goods (mainly, industrial goods). For both the agricultural and industrial sectors, this problem of transportation is now critical.

Tanzania's surface transport system mainly comprises roads (about 45,000 kilometers), two railway systems (3,570 kilometers of track), three main ocean ports, and number of minor ocean and lake ports. Of the road network, approximately 7 percent (3,000 km) is paved; 2-3 percent is engineered gravel; and the remainder is unengineered gravel or earth. Accordingly, the system is highly vulnerable to heavy rains. The average road density is among the lowest in East Africa. The rail network consists of the Tanzania Railway Corporation (TRC) and the Tanzania-Zambia Railway Authority (TAZARA). Since 1977 the TRC has operated the 2600 km of track in central and northern Tanzania that was formerly part of the East African Railways Corporation. The TAZARA line extends southwest into Zambia, and is jointly owned by Tanzania and Zambia. Comprising about 1800 km of track, it was built and financed by the People's Republic of China between 1971 and 1975, and began operations in late 1975. Of the three ports, the port at Dar es Salaam handles 85 percent of total Tanzania traffic, half of which is destined for Zambia.

Trucking is the major single source of the country's supply of transport services, accounting for about 60 percent of Tanzania's domestic cargo traffic. Until 1973 almost all road freight was carried by private companies (usually owner-operators).³⁴ At that time the government adopted a policy of substituting public transport for private which led to aggressive government expansion in public road transport, and a significant ensuing exodus of private truckers and trucks.

The overall size of the aggregate trucking fleet remained fairly constant throughout the 1970s, despite the fact that imports of transport equipment (excluding cars) have consistently accounted for over 10 percent of total merchandise imports over the course of the decade.³⁵ This could reflect very rapid depreciation and deterioration, and also withdrawal of private entrepreneurs from the trucking sector.

Performance of the transport sector as a whole has been very deficient over the course of the 1970s, and transportation is widely perceived as a major bottleneck to overall economic activity. In terms of aggregate output of the transport and communications sector, the average annual rate of growth decelerated sharply during the 1970s; whereas this sector grew at an average annual rate of about 10 percent between 1966 and 1972, the growth rate over the 1972-80 period was less than 4 percent. This deceleration in growth occurred despite substantial investments in infrastructure during the earlier period, and the completion of the TAZARA railroad in the mid-1970s.

More specific data for the railroads and trucking industry also indicate negative performance. The TRC provided an average of 1175 million ton/kilometers of service in the 1971-73 period, but only 957 in the 1976/78 period, a drop of nearly 20 percent during a relatively good period for Tanzania. The TAZARA line was designed to carry 2 million tons per year, yet in early 1979 (even before the floods) was carrying only 50,000 tons per month, or 30 percent of capacity.³⁶

Rail transport services for agricultural production declined sharply between 1971 (i.e., pre-TAZARA) and 1978, from about 400 million ton/kilometers to 210 million ton/kilometers. Declines in TRC services amounting to about 225 million ton/kilometers were only weakly counteracted by the introduction of TAZARA. This drop was mainly attributable to declining capacity and performance, rather than declines in demand for rail services.³⁷

Trucking services have similarly deteriorated rapidly in recent years, despite a fairly constant overall fleet size since 1972.³⁸ The World Bank calculation of the "availability" index (the ratio of vehicles in working order to total vehicles) suggests a figure of about 60 percent for publicly owned trucks in Tanzania, as compared with the standard figure of 80 percent for other developing countries. Truck utilization in terms of the ratio of capacity used to capacity available was only 40 percent for parastatals compared with 60 percent for private truckers.³⁹

The poor performance in the transportation sector is the result both of exogenous factors and policies. In the case of the TRC, the disruption caused by the breakup of the East African Railways Corporation was most damaging, particularly since the bulk of the human and physical capital stock that comprised the management and maintenance capacity of the system was located in Kenya. Secondly, the crises of the 1970s have diverted foreign exchange and other resources that might have contributed to better maintenance. Thirdly, until 1979 there existed a substantial degree of cross subsidization of agricultural commodity freight rates, so that production (and transport) of low-value crops was unduly encouraged. Fortunately, this cross-subsidization has been substantially reduced for the RTC and TAZARA.⁴⁰

For road transport, such factors as the breakup of the East African Community, the Uganda war, floods, etc. have also been important. However, public policies also contributed to poor performance in several respects. For instance, the decision in 1973

to adopt a policy of substituting public transport for private had the effect of substituting relatively inefficient enterprises for relatively efficient ones. Data on availability of trucks and capacity utilization of available vehicles pointed to a clearly better performance for private truckers.

Other studies have similarly pointed out the relative efficiency of private transporters. Dumont has observed the tendency for parastatal transport divisions to carry loads in only one direction. The IDA report notes that public transporters, characterized by inefficiency and unreliable provision of services, tend to employ much larger staff than do private firms.⁽⁴¹⁾ A revealing passage in the Board of Internal Trade Report remarks on the "cut-throat" competition faced by public transporters:

"While BITCO charges Shs. 300 per ton to Moshi, private transporters may bring it down to the level of 150 in order to attract more customers. Of course they can afford this because they have very low running expenses e.g., wages, rent, electricity, etc."⁴²

The decline in the absolute and relative size of the private trucking sector coincided with the public incursion into the transport sector. This has been reinforced by the overvalued exchange rate, which encouraged importation of other types of transport equipment by the public sector. Also, the foreign exchange allocation system seems to have discriminated against the private sector and in favor of public firms.⁴³

The discussion so far has pointed to the role of public policies in diminishing the supply capacity of the trucking sector. At the same time, policies have also had the effect of unduly raising demand for transport services. First, the overvalued exchange rate resulted in costs of transport services which substantially understate true costs.

Secondly, the pattern of production and processing puts undue strains on the transport system by promoting flows of goods to urban centers for processing and then back to the original locus of production for retailing. Milling is a frequently mentioned case of this. The FAO/UNDP report noted that "a considerable amount of long distance inter-regional transport is involved in hauling, for example, maize to Dar es Salaam for milling,

and hauling milled flour, rice and sembe in the reverse direction."⁴⁴ The problems is related to and aggravated by the policy of pan-territorial pricing, whereby prices of many agricultural goods and other products are not allowed to vary to reflect transport costs. This has resulted in excess production and transportation of low-value, high bulk crops. While this has been justified by the need for food self-sufficiency, Tanzania has ended up exporting appreciable quantities of maize, sorghum, millets, and cassava.

A final important factor has been the inadequate level of road maintenance. This has resulted from a weak planning and administrative capacity; budgetary constraints and a shift in the pattern of investment away from infrastructure and towards directly productive activity; and shortages of foreign exchange and spare parts.

Although some progress was made on infrastructural rehabilitation of the transport sector in 1984-85,⁴⁵ performance in this sector, particularly in trucking, for added reasons that have mainly to do with public policies, is likely to continue to be deficient as long as the current financial crunch lasts. Recently, there was some discussion within government circles about a plan to set producer prices by region (rather than pan-territorial producer prices). Such a reform should aim at bringing about prices that adequately reflect transportation costs. There is a need to move toward more decentralized patterns of production that would alleviate burdens that the transport system places on other sectors of the economy.

In the interim period, however, until sufficient resources can be channeled directly to support increased capacity in the transportation sector, assistance activities which aim at alleviating burdens on the transport sector itself are likely to be more effective. For instance, activities that promote a more decentralized pattern of production such as local small-scale industry would reduce demand for "imports" from other parts of the country. Another example is better storage facilities, so that delays in transport would entail less spoilage.

Manpower

As may be the case with other developing countries, the human resource constraints on development in Tanzania take the form of a general shortage in skilled manpower. The manpower shortage has resulted from the inability of the existing formal and informal training facilities in Tanzania to meet the increasing demand of a developing economy. Only, the extent of the shortage seems relatively more severe in Tanzania, since the complex network of its command economy structure places an increasingly heavier demand on the role to be played by the administrators, managers, extension workers and technicians.

Since independence, the Tanzanian government has been concerned with the removal of manpower bottlenecks to development. The policy goal of the government has been self-sufficiency in manpower at all skill levels. This objective has two elements: The first is localization of manpower in the key positions that have been occupied by expatriates. The Ministry of Manpower Development elaborated on this point: "Should the non-citizens still employed decide to quit en masse, Tanzania will have accumulated enough local talent to do without them without significant harm to the economy."⁴⁶ The second element is provision of an adequate supply of manpower to meet the requirements of the developing economy. The strategy for achieving the stated goal has been provision of a universal primary education and selective secondary and post-secondary education to the extent justified by manpower requirements of the economy.⁴⁷

Tanzania's educational policy aims at provision of education at least at the basic levels for the masses rather than for the elite, and at relating the training programs to the needs of the economy by stressing the curricula of practical skills and natural sciences.

The question to ask now would be how such policy has in practice worked out in attaining self-sufficiency in manpower.

Localization of skilled manpower since Independence has been proceeding at an impressive speed. A government survey⁴⁸ shows that the nationals serving in high and middle level posts, expressed as a percentage to the total established posts, increased from 26 percent in 1961 to 60 percent in 1974. More recent figures are not available. However, given steadily-rising trends in the rate of localization, it can be reasonably assumed that manpower localization, at least in a quantitative measure, has been achieved at a satisfactory level. These quantitative estimates of course do not address the question of quality. In some sectors of the economy, the speed of localization had been too rapid, hereby adversely affecting their productivity and performance.

In contrast to the achievements in localization, there seems little evidence to suggest that the gap between the supply of manpower and its demand by the economy has been narrowing. This is mainly due to enlarged demands placed on skilled manpower with expansion and diversification of the economy. Also, in the case of Tanzania the expanded manpower requirements partly reflected the consequences of increased public-sector involvements in the economy and an enlarged government bureaucracy.

The government's latest estimates of projected manpower shortfalls by sectors covered the period up to 1980 (Table 3). Manpower requirements were estimated by multiplying the target rate of growth for each sector by the historical trend in the ratio of annual rate of increase in employment to that in output. The table shows estimates of requirements for two high-skill categories: Category A includes jobs requiring a university degree, and Category B covering jobs normally requiring one to three years of post-secondary training. The shortfalls projected in these high-skill categories were very severe. These projections were in quantitative terms, and disaggregate skill components were not taken into account.

The problem of quality for the existing manpower is a serious one. Although no systematic analysis has been carried out on this issue, there has been evidence to indicate that inadequate training of personnel has greatly contributed to the poor performance of the parastatal sector. For instance, in estimating training needs of NMC's employees, a report on its operations⁴⁹ pointed out that as of 1979 University-diploma qualified personnel within NMC accounted for only 1.5 percent of total employees with an additional 16 percent of personnel with "other training." This left 81.7 percent--an extremely high percentage--without any specific training geared to their jobs. In another instance, the Tanzanian Audit Corporation reported that in 1978, 20 to 30 percent of the parastatals could not be audited, because their book-keeping method was "so erratic and unconventional."

The work efficiency problem is probably not confined only to the middle and high level categories. There is abundant anecdotal evidence of low-quality performance at the low level as well. An extension worker trained at a national institution is generally viewed as inadequate to cope with a specific local situation. There have been many reported incidents where village cooperative personnel were incapable of carrying out simple work that could have been done by subordinates. In many situations, what should have been recommended is not a larger staff but the upgrading of the existing employees.

Tables 2 and 3 illustrate how the severity of shortfall differs between various skill categories and occupations. The shortage is considered relatively more severe in Category B as compared with Category A, and in engineering, teaching, science, management and administration, and medicine as opposed to agriculture. Category B, the sub-professional occupations, normally require a pre-service training course of two years or so. There has been a bigger deficit in this area, particularly in industry, relative to others because of a general neglect of establishing institutions to provide this levels of training.⁵⁰

TABLE 2
MANPOWER REQUIREMENTS AND EXPECTED OUTPUT FROM THE LOCAL
INSTITUTIONS IN THE THIRD FIVE YEAR PLAN - 1980/81

Field	Total Requirements in the 3rd	Total Output From the Institutions 1975/80/81	Difference (Increase or Short-fall)	Percentage of the Output Requirements 1980/81
Medicine	793	346	- 447	43
Administration & Management	2,523	1,170	-1,353	46
Engineering	1,461	438	-1,043	79
Teaching-Arts	591	517	-74	87
Science	1,140	603	-537	52
Agriculture	166	240	-74+	144
Law	610	372	-238	60
Others	972	335	-637	24
Total	8,276	4,021	-4,113	49

Source: Ministry of Manpower Development.

TABLE 3
PROJECTED MANPOWER SHORFALL BY 1980

	Category A		Category B
	Science	Arts	
Total requirement	4,925	4,288	22,666
Projected Supply	2,790	2,416	16,399
Shortfall	-2,135	-1,872	-6,267
Currently Unfilled Vacancies	1,875	1,790	6,055
Vacancies as Percentage of Shortfall	88	96	97

Source: ILO Report Towards Self-Reliance, 1979

Energy

Commercial and industrial energy⁵¹ use in Tanzania altogether accounts for less than ten percent of total energy use. While the pattern of fluctuations in annual per capita consumption of nontraditional forms of energy has been random,⁵² per capita consumption of electric power has been steadily rising. Thus, a process of substitution of hydro power for other forms of commercial energy (mainly oil) has been taking place, albeit at a slow rate. Domestic production of commercial energy as a percentage of total consumption was 5.8 percent in 1976 and rose slightly to 6.0 percent by 1980.⁵³

Tanzania's per-capita consumption of commercial energy is low in comparison, for example, with the consumption of 143-174 c.e.k. for Kenya. A good deal of these differences can be attributed to the lower level of industrialization in Tanzania. It is important to note that imported crude oil comprises nearly 95 percent of the total commercial energy consumption. Commercial energy is used primarily in the transport and modern industrial sectors, which according to a World Bank estimate⁵⁴ used as much as 57 percent of the total during the mid-1970s.

The demand for commercial energy in Tanzania not only tends to be fairly price-inelastic, but is also closely related to the level of industrial output, and specifically to the growth of the modern sectors of the economy. The internal combustion engine represents the most prevalent mode of transport in the transportation industry, and many large-scale industrial processes in Tanzania are still fuel-specific; most plants are constructed to burn fuel oil.

To date, Tanzania's potential in commercial energy supply has not been well investigated. Natural gas has been discovered in trial bores near Kilwa. The find proved to be in sufficient quantities to be of interest to the Tanzanian government but the resource has not been exploited because of lack of funds. Prospects for discovering any

oil reserves are still uncertain. Financial and economic constraints have so far inhibited a full-scale involvement in searching for oil. Oil will thus continue to be imported for the foreseeable future. Coal deposits mainly in the Southwest are estimated at 1.3 billions tons. Currently, only a few thousand tons are produced annually despite large potentials for increased production.

The country possesses good hydroelectric possibilities with the potential output estimated at 1,400 MW, but the present output level is hardly adequate to meet domestic needs. Two important multi-purpose hydro power plants were recently planned: Stieger's Gorge on the Rufiji River with a possible installed capacity of 800 MW would be the largest one, followed by Rosomo falls on the Kagera River. Both of these projects were designed to contribute to agricultural productivity through irrigation and flood control. Although the potential for hydro power is still good, any progress in this direction for years to come is going to be very slow in view of the prevailing financial and human resources constraints. The government has also explored, with some success, possibilities of other energy sources including geothermal resources.

The sharp rise in world oil prices since 1973 inflicted severe damage on the Tanzanian economy. Oil imports as a percentage of Tanzania's export earnings rose steadily from 10.6 percent in 1972 to 22 percent in 1976, to 40 percent in 1979, and to 45 percent in 1980.⁵⁵ Drastic increases in payments for oil led to the reduction in essential imports to vital sectors of the economy, including transport, manufacturing, and construction industries. Directly, the oil crisis also affected modern, large-scale industries that depended on imported oil.

To conclude, from a short to medium perspective, sustained industrial growth would be feasible only with expansion of exports to allow continued importation of oil and other essential inputs. From a longer-term perspective Tanzania must develop a strategy to reduce dependency on oil; it needs to develop a technological capacity to gradually

substitute alternative domestically-produced commercial energy for imported oil. In the transport sector there is some possibility for an extensive utilization of the railway system. The railroad network in Tanzania is still sparse and inadequate and faced with various maintenance and operational problems. The other major user of oil is industry. Hydro power using non-oil resources (coal) may be a feasible alternative to imported oil. Again, the hydro possibility is likely to be beset with many problems, including a long gestation period for the project and large capital costs. World Bank studies estimated that hydro and nuclear plants would require 50 to 100 percent more capital investment; and coal fuel plants 30 to 40 percent more than would the comparable oil-fueled plants.⁵⁶

6. REGIONAL INDUSTRIALIZATION

The Southern Africa Development Cooperation Council (SADCC) represents the most recent and perhaps the most interesting form of economic cooperation in Africa. The movement began with the 1979 Arusha Conference where a declaration of intent was approved by the five front-line states--Zambia, Botswana, Tanzania, Angola and Mozambique.⁵⁷ The organization was formally launched in April 1980 in Lusaka by these five countries along with Malawi, Lesotho, Swaziland and Zimbabwe.

The Lusaka conference identified four development objectives which the organization will seek to pursue:⁵⁸

1. The reduction of economic dependence, particularly on the Republic of South Africa.
2. The forging of links to create a genuine and equitable regional integration.
3. The mobilization of resources to promote the implementation of national, interstate and regional policies.
4. Concerted action to secure international cooperation within the framework of the common strategy for economic liberation.

Membership in SADCC could prove to be beneficial for the industrial development of Tanzania. The limited size of Tanzania's domestic market has been one obstacle to successful industrialization. The smallness of the market inhibits the

development of industries requiring large minimum scale of production, discourages investment, and prevents harnessing of economies of scale. It is here that participation in SADCC could be of crucial significance. "The prohibitive costs of optimum processing and manufacturing plants...could be justified within a framework of regional co-ordination of production and trade but not on a national market basis."⁵⁹ For Tanzania, increased intra-regional trade can widen the market permitting economies of scale, encourage specialization that would result in higher levels of efficiency and expansion in economically feasible new lines of production.

SADCC has already identified several industrial projects to which Tanzania can make a contribution. Some of these involve expansion and/or rehabilitation of already existing units while others involve setting up new lines of production. Indeed, there is an urgent need for rehabilitating a large number of the existing manufacturing units in Tanzania even before any consideration for participating in the SADCC's regional industrialization scheme. As pointed out by a SADCC document,⁶⁰ the Tanzanian government's rehabilitation program, which emphasizes improvements of physical equipment in large parastatal enterprises, could perpetuate the existing inefficiencies rather than remedy them. This is because reasons for inadequate enterprise performance in Tanzania lie not only in the lack of imported inputs and components but, more importantly, in inadequate technological capabilities and poor management. Thus, unless the rehabilitated plants can be ensured for proper maintenance and operation by upgrading labor skill, technology and managerial capacity, the physical rehabilitation program would only extend the life of inefficient enterprises.

Among possibilities of new production lines is an ammonia/urea plant for producing fertilizer. The importance attached to food security and the low level of fertilizer use makes this a very important industry for the region, while the availability of natural gas makes Tanzania an ideal location. A plant for tractor assembly ultimately leading to the

production of tractors is also under consideration. In the textile sector, revitalization of existing polyester blend integrated weaving plants and a new polyester/texturizer polyester plant have been proposed. Tanzania has also been singled out as a possible location for the production of textile processing chemicals. A 60,000 tons capacity southern paper mill and development of salt works have also been recommended for implementation.

At present, SADCC's industrial strategy is aimed at meeting the basic needs of the people of the area, and the projects identified reflect that objective. Other possibilities will open up when Tanzanian contribution could be significant. For example, iron ore deposits could be used to set up a steel mill which cannot be justified on the basis of domestic markets alone. Tire and rubber products could be another area. Given the importance attached by SADCC to the development of a transportation network, these industries could be of strategic importance to both the regional and Tanzanian economies. At this juncture of progress in regional coordination, more research is called for to better understand the feasibility aspects of region-based industrialization for Tanzania.

Clearly, the integration scheme in SADCC departs from the earlier Eastern African Community, which vividly illustrated the difficulty for a free-market oriented integration scheme in developing countries.⁶¹ The SADCC scheme recognizes the importance of a region-wide framework for a cooperative industrial development. A clear argument for supporting this sort of integrative planning approach would be that for many categories of industries, economies of scale and greater efficiency can be attained only through coordinated planning for industrial development at a regional level. Of course, there are many constraints on regional integration as well as many details that need to be worked out, in particular to ensure an equitable distribution of benefits to all member states from an integrated market.⁶² Resource endowments are generally deficient in the region,

and unbalanced between member countries. There is also the general lack of complementarities between national production structures. Moreover, the region-wide transportation network was developed mainly in the north-south linkages connecting the peripheral black African states to the South African economy. Thus, the expansion and integration of the transport network will be of utmost importance for the establishment of an interdependent regional production and market structure. The SADCC scheme, nevertheless, offers a potentially viable alternative for the future development of Tanzanian industry.

7. CONCLUSION: OPTIONS AND PROSPECTS

The main findings of this paper can be summarized as follows: The crux of economic weakness in Tanzanian industry has been related to the declining or stagnant physical production levels and falling factor productivity. The "basic industrialization" strategy has resulted in relatively large-scale, capital-intensive processes of production, and has unintendedly made the economy more import-dependent. Despite public statements in support of small-scale, decentralized industrialization, the bulk of investments went to national industries which have not stimulated significant increases in employment while operating at low levels of capacity utilization.

Among other factors contributing to the real-sector decline would be inadequate productive infrastructure, inadequate transportation and communication networks, and pervasive shortages in skilled manpower and breakdowns in management. The fundamental constraint facing Tanzanian development is the very low levels of technological skills and managerial capacity. This problem is of course magnified by the fact that Tanzania is primarily a system of managed, planned economy which places large demands on managerial skills and administrative efficiency. In addition, Tanzanian

domestic markets are essentially too limited to permit an efficient scale of production for heavy industries. In the absence of an expanded regional market arrangement--feasible perhaps through SADCC--the key-sector industrialization strategy perhaps is a premature economic miscalculation.

Certainly, the economic ills of Tanzania were not all related to its economic policies. In particular, Tanzania's post-1978 problems--apart from the \$700 million cost of war with Idi Amin's Uganda--stemmed largely from such adverse exogenous factors as the collapse in the terms of trade and the drought in 1979-1984. With the foreign exchange shortage in the late 1970s, led by the oil crisis, the government was forced to cut back imports and recurrent spending, which in turn caused breakdowns in basic infrastructure and maintenance, eroding productive capacity utilization. Import strangulation further caused the decline in production including exports. This eroded the basis of tax revenues, forcing the government over the same period to accumulate \$600 million in external debt equal to about 30 percent of the total recurrent revenues.

Since the Tanzanian economy is so vulnerable to external developments, it is particularly important to learn to minimize policy errors; In such a weak, crisis-prone economy as Tanzania, mistakes would prove extremely costly. Thus, the new challenge facing Tanzania is implementation of appropriate policy responses to the persistent crisis in production and productivity. What then are future policy options for Tanzania? Before attempting to address this issue, it is important to have a correct understanding of the characteristics of the recurrent economic crises in Tanzania.

In essence, as pointed out by A. Singh, the Tanzanian economy is at a fundamental, structural disequilibrium in the sense that external-sector equilibrium would be incompatible with the sustenance of socially acceptable economic growth. At a sufficiently low (or even a negative) growth rate, the economy could conceivably sustain a balance-of-payments equilibrium. But this would certainly not be an acceptable option. In

this regard, it is important to understand that the recurrent crises seen in Tanzania were largely triggered by the reduction of supply rather than by mismanagement of demand. Thus, future policy options for the industrial sector, equally applicable to the agricultural sector, need to focus on enhancement of supply capacity.⁶³

There are two kinds of policy responses needed: one relating to short-term adjustment, and the other to long-term adjustments. The immediate and short-run policy responses must deal with the measures to secure an adequate level of import capacity to reactivate idle productive capacity, and thereby to restore the tax base. In particular, given the prevailing scarcity of foreign exchange, it makes sense to place higher priority on rehabilitation of industrial operations rather than starting with new production facilities. Furthermore, new investments for rehabilitation must be restricted to the most efficient enterprises producing essential goods.⁶⁴ The long-term responses, on the other hand, must address the issue of strengthening and expanding the productive base and basic physical and human infrastructure in order to enhance supply capacity of the economy. As for the short-term responses, there are several issues that warrant scrutiny.

Recently, as a response to relieve constraints on productive capacity, the government introduced a scheme to liberalize importation of goods which are in short supply and essential for economic and social development in the country. Businessmen are now allowed to import necessary inputs using their own foreign exchange funds. There is, however, evidence to indicate that the "own funds" scheme has led to importation, mainly, of consumer goods rather than that of essential inputs for manufacturing production.

The "own funds" scheme, although it has enriched the government coffers through import duties and other charges to imported items, has failed both to stimulate industrial production and to reduce inflationary pressures. This is because those firms relying on the "own funds" scheme often acquire foreign exchange in the parallel market

usually at exorbitant rates. The overvalued exchange rate is likely to be passed on to the consumer in marked-up prices. In this situation, only those export firms competitive in an open world market could afford to import. In addition, as the consumer prices fail to scale down with import liberalization, it is likely that a pattern of conspicuous consumption catering to relatively well-to-do economic classes emerges.

Related to the issue of import liberalization is the proposed scheme of export retention in which a given percentage of export earnings can be retained by the firm for its imports. Currently, different rates of retention are being considered for different categories of exports. Manufacturing exporters will retain the largest rate of 50 percent as compared to 10 percent retention rate for traditional agricultural exports. The bias in favor of manufacturing may stimulate manufacturing exports but could produce serious distortionary results by reducing net foreign exchange income, as some types of manufacturing products with relatively higher domestic resource costs could easily be substituted for agricultural exports with lower resource costs.

One important issue recurrently debated within the framework of the IMF-imposed stabilization program is the devaluation of the domestic currency. Although the discussion of exchange rate policy is beyond the scope of this paper,⁶⁵ it is well to examine its full implications in the specific context of the Tanzanian economy. Many economists (in particular, those of the neo-Keynesian persuasion) would view the wisdom of relying on a substantial devaluation of the domestic currency in a Third World country with much skepticism. First of all, short-term commodity supplies in a "small" primary-goods producing country such as Tanzania are generally highly inelastic. A devaluation is not likely to result in immediate export gains. Secondly, in an import-dependent, centrally-planned economy (Tanzania), there is no assurance that devaluations will reduce imports, since most imports in a planned economy are essential for domestic production. On the other hand, higher import prices triggered by the devaluation will be inflationary,

quickly wiping out any external price gains. Moreover, if there were no real wage resistance, a devaluation would of course shift the burden of adjustment onto vulnerable groups. In view of these far-reaching consequences of devaluation, the better alternative policy will be selective sector controls by means of export subsidies and import duties.

Another issue worth mentioning as regards Tanzanian industry is its high capital intensity and low capacity utilization in the production process. In the government planning for industrial development there have been significant downward biases in the valuation of capital, which encouraged producers to use capital beyond an economically justifiable level. This contributed to low capacity utilization and high capital intensity in many industries. Thus, greater care must be exercised in the evaluation of projects with substantial capital content, depreciation and rate of capital utilization.

One must also note the endemic problems of low worker productivity and poor management, particularly in many parastatals, which are mainly attributable to Tanzania's physical infrastructural deficiencies. Aside from the problems of training and the upgrading of managerial and work skills, Tanzania must also resolve the dilemma of improving productivity without pecuniary incentives within the framework of a socialist society.

Also, small and medium enterprises in Tanzania seem more efficient and viable than large, parastatal enterprises. This point is important since limited resources and technological capability in Tanzania will likely place severe constraints on the longer-term infrastructural development. Thus, in the interim period there is a clear need to accelerate the development of small-scale enterprises, particularly in rural areas. They could make a significant contribution not only to rural development but also to the alleviation of scarcity of essential manufactured goods consumed by the rural population. Small-scale industry development must be emphasized as an integral component of industrialization strategy in the present context.

All things considered, those policy adjustments currently undertaken (devaluation, export retention, import liberalization, selective price decontrol) are likely to produce at best marginal results. From a longer-term perspective, the development strategy must redefine, and aim at rationalizing, the structure of industry. The Basic Industrialization Strategy, as implemented in the past, has clearly proved untenable as a policy framework. The limited resource base and domestic market size cannot support all the "basic" sectors Tanzania would like to have. It would make sense to attempt to rehabilitate only those industries judged as dynamically viable. In this respect, industrial licensing agreements on a southern African regional market basis could become a key factor in determining the longer-term viability of many Tanzanian industries.

Finally, the success in Tanzanian efforts to attain a relatively high degree of self-sufficiency in industry would largely be determined by the availability of a sound infrastructural base. The shortage of skilled manpower and managerial skills, inadequate transportation and communication facilities, and dependence on foreign imports are all areas of recognized deficiencies that have inhibited further development of basic industries.

The findings of this study point to the following areas of economic weakness which would need future policy focus for improvement:

Given the scarcity of adequately trained manpower, and its critical role in Tanzanian development, existing manpower forecast and assessments need to be upgraded.

Development of energy policy planning capabilities, development of renewable energy sources and provision of investment resources and technical training for energy development are important for the creation of a capacity for self-sustaining growth in Tanzania.

The transport sector has been characterized by inefficiencies partly as a result of external disruptions--such as the breakdown of the East African Community, the Uganda war and the scarcity of foreign exchange--and partly as a result of the shift to the public-sector transport system in the trucking industry which has proved to be less efficient than private operations.

The policy issues discussed above have related to structural rather than financial concerns. At present, financial concerns are dominant for Tanzania. Without resolving the financial crisis, the state cannot afford to implement any strategic choices for industrial development. Unfortunately, prospects for financial stabilization or early recovery are not at present very promising. Possibilities of meeting the IMF conditionality--a precondition for securing new major loans from other sources--seems no nearer in mid-1985 than it was in 1981.⁶⁶ Assistance from multilateral donor agencies has so far been at a level barely sufficient for the Tanzanian economy to avert a total collapse. It seems that there is a long arduous road ahead for Tanzania. According to Professor Green's estimate,⁶⁷ even under the most optimistic assumption that Tanzania receives all realistically possible adjustment loans from the international community, it would still take at least five or six years of the grace period before repayment could even begin; moreover it would need to be stretched over a further nine years. Thus, there appears to be very little prospect of implementing a serious development plan in the immediate future.

ENDNOTES

- 1 For an overview of the recent industrial crisis in the third world, see A. Singh, "The Interrupted Industrial Revolution of the Third World: Prospects and Policies for Resumption," Industry and Development, No.12, 1985. pp. 43 - 68.
- 2 The general policy of the Tanzanian governments since 1967 have been strongly pro-rural. For instance, according to Green's calculations, the government-supported agricultural producer prices increased by 180 percent from late 1974 through late 1980, as compared to 120 percent increases in minimum urban wages. See R.H. Green, "Beginning to Rebuild or Bumping Along the Bottom: Tanzanian Economy 1984-85," in African Contemporary Record, 1984-85, forthcoming.
- 3 According to the IMF trade statistics, the real terms of trade for primary commodities producing countries declined by more than 30 percent over the period 1977-1983.
- 4 Such funds have mostly consisted of foreign exchange acquired in the parallel market, and smuggling.
- 5 R.H. Green, "Sparring with the IMF" Africa Report, September-October 1984.
- 6 In the study by M. Roemer et al.--"The Range of Strategic Choice in Tanzanian Industry" (Harvard Discussion Paper No. 7, 1975)--the authors conclude that "there is a large core of industries common to both the BIS and the strategy based strictly on economic efficiency." This implies that any trade-off between efficiency and "self-reliance" aimed for under the BIS may not be so much attributable to the choice of the strategy as the choice of the scales of production, i.e., large-scale vs. small-scale.
- 7 The Tanzanian small industry development strategy follows the Chinese formulation: small-scale techniques are to be preserved in those industries in which they are cost-effective.
- 8 The examples are steel and cement industries.
- 9 Government statistics include only the monetized sector activities for firms employing more than 10 persons and leave out small-scale, informal-sector establishments.
- 10 The quoted figures do not include the construction sector. The construction sector registered a negative annual average growth rate (-9.0 percent) during 1976-78.
- 11 "Physical Production in Selected Industry for 1976-79," 1980.
- 12 For details, see World Bank, Tanzania Basic Economic Report, Annex V (1977).
- 13 See Tanzania: Basic Economic Report, Annex V. *ibid.*

14 Estimates of rates of capacity utilization by firms are reported in S.M. Wangne, "Excess Capacity in Industry: A Case Study of Selected Firms in Tanzania," In K.S. Kim et al., eds. Papers on the Political Economy of Tanzania, Heinemann, London, 1979, pp. 111-118.

15 "Required" foreign exchange is estimated on the basis of the applications for import-licensing by the Bank of Tanzania.

16 Shortage of intermediate capital goods is directly related to the underutilized productive capacity in industry. See S.M. Wangwe, op cit.

17 For example, see World Bank, Energy Operations and Policy Issues in Developing Countries, Staff Paper No. 350, August 1979.

18 See K.S. Kim, "Enterprise Performances in the Public and Private Sectors: Tanzanian Experience" Journal of Developing Areas (April 1981); and also the World Bank, Tanzania Basic Economic Report, Annex V. For a more sanguine point of view concerning parastatal performance, see ILO Report on Tanzania, Toward Self-Reliance, 1977.

19 In this connection, the World Bank Study, Basic Economic Report, Annex V, 1977, p. 147, recommends an increase in interest rates that would exert pressures on parastatal to reduce costs.

20 The import intensity of Tanzania's manufacturing production has been steadily increasing. For instance, the Survey of Industries data reveal that the ratio of import content to gross output in manufacturing steadily rose from 10 percent in 1961 to 14.6 percent in 1973.

21 By the recently concluded IMF-Tanzanian loan agreement, higher priority was given to imports of raw materials and spare parts essential for the directly productive sectors--agriculture and industry--and particularly for ongoing projects geared to the expansions of the export sector. The planned import support program turned out to be inadequate for rehabilitating the industry to the pre-1978/79 crisis level.

22 See K.S. Kim, "Industrialization Strategies in a Developing Socialist Economy--An Evaluation of the Tanzanian Case," The Developing Economy, 16(3), September 1978, 254-268.

23 The official definition of small-scale firms includes those engaging less than ten employees. This is only for the convenience of statistical tabulation of enterprise activities. See Survey of Industries series.

24 Systematically-compiled, aggregative data for Tanzania's small-scale industry activities preceding 1977 do not exist. The periodically compiled Survey of Industries census data from which many aggregate time-series data have been derived have included only the "full-scale" firms engaging ten or more employees. They have excluded those informal sector establishments made up of small-scale, family-oriented units. However, some information on small-scale industry activity was made available by the recent SIDO census survey.

25 The Third Five Year Plan for Development of Small-Scale Industries in Tanzania. SIDO, 1980 (limited circulation).

26 Calculating from SIDO's Third Five Year Plan budget data, it would cost on the average of T/Sh. 10,450 to employ one person in a non-factory unit as compared with T/Sh. 41,518 in a factory-type unit. The results of studies of other African countries generally confirm the relative labor intensity of the small-scale sector. See J.M. Page, Jr. Small Enterprises in African Development--A Survey. World Bank Paper No. 363, 1979.

27 In a quantitative exercise to determine the strategic investment planning for Tanzania, M. Roemer and his associates (op cit.) similarly concluded that there was considerable potential for "dispersal and ruralization of industry by the adoption of small-scale technologies."

28 From the text of a speech by C. Nyirabu, the Governor of the Bank of Tanzania, at a seminar of bankers and financiers, IMF, Dar es Salaam, 1980.

29 The author was unable to confirm the recent data.

30 There have only been a few donor commitments to the regional industrialization programs. They fell far short of the targeted investment outlay for rural industrial estate development.

31 SIDO report on Five Year Plan, op cit.

32 This section on transportation is largely drawn from Michael Crosswell's contribution in the A.I.D. report (J. Mudge, M. Crosswell & K. S. Kim, Alternative Assistance Strategy for Tanzania, Washington, D.C., 1981, unpublished).

33 See, for example, International Monetary Fund, Report on "Tanzanian's Foreign Exchange Needs for Economic Rehabilitation in the Short-Term (1980-1983)", 1979. In the report, the Tanzanian government's statement in 1979 of foreign exchange needs for short-term rehabilitation amounts to \$1.4 billion, of which almost 2/3 would accrue directly to the transport sector.

34 At that time, the structure of the private trucking sector appeared very competitive; fifty-eight percent of trucks were operated by a single owner-operator; and 90 percent of private truck owners owned fewer than four vehicles, accounting collectively for about 68 percent of the private fleet. See IBRD report No. 1526b-TA, "Tanzania: Appraisal of a Trucking Industry Rehabilitation and Improvement Project", September 1977. Annex 3, page 4.

35 IDA Project Paper IDA/R77-103; September 1977 pp. 12-13.

36 The Government of Tanzania, Economic Survey, 1978/79, p. 98; Also, René Dumont, "Self-Reliant Rural Development in Tanzania" (manuscript).

37 For instance in early 1979, the TRC was able to load and carry only 10 percent of the agricultural tonnage it was offered for transport. The average figure for all goods was 17 percent ("The Inter-Regional Transport of Major Agricultural Commodities in Tanzania," FAO/UNDP, June 1979; pp. 21-22). Low availability of engines was at least one factor accounting for the decline. For instance in 1977, only 45 percent of steam locomotives and 67 percent of diesel locomotives were available for service, well below the "standard" figures of 75 percent and 85 percent respectively, as well as availability ratios achieved during the 1971-74 period ("Transport as a Factor Affecting the Efficiency of the Internal Trade System in Tanzania," East African Management Institute, 1978. IV-22).

- 38 IDA Project Paper IDA/R77-103; September 1977, p.12.
- 39 IBRD Report No: 1526b-TA op.cit .pp.12-13.
- 40 FAO/UNDP Study op.cit p. 30.
- 41 Dumont, op.cit. p.59; IBRD Report, No.1526b-TA, p.15.
- 42 "Transport as a Factor Affecting the Efficiency of the Internal Trade System in Tanzania," op.cit. 30 pp.
- 43 For instance, governmental parastatal demand for trucks and other transport vehicles was met to a far greater degree than private demand. For the public sector, 34 percent of demand for trucks was met whereas the figure for the private sector was 11 percent. Source: Ministry of Communications and Transport, "Suppressed National Motor Vehicle Demand," 1977/78.
- 44 FAO/UNDP Study op.cit. p. 15. Also p. 49, where it is reported that 2/3 of the maize that was milled in Tanzania was transferred between regions at considerable expense before milling. Dumont (op.cit. p.100) is also highly critical of the waste in transportation imposed by an overly centralized distribution system.
- 45 For instance, the Tanzanian government succeeded in securing the financing for rehabilitating Dar es Salaam harbour and the TAZARA railroad.
- 46 The Ministry's Third Five Year Plan Report, Survey of the High and Middle Level Manpower Requirements and Resources. 1979.
- 47 Another area to which more attention could be given is the education and training of women. The potential for women's role in development and the social implications of developing female human resources are well documented elsewhere. See for example, L. Fortman, "Women and Agricultural Development," in K. S. Kim et al. ed., Papers on the Political Economy of Tanzania, Heinemann, 1979. The situation in regard to women may be exemplified by the fact that in recent years one and a half percent of the Tanzanian graduates leaving the Dar es Salaam University have been women.
- 48 Ministry of Manpower Development, "Progress in Localization and Self-Sufficiency Achieved since Independence," 1979.
- 49 Marketing Development Bureau, Ministry of Agriculture, "Report on Investigation into the Financial and Operating Position of Kilimo Crop Authorities and the National Milling Corporation," Dar es Salaam, May 1979 (limited circulation).
- 50 Agriculture represents an exception to this general picture. According to Roger Simons' study--Tanzania Agricultural Manpower Study 1979-1986, Report to A.I.D., 1980 (Unpublished Draft) pp.15-18--the demand for diplomas (Category A level) from agricultural training institutions currently far exceeds supply and is projected to continue to exceed supply in the decade ahead. The contrary situation holds with respect to Category B trainees. Thus, while for agriculture over-expansion of certificate ranks (Category B) is deemed unwise in the light of shortages of both recurrent finance and viable small-scale farm technologies, the higher level training is needed more in the agricultural sector at this time.

51 Includes coal and ignite, petroleum, natural gas and hydro, nuclear and geothermal power. It must be noted that the major component of internal energy production in Tanzania is fuelwood. Over 95 percent of the population is estimated to rely on the use of fuelwood (and charcoal) as the primary source of fuel, which accounts for the bulk of Tanzania's energy use. This section focuses only on industrial use of energy as related to industrial development.

52 According to the World Bank Economic and Social Data series, it varied between 56 to 97 coal equivalent kilograms (c.e.k.) during the period 1967 and 1975.

53 The Economic Social Data Services Division, A.I.D.

54 World Bank Staff Paper, No. 350, Energy Options and Policy Issues in Developing Countries, 1979, Washington, D.C., p. 91.

55 The figures for 1972 and 1976 are calculated from the sources of UN Statistical Series, and the 1979 and 1980 figures are from the Tanzanian government's Economic Report.

56 Such renewable energy resources as wind, solar and biogas have certainly a role to play in the future. Because of limitations in technology, however, they cannot be a good substitute on a large-scale basis for conventional commercial energy.

57 It is important to note that the creation of SADCC was not based on a formal treaty but on a protocol agreement.

58 Nsekila, A., eds., South Africa: Towards Economic Liberation, London: Rex Collins, 1981, p.3. For a general discussion of SADCC, see World Bank, Toward Sustained Development in Africa, (Washington, D.C., 1984); and J. Hanlon, SADCC, Progress, Projects, and Prospects (London: EIU, 1984).

59 Nsekila, A. op.cit., p.90.

60 SADCC, documents from the workshop on Rehabilitation and Upgradation of Priority Industries in the SADCC Region, Arusha, 1985.

61 For a fuller discussion, see Kwan S. Kim, "An Appraisal of Eastern African Economic Integration Scheme," in K. S. Kim, R. B. Mabele & M. J. Schultheis, eds., Papers on the Political Economy of Tanzania (London: Heinemann Educational Books Ltd, 1979) pp. 181-189.

62 For a fuller discussion of the problems of SADCC, see UNIDO, Industry Cooperation Through the SADCC (UNIDO/I/S. 5701, 1985), pp. 78-96.

63 Clearly, the standard IMF policy package on demand management for adjustment would be inappropriate to the Tanzanian context.

64 For instance, it will not be in the immediate interest of Tanzania to attempt to continue such large projects as Morogoro sisal bags, the Kibo fabrics, and NCI's various types of chemicals production. The priority list of enterprises designated by the Tanzanian government for rehabilitation still includes a number of large, parastatal firms. The annual recurrent imports required to support production by the rehabilitated manufacturing firms

were estimated at US \$183.5 million by the Government's own estimates. See Development Planning 1985.

65 For a fuller discussion of the effects of devaluation, see Ajit Singh, "Tanzania and the IMF: The Analysis of Alternative Adjustment Programs," forthcoming in Development and Change.

66 W. Pike, "Spurring the IMF's Shilling," South, July 1985.

67 R.H.D. Green, "Sparring with the IMF.," Africa Report, September-October, 1984. p. 74.