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INDUSTRIAL DEVELOPMENT REVIEW SERIES

BURMA

Transition to agro-based industrial economy

Prepared by the
Regional and Country Studies Branch

V.87-92833

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PREFACE

This Industrial Development Review is one of a series of country studies prepared by the Regional and Country Studies Branch of the United Nations Industrial Development Organization (UNIDO).

The Reviews present brief factual and analytical surveys of industrial development in developing countries. Such industry-specific Reviews are in demand for a variety of purposes: to provide an information service to relevant sections within UNIDO and other international organizations and aid agencies concerned with technical assistance to indsutry; to be used as a reference source for financial organizations, public and private industrial enterprises; and economic research institutes in developed and developing countries; and to serve as a handy, useful information source for policy-makers in developing countries. Although the Reviews do not represent in-depth industrial surveys, they focus exclusively on industry and present the information on the entire spectrum of the industrial development process in the countries concerned in a condensed and yet comprehensive form.

The Reviews draw primarily on information and material available at UNIDO headquarters from national and international sources as well as data contained in the UNIDO data base. Generally, specific field surveys are not undertaken. The presentation of up-to-date information on sub-sectoral manufacturing trends are usually constrained by incomplete national data on the industrial sector. To supplement efforts under way in UNIDO to improve the data base and to monitor industrial progress and changes on a regular basis, it is hoped that the appropriate national authorities and institutios in the respective countries and other readers will provide relevant comments and information. Such response will greatly assist in updating the Reviews.

This Review was prepared on the basis of information available at UNIDO Headquarters at the end of September 1987. It is divided into two parts. Chapters 1 and 2 are analytical, giving first a brief overview of the country's economy and its manufacturing sector and then a more detailed review of the structure and development of its manufacturing industries with a focus on the potential for higher degree of industrial processing of agricultural and other resources. Chapter 3 contains an overview and assessment of policy measures relevant to industrial development, a review of the more important governmental and other institutions involved and analysis of the scope for resource-based industrialization and key areas requiring technical assistance.

It should be noted that the Reviews are not official statements of intention or policy by governments nor do the views and comments contained therein necessarily reflect those of the respective governments.

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Regional classifications, trade classifications, and symbols used in the statistical tables of this report, unless otherwise indicated, follow those adopted in the United Nations Statistical Yearbook.

Dates divided by a slash (1986/87) indicate a fiscal year or a crop year. Dates divided by a hyphen (1986-1987) indicate the full period, including the beginning and end years.

References to dollars ($) are to United States dollars, unless otherwise stated.

Percentages may not add to 100.0 precisely due to roundings.

In Tables:

- Three dots (...) indicate that data are not available or not separately reported;
- Two dashes (--) indicate that the amount is nil or negligible;
- A hyphen (-) indicate that the item is not applicable.

The following abbreviations are used in this document:

The following abbreviations are used in this document:

AAC	Annual allowable cut
ADB	Asian Development Bank
CRO	Central Research Organization
CST	Commodity and Services Tax
EEC	European Economic Community
EPEF	Export Price Equalization Fund
GDP	Gross domestic product
IDA	International Development Association (World Bank affiliate)
IMF	International Monetary Fund
K	Burmese Kyat
LDC	Least Developed Country
MEB	Myanma Economic Bank
MVA	Manufacturing value added
SEE	State Economic Enterprises
Pyithu Hluttaw	People's Assembly
TYP	Twenty-Year Long-Term Plan
UNIDO	United Nations Industrial Development Organization
UNDP	United Nations Development Programme
WTP	Whole Township Programme

BASIC INDICATORS 1

The economy

GDP (1986/87)	:	US$7,332 million[a/]					
Population (1986/87)	:	37.85 million					
Rate of growth of population (per cent)	:	1965–80	1980–85	1985/86	1986/87		
		2.2	2.0	1.99	1.98		
Labour force (1986/87)	:	15.51 million					
GNP per capita (1985)	:	$190					
Growth rate of GDP (per cent)	:	1965–80	1980–85	1984/85	1985/86[a/]	1986/87[b/]	1987/88[c/]
		2.3	3.4	5.6	4.3	3.7	4.0
Distribution of GDP (percentage)	:	1961/62	1977/78	1986/87			
Agriculture		26.0	26.8	27.9			
Processing and manufacturing		10.5	10.6	10.7			
Mining		1.3	1.2	1.5			
Services and other		62.2	61.4	59.9			
Rate of inflation (per cent)	:	1982	1983	1984	1985	1986	1987
		5.3	5.7	4.8	6.8	9.2	8.0
Exchange rate (kyat equavilent to US$1)	:	1982	1983	1984	1985	Sept. 1986	Sept. 1987
		8.5	8.5	8.5	8.5	8.5	6.7

a/ Estimate.
b/ Provisional.
c/ Forecast.

BASIC INDICATORS 2

Resources

Production of main crops (1986/87) ('000 tonnes)	:	Paddy (15,219), sugar cane (3,599), pulses (717), groundnuts (586), maize (324), wheat (246), sesamum (187)
Fisheries (1985/86)	:	612,800 tonnes (total catch)
Forestry production (1986/87) ('000 cubic tonnes)	:	Teak (logs) (410), hardwood (logs) (680), teak (sawn timber) (88.7), hardwood (sawn timber) (234.9)
Livestock (1986/87) ('000)	:	Cattle (9,757), buffalo (2,155), sheep/goat (1,482), pig (2,987), fowl (32,381), duck (5,792)
Mining (1985/86)	:	Crude oil (11.3 million barrels), natural gas (32.6 billion cu.ft.), tin concentrates (7,600 tonnes), zinc concentrates (9,400 tonnes), copper concentrates (49,000 tonnes 1984/85)
Energy, major sources	:	Oil, natural gas, hydropower

BASIC INDICATORS 3

Foreign trade and balance of payments

EXPORTS		
Total value (1986)	:	US$300.3 million
Main goods (1985/86) (percentage)	:	Agricultural products (42.4), forest products (39.6), minerals and gems (7.7), other (10.3)
Main destinations (1985/86) (percentage)	:	Southeast Asia (27.8), EEC (11.4), Africa (10.4), Japan (7.5), India (7.1), China (6.2), other (29.6)
IMPORTS		
Total value (1986)	:	US$306.3 million
Main goods (1985/86) (percentage)	:	Capital goods (57.1), intermediate goods (30.9), consumer goods (11.9)
Main origins (1985/86) (percentage)	:	Japan (43.6), EEC (26.7), Southeast Asia (11.3), other (18.4)
Balance of payments (1985/86) (current account deficit)	:	$206 million
Reserves minus gold (1987)	:	$24.4 million
Total external debt (1986)	:	$4.4 billion
Debt service ratio (1987) (per cent of export earnings)	:	60 per cent

BASIC INDICATORS 4

The manufacturing sector

Manufacturing value added (1986/87)	:	$770 million[a/]			
MVA per capita (1986/87)	:	$20.8			
Employment in manufacturing (1986/87) (number of persons)	:	1.71 million			
Share of manufacturing employment in total labour force (percentage) (1986/87)	:	8.7			
MVA per employee (1986/87)	:	$450			
Structure of MVA by end-use (percentage)	:	1974/75	1984/85		
Mainly consumenr goods		59.4	56.8		
Mainly intermediate goods		31.8	31.1		
Mainly capital goods		5.5	7.8		
Other (undistributed)		3.3	4.3		
Growth rate of MVA (per cent)		1965-1980	1980-1985	1985/86[a/]	1986/87[b/]
		3.9	6.0	4.5	6.9
Share of manufactured exports[c/] in total exports (1977)[d/]	:	6.1 per cent			
Share of manufactured imports[c/] in total imports (1977)[d/]	:	76.8 per cent			

a/ Estimate.
b/ Provisional.
c/ SITC 5 to 8 less (67 + 68).
d/ The latest available data.

BASIC INDICATORS 5
Inter-country comparison of selected indicators

	Unit	Burma	Indonesia	Malaysia	Nepal	Philippines	Thailand
I. DEMOGRAPHIC INDICATORS							
Population (mid-1985)	million	36.9	162.2	15.6	16.5	54.7	51.7
Population growth (1980-1985)	per cent per annum	2.0	2.1	2.5	2.4	2.5	2.1
Infant mortality (1985) (aged under 1 year)	per 1000	66	96	28	133	48	43
Area	'000 km^2	677	1,919	330	141	300	514
Density (1985)	persons/km^2	55	85	47	117	182	101
II. ECONOMIC INDICATORS							
GDP (1985)	$ billion	7.1	86.5	31.3	2.3	32.6	38.2
GNP per capita (1985)	$	190	530	2,000	160	580	900
GDP growth (1980-85)	per cent/annum	5.5	3.5	5.5	3.4	-0.5	5.1
Agriculture (1985)	per cent of GDP	48	24	21[a/]	62	27	17
Industry (1985)	per cent of GDP	13	36	35[a/]	12	32	30
Manufacturing (1985)	per cent of GDP	10.3	14	19[a/]	5	25	20
Services (1985)	per cent of GDP	39	41	44[a/]	26	41	53
Exports of goods and non-factor services (1985)	per cent of GDP	6	23	55	13	22	27
Gross domestic investment (1985)	per cent of GDP	17	30	28	21	16	23
External public debt (1985)	per cent of GNP	42.1	32.0	47.8	22.5	42.7	26.8
III. INDUSTRIAL INDICATORS							
MVA (1984)	million $ at constant 1980 prices	692	13,165	6,770	...	8,644	8,325
Share of MVA in GDP (1985)	per cent	10	14	...	5	25	20
Growth of MVA (1980-85)	average annual per cent	6.0	6.4	6.1	...	-1.2	5.3
Share of manufactured exports[b/] in total exports	per cent	6.1[c/]	10.0[d/]	24.6[a/]	60.0[a/]	24.3[a/]	32.8[d/]
Share of manufactured imports[b/] in total imports	per cent	76.8[f/]	60.1[d/]	64.3[a/]	64.7[a/]	40.7[a/]	53.7[d/]

a/ 1983. b/ STIC 5-8 less 67 +68. c/ 1987. d/ 1984. e/ 1985. f/ 1977.

SUMMARY

The economy of Burma is passing through a period of subdued growth. Growth of GDP in real terms faltered consecutively from 5-6 per cent in 1984/85 to 4.3 per cent in 1985/86, and to 3.7 per cent in 1986/87. A stable growth rate of 4 per cent estimated for the fiscal year 1987/88 is short of the envisaged target of 5 per cent for the year. Falling export earnings and declining foreign exchange reserves forced Burma to seek "least developed country" status in December 1986 to receive more concessional aid and to herald a new initiative towards rescheduling the country's external debt repayments which absorb around 60 per cent of export earnings.

Export performance was far below the target set for 1986/87. Counter-trade appears to be a growing avenue for Burma to export more in volume terms, with a view to compensating for the falling world prices for the country's principal exports particularly minerals. Apart from the adverse trends in the external sector, the Burmese economy is beset by myriad problems as a result of the thriving parallel economy.

The government's decision in September 1987 to demonetize some denominations of the Burmese Kyat seems to have little impact on inflation which runs between 200 and 500 per cent for items which are not listed in the official list of consumer goods. In the face of these problems the Annual Plan for 1987/88 sets a modest growth rate of 5.4 per cent in GDP. However, the Plan envisages an ambitous target of 11 per cent growth in the manufacturing sector.

Burma's manufacturing sector accounted for 10.7 per cent of GDP and employed 8.7 per cent of the country's labour force in 1986/87. The principal manufacturing activities are related to the processing of agricultural resources and petroleum refining. Food and beverages form the largest manufacturing activity, accounting for 71.5 per cent of manufacturing output in 1986/87. Of the 42,454 factories and establishments in operation in 1986/87, 1,834 were state-owned, 719 co-operatives and 39,901 were private enterprises. Private enterprises represent around 94 per cent of factories and establishments, but 91 per cent of them encompass factories which employ less than 10 workers each. Although the manufacturing sector did not play a pacesetting role in the country's economic development due to its small base and the pace of manufacturing expansion has been far below the targeted growth rates, the sector is assigned the task of transforming the economic structure from an agricultural country into an agro-based industrial economy. This endeavour appears to be a challenging task as the lack of an integrated industrial structure consistutes a constraint for the creation of an efficient manufacturing sector in Burma.

A major problem facing the country's manufacturing sector is underutilized capacity. While the performance of agriculture-, fishery- and forestry-based industries has been hampered by irregular supply of raw material inputs, the major bottlenecks impeding rapid expansion of the mining- and energy-based industries are lack of equipment and spare parts, shortage of skilled manpower and poor transport network.

The overall performance of manufactured goods by end-use seen in the context of their sales by the State Economic Enterprises shows mixed trends. Sales of basic consumer goods over a four-year period ending in 1986/87 have been more dynamic. The intermediate goods sector experienced an absolute decline in sales in recent years with the exception of intermediate goods for marine and salt industries. All branches of capital goods, excepting fishing equipment, exhibited some fluctuations in sales in recent years; the overall sales grew modestly at an average annual rate of 3.7 per cent in current prices during 1983/84-1986/87.

The most important sector in terms of employment creation has been the public sector, but the private and co-operative sectors are also overwhelmingly important in terms of labour absorption because they mostly undertake labour-intensive activities. The question of improving the operational efficiency of public enterprises is of deep concern to the government. The main thrust of new initiatives is to make these enterprises more business-like. The government is reassessing the role of the private sector.

The need to infuse greater dynamism into the manufacturing sector to achieve export diversification and import substitution is well recognized by the government. Higher degree of industrial processing of Burma's resources could increase the value of manufactured exports which currently account for 6.1 per cent of total exports. Efforts are under way towards rehabilitating and modernizing rice and oil mills. A new project envisages construction of 10 expeller oil mills and conversion of one existing oil mill into a solvent extraction plant, while 180 rice mills have been identified as possible candidates for rehabilitation. The initial stress on the creation of a capital goods sector seems to have lost its vigour. What Burma's industrial sector needs today is the creation of backward and forward linkages in consumer and intermediate goods industries rather than a shift in priority to other sectors. Priority given to the raw material-based industrialization is likely to produce more positive and immediate effects on the rate of growth, considering the country's rich resource endowments.

Burma's endeavour to embark on higher degree of industrial processing of agricultural and other resources is to be supported by substantial infusion of external assistance. The long-term objective of transforming Burma's agricultural economy into an agro-based industrial economy could be achieved through the country's reliance on external assistance. The fact that there has been a large inflow of consumer goods across the border for sale in the thriving unofficial market attests to the existing domestic demand for these products. Reorientation of industrial policies towards the production of essential consumer goods would hold considerable promise if the parallel market is erased. Renewed efforts are required to reorient industrial development programmes to concentrate in product areas where the country could sharpen its competitive edge so as to match the pace of industrial expansion with the country's rich resource endowments.

1. THE ECONOMY OF BURMA

1.1 Recent economic trends

The economy of Burma grew at an average annual rate of 5.5 per cent during 1982/83-1985/86. When most of the Southeast Asian economies were affected by the global recession of the early 1980s, it looked as if the Burmese economy would survive the cyclical downturn of the global economy; however, the pace of economic growth remains subdued since 1984/85. Growth of GDP in real terms faltered consecutively from 5.6 percent in 1984/85 to 4.3 per cent in 1985/86, and to 3.7 per cent in 1986/87. The economy is expected to record a stable growth rate of 4 per cent in 1987/88, which is short of the government target of 5.4 per cent.

Slow economic growth and dearth of foreign exchange forced Burma to apply to the United Nations Economic and Social Council for "Least Developed Country" (LDC) status in December 1986 to secure more concessional foreign aid and to herald a new move towards rescheduling the country's external debt repayments[1/] which absorb around 60 per cent of the country's export earnings. Burma's foreign debt, the bulk of which is made up of bilateral and multilateral official development assistance (ODA), rose from $1 billion in 1979 to $3.7 billion by the end of 1986. Burma was accordingly granted status as a "Least Developed Country" (LDC) by the United Nations General Assembly on 11 December 1987.

The country's debt continues to grow as export performance lags considerably behind its need for imported goods and services. Export earnings of $230 million in 1985/86 was short of the target of $555 million, and export earnings of $148.5 million in 1986/87 was far short of the envisaged target of $535 million. The government estimates a K44.2 million balance-of-payments deficit for 1987/88. The current foreign exchange reserves of $24.4 million is the lowest since 1974. Exports are forecast to increase by 18 per cent in 1987/88. The government plans to export more in volume terms to compensate for the falling world prices of the country's chief exports - rice, teak and hardwoods, and minerals. There are indications that foreign assistance will finance more than 70 per cent of the total import bill, which is expected to rise by 7.3 per cent in 1987/88.

With a slowdown in economic growth and excessive debt burden, countertrade is used as one of the few avenues open to foreign suppliers. Recently an ammonia/urea plant installed by Uhde of Federal Republic of Germany was partially funded through product buyback, and the sale of an Liquified Petroleum Gas (LPG) plant by Mitsubishi Heavy Indutries involved a similar arrangement.

The government's decision in September 1987 to demonetize some denominations of the Burmese Kyat in order to to liquidate "black money" will have little impact on inflation. According to official statistics, the rate of

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1/ The LDCs are entitled to various forms of assistance from developed countries under the UN system, notably the Substantial New Programme of Action for the 1980s which was adopted in 1981. A separate UNCTAD resolution calls for the OECD countries to try as far as possible to write off the LDCs' ODA debts.

inflation was around 7.7 per cent in 1985/86. This rate is applicable to only officially listed consumer goods. It ignores the much higher prices prevailing in the country's extensive parallel economy. The Kyat which appreciated slightly against the weakening US dollar is exchanged at an official rate of K6.74:US$1; but one US dollar commands K40-80 in the unofficial market.

Sectoral performance of the economy shows divergent trends in recent years. Growth of agricultural output fell from 6.8 per cent in 1982/83 to 2.6 per cent in 1985/86 and 2.5 per cent in 1986/87. Output of rice, the country's key export commodity, was estimated at 8.7 million tonnes in 1986. Increased efforts are under way to supervise farmers at every stage of their operations, and the completion of six irrigation and flood control projects is expected to spur stronger growth of the agricultural sector in 1987/88. With the start-up of some 70 new public sector enterprises in raw materials processing and more than 600 privately-owned smaller plants the industrial sector recorded a healthy growth rate of 5.9 per cent in 1985/86. Shortages of fuel, equipment, spare parts and raw materials (largely imports) coupled with persistent transport bottlenecks imposed constraints on industrial plants and the envisaged annual growth rate of 11 per cent could not be reached in 1986/87. Owing largely to newly completed hydropower and thermal power plants, an increase in electricity production is projected at 8.2 per cent for the financial year 1987/88.

Burma faces fiscal austerity. Public investment for 1987/88 is projected at K7.5 billion, compared with K8.2 billion in 1982/83. Though the 1987/88 total investment outlay is up by K0.2 billion, it represents a sharp fall in real terms. The bulk of the new public investment is destined for the manufacturing sector (26.3 per cent), followed by transport and communications (17.6 per cent), power (13.4 per cent), and agriculture (11.5 per cent). Investment by the co-operative sector, the second economic pillar next to the state sector, is reduced by 25 per cent in 1987/88.

The Annual Plan for 1987/88, second year Burma's of Five-Year Development Programme covering the period 1986/87-1990/91, envisages a 5.4 per cent increase in the net output of the productive sectors - 5.4 per cent in agriculture, 5.8 per cent in livestock and fishery, 5.0 per cent in forestry, 0.8 per cent in mining and 11.0 per cent in processing and manfuacturing. The government endeavours to keep the Plan programmes in line with the prevailing economic conditions. In the face of some shortfalls in the achievement of envisaged targets, there is an urgent need to intensify efforts towards the creation of a sound economic base for sustaining a high pace of economic growth.

1.2 Economic structure

The population was estimated at 37.85 million in 1986/87, growing at an annual rate of 1.98 per cent. The economy is potentially rich in agricultural, fishery, timber, mineral and water resources, but large parts of these resources remain unexploited. In terms of average income Burma is one of the poorest countries in the world. With GNP per capita of $190 in 1985, Burma is classified as one of the low-income economies (world average being $270 for low-income economies as a group).

During 1961/62 - 1975/76, GDP in real terms grew at an annual rate of 2.85 per cent. Over the same period, population growth was estimated at 2.22 per cent per year. Consequently, growth of per capita income was marginal. The limited growth also meant a low level of savings and investments, and sufficient resources could not be devoted to diversify production and to bring about a much needed structural transformation of the economy.

The Burma Socialist Programme Party, at its first Party Congress held in 1971, made an assessment of the development of the economy over the nine years of its stewardship beginning in 1962. It recognized that the economy was not performing well and listed fifteen shortcomings for the lack of success.[1/] Among them, some of the more notable were: (a) weak co-operation and co-ordination among government organizations in implementing economic policies; (b) inefficient management of state economic enterprises functioning in quasi-administrative ways rather than in a businesslike manner; (c) slackness in the discipline of workers of state enterprises; (d) declining investment in the private sector; and (e) lack of opportunities in the private sector and inability of the public sector to absorb sufficient labour, leading to increasing unemployment and black marketing activities.

The need for infusing greater dynamism into the economy in order to promote further social and economic progress was well recognized by the authorities. An important effort was the launching of the Twenty-Year Long-Term Plan (TYP) in the early 1970s which accorded greater priority to the development of the agricultural sector and stressed the need for more systematic economic planning and improving economic performance. The Twenty-Year Long-Term Plan, 1971/72 - 1990/91, provides the framework for economic planning and policy-making. The TYP covers a series of five consecutive Four-Year Plans. The Plan aims at doubling per capita output over the twenty-year period, and to transform the country from an agricultural economy to an agro-based industrial economy. It envisages GDP growth at an average annual rate of 5.9 per cent over this period. Three main priorities are set in the TYP: (a) to increase production in the agriculture, livestock, fishery and forestry sectors and to promote their exports; (b) to establish import-substituting consumer goods industries; and (c) to increase mineral production to the extent possible and to initiate establishment of heavy industries based on mineral raw materials.[2/]

The comprehensive planning effort was followed by several new policy initiatives and reforms in the mid-1970s. Thus in 1975, a set of guidelines were adopted to grant greater autonomy in the management of the State Economic Enterprises (SEEs) and to enable them to operate in a more businesslike manner. A major tax reform was implemented in 1976 to improve domestic resource mobilization. Starting in the mid-1970s, greater efforts were also made to mobilize external multilateral and bilateral assistance, and the first meeting of the aid group on Burma - the Burma Consultative Group - was convened under the World Bank auspices in 1976. Besides the World Bank, the

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1/ For details, see Planning Department, Ministry of Planning and Finance, Burma Socialist Programme Party, Long-term and Short-term Economic Policies of the Burma Socialist Programme Party, December 1973.

2/ Planning Department, An Outline of the Directive for the Twenty-Year Plan and the Second Four-Year Plan, December 1973.

Asian Development Bank and the governments of several industrialized countries including Japan, Australia, US, UK, Federal Republic of Germany and France are major participants in these Consultative Group meetings. Finally, a Law on the Rights of Private Enterprises was passed in 1977[1/] to reactivate the private sector and to define its role in the economy more clearly.

The reforms yielded positive results and economic performance improved markedly in the latter half of the 1970s. GDP in real terms grew at the rate of 6.3 per cent per year during 1976/77 to 1981/82. A key factor in the improvement was the good performance in agriculture due to a reorientation of policies towards the development of that sector and particularly the boost to rice output brought about by the paddy intensification scheme. Favourable weather conditions and good international prices for the primary exports that prevailed over most of this period also helped. Higher growth and greater efforts made at domestic and external resource mobilization increased the level of savings and investments and permitted a larger inflow of imports which resulted in increased capacity utilization in industry.

In recent years, a major preoccupation has been to maintain the momentum and to build upon the good performance achieved in the latter half of the 1970s. However, the high pace of economic growth generated by leading sectors of the economy in the early 1980s could not be sustained towards mid-1980s (see Annex Table A-1). A basic difficulty has been the inability to establish a more diversified economic base. In the mid-1980s, the country's economy still remains very much dependant on a few major agricultural commodities. The consequence of this structural weakness was that when the world prices of the few principal exports deteriorated beginning in 1981, balance-of-payments difficulties became a matter of serious concern. These threatened to disrupt the gains that had been made, as availability of external resources to maintain imports at levels necessary for development became a major constraint in sustaining the economic growth momentum (see Annex Table A-2).

Data on sectoral origin of GDP for selected years over the period 1961/62 to 1986/87 are given in Table 1. It reveals that little change in the structure of production has occurred over the past two decades. There is no real evidence of a shift of production away from agriculture towards industry. The relative changes in the share of agriculture might primarily be due to price fluctuations. The share of the processing and manufacturing sector in GDP has remained remarkably static at around 10.5 per cent.

A broader definition of agriculture and industry does not change the general picture outlined above. For example, the agricultural sector has often been defined to include agriculture proper, plus animal husbandry, fishery and forestry. The broader definition of industry includes mining, power generation and construction in addition to manufacturing. Adoption of the broader definitions would mean a rise in agriculture's share from 34.5 per cent in 1961/62 to 36.7 per cent in 1985/86. For industry the corresponding

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1/ Pyithu Hluttaw Law No.12, 1977.

Table 1. Distribution of GDP by sector of origin, 1961/62-1986/87, (selected years)
(percentage based on current prices)

	1961/62	1969/70	1973/74	1977/78	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87[a/]
Agriculture	26.0	27.2	28.0	26.8	28.9	29.2	29.4	28.7	28.2	27.9
Livestock and fishery	5.6	7.4	7.4	6.9	6.6	6.4	6.6	6.8	6.7	6.7
Forestry	2.9	2.6	2.2	2.3	2.2	2.2	2.0	2.1	2.1	2.1
Mining	1.3	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.5
Processing and manufacturing	10.5	10.7	9.8	10.6	10.2	10.2	10.1	10.3	10.3	10.7
Power	0.5	0.6	0.8	1.0	1.2	1.4	1.4	1.6	1.6	1.7
Construction	1.9	2.1	1.7	1.8	2.7	2.7	2.7	2.8	2.8	2.5
Services	22.0	23.0	24.4	25.4	25.7	25.8	25.7	25.7	26.5	26.5
Transportation	5.8	5.9	5.1	4.8	5.1	5.3	5.3	5.3	5.3	5.3
Communications	0.3	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.7	0.8
Financial institutions	1.1	1.1	1.7	2.5	4.1	4.0	4.0	4.1	4.1	4.1
Social and Administrative services	7.4	8.2	9.6	10.8	10.0	10.1	9.9	9.9	10.7	10.7
Others	36.7	32.8	31.6	30.9	27.3	25.8	26.7	26.4	26.2	26.0

Source: Ministry of Planning and Finance.

a/ Provisional.

increase would be from 14.2 per cent to 16.4 per cent. This increase, however, is mainly attributable to the rise in the share of power generation and construction.

Relatively high growth rates registered by the power sector in the 1970s were maintained in the early 1980s with an average annual growth rate of 12.5 per cent achieved during the Fourth Four-Year Plan period (1982/83-1985/86) [see Annex Table A-1]. Primary commercial energy sources in the country are oil, natural gas, coal and hydropower, which together represent 35 per cent of total energy consumption. Firewood and charcoal make up the remainder. Electric power accounts for 14 per cent of commerical energy and the Electric Power Corporation, the state enterprise responsible for installation, operation and maintenance of electric power facilities, generates 80 per cent of the total electricity supply.

Construction registered negative growth rates in the first half of the 1970s but expanded at a high rate of 21 per cent in real terms in the latter half, of that decade. This reflected increased activity of the state sector, and especially the Construction Corporation, in undertaking construction of industrial and infrastructural facilities such as factory buildings, roads, irrigation works, dams and power lines. During the Fourth Four-Year Plan it achieved an average annual growth rate of 5.4 per cent.

The low growth rate of output and income that characterized most of the 1960s and the first half of the 1970s resulted in low level of investment. The ratio of gross investment to GDP stood at about 10 to 11 per cent during 1970/71 to 1975/76. With the key role assigned to the public sector for promoting economic growth, it was also clear that the government had to assume the major responsibility for mobilizing resources for development, and consequently the public sector accounted for 75 per cent to 80 per cent of gross domestic capital formation in the country. However, despite the major role it was expected to play in capital formation, the ability of the government in mobilizing resources was constrained. There was a decline in public revenues from 25 per cent of GDP in 1965/76 to 11 per cent in 1975/76.

Measures were, therefore, adopted to counteract this trend. They were concentrated in two areas, namely to improve the performance of State Economic Enterprises (SEEs) and reform of the tax system. As for the tax system, reforms were initiated in 1976 that broadened the base, increased rates and improved administration through simplification of procedures. A major innovation was the replacement of several commercial and excise taxes with a new Commodity and Services Tax (CST). The CST was levied on all imports of the SEEs as well as on goods and services produced by them. The income tax on gross profits of SEEs was also substituted with a 20 per cent (later raised to 30 per cent) tax on net profits and the SEEs were further required to pay half of the profits they earned on exports to a newly established Export Price Equalization Fund (EPEF). The Fund is used to subsidize unprofitable exports and serves also as a source of revenue for the government. Improved taxation of private enterprises was affected through a new profit tax that had the notable feature of permitting presumptive assessment where accurate accounts do not exist.

By the late 1970s good overall economic performance generated largely by the improvement in agricultural production and greater efforts made towards mobilization of resources had resulted in higher rates of revenue collection as well as of capital formation.

Apart from taxes, attention was also directed at generating a larger current surplus from SEE operations. In implementing guidelines issued by the government to enable them to operate more independently and in a more businesslike way the SEEs - while their surplus generation remained weak - have been undertaking heavy capital expenditures, especially during the period 1977/78 to 1982/83. Their capital expenditures in current prices nearly trebled over this period. This in turn led to large overall deficits in the public sector (roughly 13 per cent of GDP in 1983). Domestic financing of the overall public sector deficit has taken the form of bank borrowing, which finances roughly half of the deficit. The remaining half has been met through external financing in the form of foreign grants and loans.

The role of foreign financing needs to be viewed in the context of developments in the overall balance of payments situation and the capacity of the country to service external debts. These are briefly presented below.

The Fourth Four-Year Plan (1982/83-1985/86) envisaged an annual rate of growth in exports in real terms of 16.1 per cent and that of imports at 12.5 per cent. Due to a sharp downturn in the prices of Burma's major exports, the export targets were not achieved and reliance had to be placed on external assistance to cover the shortfall in export earnings. In 1982/83, merchandise exports were able to finance only 42 per cent of merchandise imports (see Annex Table A-2). This situation improved somewhat thereafter - by 1984/85 merchandise exports accounted for a value of over 62 per cent of the merchandise imports.

Prospects for the major traditional exports remain uncertain and there is likelihood that strong balance-of-payments pressures will continue in the medium-term. These pressures have already resulted in significant cut-backs of imports. As consumer goods imports account for only 5 to 8 per cent of total imports the main burden of external adjustment has fallen on capital and intermediate goods that are needed to maintain the development programme.

The commodity structure of exports illustrates the heavy concentration on a few primary products. Rice accounts for around 42 per cent of total exports followed by teak with 21 per cent and pulses and minerals accounting for about 8 per cent each. A few other items such as animal feedstuffs, jute, hardwood and rubber make up most of the rest.

The primary commodities from Burma have found markets mainly in the Asian region. African countries buy around 13 per cent of Burma's exports and another 12 per cent have gone to the EEC. Japan has by far been the largest supplier of imports to Burma, with 39 per cent of the total. EEC is next in importance with 25 per cent. Other important suppliers are Eastern Europe, Southeast Asia, USA and The People's Republic of China.

While foreign exchange earnings from exports declined, expenditures on imports continued to grow from $695 million in 1980/81 to $885 million in 1982/83, a marked decrease followed thereafter: $610 million in 1983/84 and $648 million in 1984/85. The high level of imports was maintained to purchase

mostly capital and intermediate goods which together accounted for over 90 per cent of total imports. The amount spent on consumption goods such as consumer durables, food items, textiles and medicine, formed a relatively small proportion (about 5 per cent to 8 per cent) of imports during the first half of the 1980s. A large inflow of imported spare parts and intermediate goods is necessary for realizing high growth rates in the subsectors of manufacturing.

1.3 Overview of the manufacturing sector

The manufacturing sector in Burma is small, accounting for 10.7 per cent of GDP and employing 8.7 per cent of the country's labour force in 1986/87. However, the processing and manufacturing sector is assigned the task of transforming the Burmese economic structure from an agricultural country into an agro-based industrial one. The principal manufacturing activities are related to the processing of agricultural resources and petroleum refining.

Of the 42,454 factories and establishments in operation in 1986/87, 1,834 were state-owned, 719 co-operatives and 39,901 private enterprises. Although private enterprises account for 94 per cent of factories and establishments, around 91 per cent of private enterprises encompass factories which employ less than 10 workers each. Of the 39,901 private enterprises, 3,676 establishments representing hardly 1 per cent of the total employ 10-50 workers each. Of the 650 factories employing 50 or more workers, only 13 enterprises are privately-owned in 1986/87. Thus, the private sector is dominated by the small enterprises while almost all the large factories which employ more than 100 workers are state-owned.

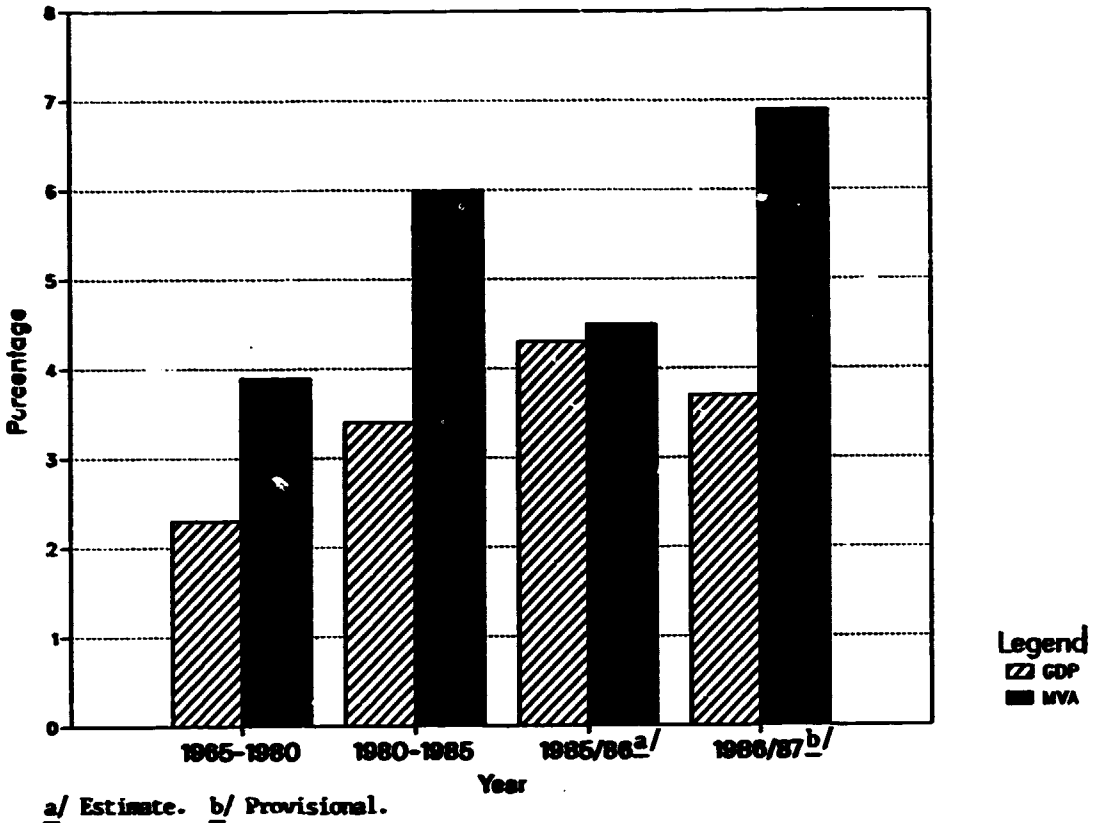
Food and beverages form the largest manufacturing subsector with a share of 71.5 per cent in manufacturing output in 1986/87. Other important subsectors are clothing and wearing apparel (6.3 per cent), industrial raw materials (5.6 per cent), mineral and petroleum products (3.8 per cent) and construction material (3.5 per cent). These five subsectors together accounted for about 90.7 per cent of total manufacturing output in 1986/87.

The private sector has been important, particularly in the food and beverages and clothing subsectors. It also has a substantial share in the gross output of construction materials and household products. On the other hand, the public sector plays the lead role in agricultural and manufacturing machinery and equipment, electrical products, transport equipment, printing and publishing. A large number of small enterprises are concentrated in subsectors such as food and beverages, clothing and household goods where the private sector has a substantial share of gross production.

The manufacturing sector did not play a pacesetting role in Burma's economic development during the last two decades due to its low base. Although the sector's rate of growth accelerated in the latter half of the 1970s and in the early 1980s, in conformity with generally improved economic conditions the rate of industrial growth did not on the average match the rate of growth of GDP.

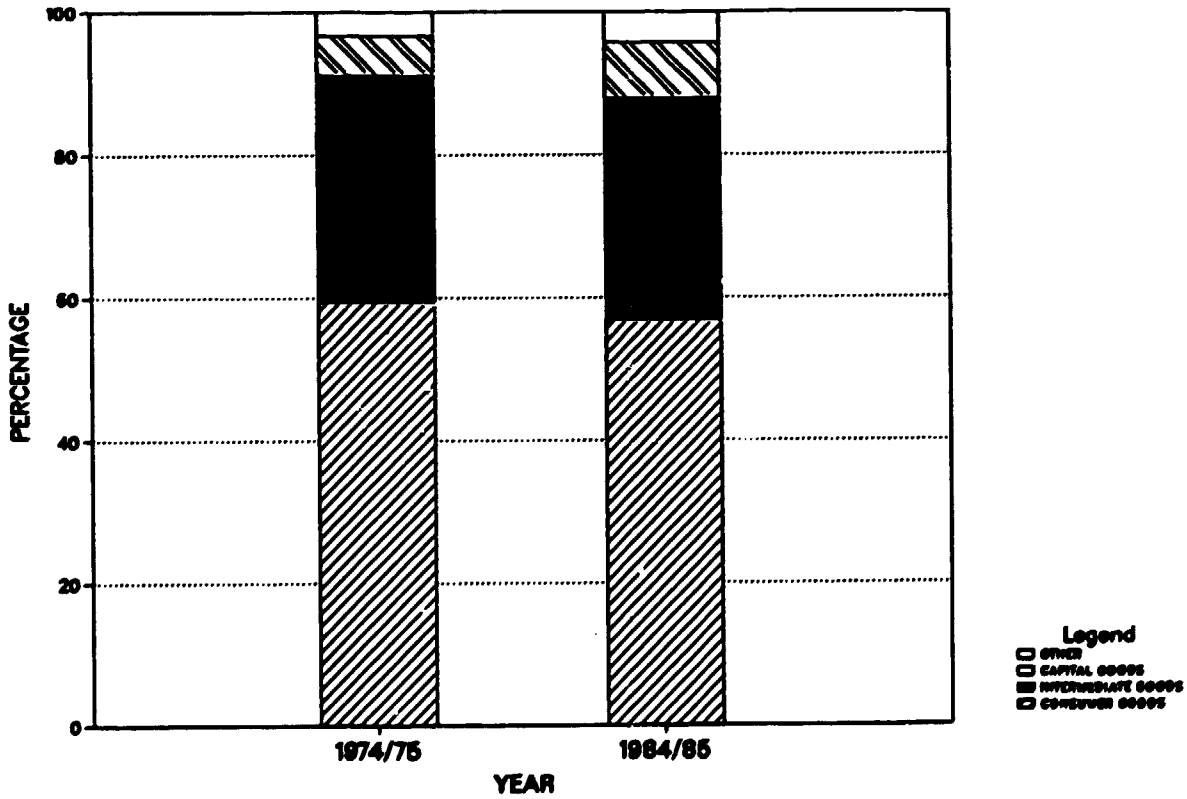
While MVA growth rates recorded marked upward growth trends in 1984/85 and 1986/87 the pace of manufacturing expansion is far below the envisaged targets. Although the manufacturing sector concentrates on import substitution, some increase in the export of manufactured goods occurred in recent years. Processed food, sugar, textiles and fertilizer products are sectors which would register increased manufacturing output when plants currently under construction become operational in 1987, 1988 and 1989.

REAL GROWTH RATES OF GDP AND MVA, 1965-1987
(In constant 1980 prices)



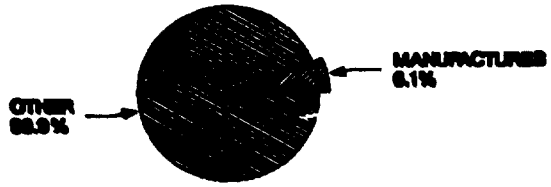
a/ Estimate. b/ Provisional.

COMPOSITION OF MANUFACTURING VALUE ADDED, 1974/75 AND 1984/85
(PERCENTAGE)

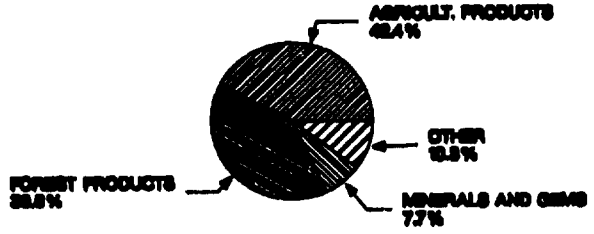


EXPORTS AND IMPORTS

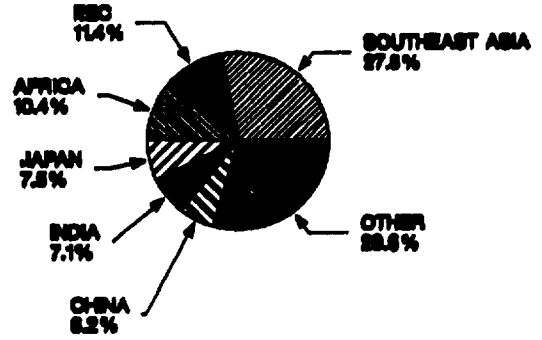
SHARE OF MANUFACTURES IN TOTAL EXPORTS (1977) a/



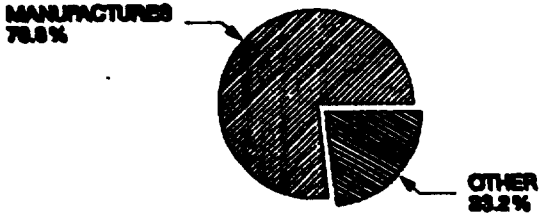
COMPOSITION OF EXPORTS (1985/86)



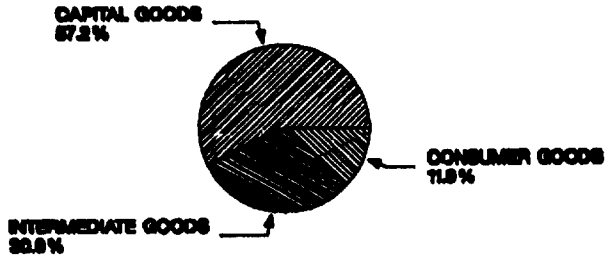
DESTINATION OF EXPORTS (1985/86)



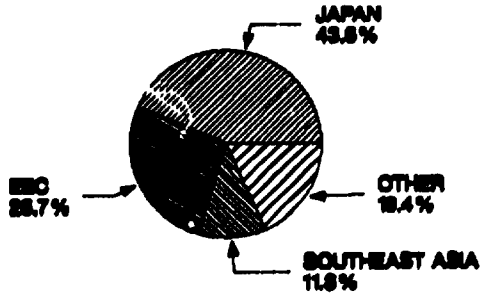
SHARE OF MANUFACTURES IN TOTAL IMPORTS (1977) a/



COMPOSITION OF IMPORTS (1985/86)



ORIGIN OF IMPORTS (1985/86)



a/ The latest available data.

2. STRUCTURE AND PERFORMANCE OF THE MANUFACTURING SECTOR[1/]

2.1 Growth and structural change

The manufacturing sector in Burma grew at an average annual rate of 3.4 per cent in the 1960s which was slightly above the rate of growth of GDP during the same period (Table 2). In the early 1970s manufacturing activities suffered sharp set-backs. The manufacturing sector recovered in 1974/75 and an accelerated pace of expansion continued until 1977/78 with an exceptionally high growth rate of 9.2 per cent recorded in 1975/76.

After two consecutive years of sluggish growth rates, manufacturing value added sustained above 7 per cent growth rate during 1980/81 and 1981/82. During the Fourth Four-Year Plan (1982/83-1985/86) the manufacturing sector recorded an average annual rate of 5.3 per cent. This was to a large extent due to the good performance in agriculture which provided raw materials to the processing industries which in turn account for the major share of manufacturing value added. A larger inflow of imported spare parts and intermediate goods that characterized these years permitted higher industrial capacity utilization. While the growth of MVA was less robust at the beginning of the Plan period - 5.3 per cent and 3.3 per cent in 1982/83 and 1983/84 respectively - it realized an upturn of 8.2 per cent in 1984/85 only to fall back to 4.5 per cent in 1985/86.

Table 2. Real growth rate of MVA and GDP, 1961/62-1986/87
(in constant 1969/70 prices)

Financial year	MVA	GDP
1961/62-1969/70[a/]	3.4	3.1
1970/71	3.3	4.1
1971/72	0.0	2.4
1972/73	-2.4	-1.0
1973/74	-2.4	2.6
1974/75	4.2	2.7
1975/76	9.2	4.2
1976/77	6.1	6.1
1977/78	6.9	6.0
1978/79	2.4	6.5
1979/80	3.9	5.2
1980/81	7.4	7.9
1981/82	7.5	6.4
1982/83	5.3	5.6
1983/84	3.3	4.4
1984/85	8.2	5.6
1985/86[b/]	4.5	4.3
1986/87[c/]	6.9	3.7

Source: Report of the Pyithu Hluttaw, various issues.
a/ Average annual growth rate. b/ Estimates. c/ Provisional.

1/ The Report to the Pyithu Hluttaw of the Financial, Economic and Social Conditions of the Socialist Republic of the Union of Burma defines the manufacturing sector as processing and manufacturing in 13 branches. Interpretations of data pertaining to the manufacturing sector in this Review refer to the 13 subsectors of processing and manufacturing activities.

According to provisional data for the financial year 1986/87 MVA grew by 6.9 per cent. Subsectoral growth rates of gross manufacturing output during 1986/87 were 4.7 per cent in food and beverages, 16.3 per cent in printing and publishing, 2.8 per cent in industrial raw materials, 8.1 per cent in mineral and petroleum products, 41.9 per cent in agricultural equipment, 346.8 per cent in machinery and equipment, 46.0 per cent in transport vehicles, and 7.8 per cent in miscellaneous goods.

The change in production of selected commodities in 1986/87 compared with that of 1985/86 was as follows (see Annex Table A-3): production of sugar increased from 54,140 to 63,170 tonnes, salt from 321,190 to 340,470 tonnes; gents', ladies' and children's longyi from 9.9 to 10.7 million units; bricks and tiles from 116.5 to 138.4 million units; cement from 434,590 to 570,600 tonnes; sheet glass from 3,890 to 7,000 tonnes; motor spirit from 69.42 to 76.90 million gallons; diesel from 100.28 to 108.72 million gallons, furnace oil from 45.04 to 50.38 million gallons, motorcars from 2,166 to 2,671 units; bicycles from 11,505 to 18,200 units; from 4,627 to 5,160 sets; tractors from 513 to 898 units; power tillers from 190 to 600 units and fertilizer from 280,600 to 366,500 tonnes.

The above trend in manufacturing output is corroborated by the indices of manufacturing output presented in Table 3. The fastest growing subsectors have been machinery and equipment, electrical goods, miscellaneous manufactures, industrial raw materials, transport vehicles, printing and publishing. However, with the exception of industrial raw materials, high growth rates were recorded by subsectors which had a low initial base. The larger subsectors, especially clothing, wearing apparel, minerals, petroleum and construction materials grew moderately. The impact of improved agricultural programmes can be visualized by the rapid growth of both industrial raw materials and food and beverages during the 1980s.

Several subsectors of manufacturing thus increased their levels of output in 1986/87. With a view to stepping up production, new materials and spare parts were imported in accordance with priority and availability of foreign exchange resources. To ensure adequate supply of domestic raw materials, disbursement of advance payments to farmers for industrial crops and expansion of cultivated land owned by the factories were also carried out. Yet another reason for the revival in industrial growth in 1986/87, though far short of the envisaged target of 11 per cent, was the programme of renovating, replacing and extending existing factories to increase capacity utilization. However, capacity utilization in state-owned industries based on imported raw materials declined in 1986/87 whereas that of industries based on domestic raw materials rose significantly.

Structural change in manufacturing could be seen in the context of change in the composition of gross output and value added in manufacturing. The processing and manufacturing sector is divided into 13 subsectors. Table 4 shows that the manufacturing sector is dominated by the food and beverages subsector, which increased its share of gross manufacturing output from 60 per cent in 1961/62 to 71.5 per cent in 1986/87. The processing of rice including the production of rice bran oil is by far the largest sector of the food industry. Another important sector is the production of cooking oils from peanuts, sesame seed and cottonseed.

Table 3. Index of manufacturing output by subsector, 1961/62-1986/87
(1969/70 = 100)

	1961/62	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87g/
Food and beverage	82.4	99.6	103.9	108.6	111.9	115.6	120.2	127.9	137.2	144.9	156.8	168.3	174.5	182.6
Clothing and wearing apparel	87.4	60.0	91.0	104.8	122.1	111.7	116.0	117.0	119.9	126.6	115.9	111.9	115.6	113.2
Construction materials	79.5	89.0	83.5	87.1	97.1	100.1	121.2	125.5	122.0	124.9	126.3	131.5	131.4	154.2
Personal goods	75.8	85.7	107.7	130.8	120.9	114.1	116.6	138.9	161.6	157.1	120.7	122.0	112.8	113.0
Household goods	34.5	72.2	74.2	94.9	95.7	98.4	91.7	149.1	157.8	200.8	160.4	231.4	212.1	207.3
Printing and publishing	42.6	85.2	135.1	140.5	172.8	184.1	193.0	195.6	209.5	244.2	265.3	313.8	257.8	299.9
Industrial raw materials	141.7	110.9	134.0	145.8	178.1	204.1	213.0	256.8	280.4	287.8	321.1	339.4	342.4	351.9
Mineral and petroleum products	71.7	106.4	105.2	115.2	123.6	128.2	124.2	128.7	130.1	133.9	122.7	132.3	128.4	136.8
Agricultural equipment		79.5	118.5	155.0	786.0	262.2	229.8	235.8	205.8	197.3	188.5	168.5	192.6	273.3
Machinery and equipment	67.4	106.5	34.8	17.7	24.8	21.7	23.9	151.6	70.2	148.6	154.8	101.0	119.8	415.5
Transport vehicles	18.9	71.2	74.5	102.5	160.6	164.7	172.7	169.5	207.1	230.9	224.4	245.7	258.3	377.1
Electrical goods	25.4	97.5	99.6	89.9	92.7	80.0	103.2	139.6	210.5	162 7	175.7	184.3	317.5	283.5
Miscellaneous	120.2	163.2	194.4	226.5	221.9	269.9	296.6	270.6	364.2	337.8	350.1	393.1	401.3	432.8
Total	82.4	94.6	103.6	111.0	119.0	122.2	126.5	135.6	145.5	152.0	157.7	167.8	172.4	182.7

Source: Report of the Pyithu Hluttaw 1986/87.
g/ Provisional.

The government of Burma is determined to modernize rice production. It plans to build six new rice mills, each capable of milling 33,000 tonnes of rice per year. Storage facilities with a total capacity of 84,000 tonnes are to be constructed and efforts to construct a plant for grading and mixing rice are under way. The government also endeavours to rehabilitate some 120 private mills to raise their total processing capacity to 580,000 tonnes a year. Edible oil forms the second most important item in the Burmese diet after rice. The production of oilseed crops encompass around 5.25 million acres, representing 20 per cent of the country's total cultivated area. However, inadequate storage, processing and distribution facilities often result in supply below apparent demand. The government has taken steps to boost edible oil production under a $70 million project with the support of the Asian Development Bank and UNDP. The project envisages contruction of 10 expeller oil mills and conversion of one existing oil mill into a solvent extraction plant.

Table 4 reveals that the share of clothing and wearing apparel in gross manufacturing output fell by more than 100 per cent over the period 1961/62-1986/87 with marked declines in recent years. The textile industry is made up of a few large-scale firms belonging to the State, of which few are integrated mills of international standard size. The main products of the textile industry are cotton fabrics. The textile industry also encompasses a large number of handlooms. As a result of shortage of raw cotton current capacity is underutilized.

Apart from food and beverages, clothing and wearing apparel and industrial raw materials the relatively important manufacturing products are mineral and petroleum products, which currently account for around 3.8 per cent of manufacturing output. Following the discovery of gas deposits in the Gulf of Martaban in 1983, Burma began to step up efforts to attract foreign capital to develop a gas-based project, which required an outlay of more than $1 billion. Although domestic oil supplies were increasing, they did not rise enough to allow the government to operate its oil refineries at anywhere near capacity levels. In consequence of lack of crude oil one refinery ceased to operate in 1984. Oil refineries have a total capacity of nearly 22 million barrels of crude oil a year. At present, oil reserves are estimated at 400 million barrels. According to the Ministry of Energy, oil production is running at around 26,000 barrels per day. Burma still needs to act soon to improve the energy-supply situation.

The composition of manufacturing value added measured in constant 1969/70 prices also reveals the predominance of the food and beverages sector in MVA (Table 5). Food and beverages form the largest industrial subsectors with a share of 39 per cent of total manufacturing value added in 1984/85. Other important subsectors were industrial raw materials (11.4 per cent of MVA), construction materials (10.0 per cent), mineral and petroleum products (9.7 per cent) and clothing and wearing apparel (9.4 per cent). These five subsectors together accounted for about 80 per cent of the total manufacturing value added in 1984/85. The most significant structural changes in Burmese industry since 1974/75 have been a decline in the importance of food and beverages, mineral and petroleum products and construction materials, concomitant with an increase in the sale of industrial raw materials, printing and publishing and transport equipment.

Table 4. Composition of gross manufacturing output, 1961/62-1986/87
(percentage)
(in current prices)

	1961/62	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87g/
Food and beverage	60.0	69.0	68.8	69.8	66.7	67.4	68.7	67.4	65.8	65.4	64.7	65.6	70.1	71.5	71.5
Clothing and wearing apparel	14.8	6.7	6.2	7.8	9.2	9.6	8.3	8.6	8.7	8.2	8.6	7.5	7.1	7.0	6.9
Construction materials	7.7	4.6	4.1	3.2	3.3	3.2	3.3	4.4	4.5	4.2	4.1	4.4	3.5	3.2	3.5
Personal goods	3.6	2.1	2.7	3.2	3.5	2.8	2.4	2.2	2.7	3.0	2.8	2.2	1.8	1.8	1.5
Household goods	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.6	0.6	0.7	0.6	0.6	0.5	0.5
Printing and publishing	0.7	1.0	0.9	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0
Industrial raw materials	3.4	4.0	4.1	3.8	4.4	5.2	5.3	5.4	6.1	6.3	6.5	6.7	6.1	5.8	5.6
Mineral and petroleum products	5.9	6.6	8.5	6.5	6.8	6.1	5.5	5.4	5.2	5.1	5.7	5.8	4.4	3.8	3.8
Agricultural equipment	0.0	0.6	0.3	0.3	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.3	0.3	0.4
Machinery and equipment	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.1
Transport vehicles	0.5	1.3	1.1	1.1	1.4	1.6	1.9	1.9	1.8	2.0	2.1	2.2	1.8	2.0	2.6
Electrical goods	0.3	0.7	0.6	0.6	0.7	0.5	0.5	0.5	0.7	0.8	0.7	1.0	0.7	0.9	1.0
Miscellaneous	2.9	3.1	2.3	2.2	2.1	1.7	2.2	2.3	2.2	2.8	2.6	2.2	2.6	2.2	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Report of the Pyithu Hluttaw, various issues.
g/ Provisional.

Table 5. Structure of manufacturing value added, 1974/85-1984/85
(percentages based on constant prices)

	1974/75	1980/81	1981/82	1982/83	1983/84	1984/85a/
Food and beverages	42.5	37.8	36.5	36.8	39.0	38.8
Clothing and wearing apparel	8.8	11.5	11.0	11.2	10.4	9.4
Construction materials	12.3	11.4	10.4	10.2	10.2	10.0
Personal goods	5.3	5.4	5.8	5.3	4.1	4.3
Household products	0.7	0.8	0.8	1.0	0.9	0.9
Printing and publishing	2.1	2.7	2.8	3.1	3.1	3.4
Industrial raw materials	6.4	9.6	10.2	10.1	11.2	11.4
Mineral and petroleum products	13.1	9.4	9.5	9.3	8.7	9.7
Agricultural equipment	0.9	1.8	1.4	1.3	1.2	1.1
Manufacturing machinery & equipment	0.4	0.3	0.1	0.3	0.3	0.3
Transport equipment	3.4	4.4	5.1	5.6	5.3	5.3
Electrical products	0.8	0.7	1.0	0.8	0.8	1.1
Miscellaneous	3.3	4.2	5.4	5.0	4.8	4.3
Total industrial sector	100.0	100.0	100.0	100.0	100.0	100.0

Source: Ministry of Planning and Finance, Planning Department.
a/ Revised estimates.

2.2 Performance and efficiency

Underutilization of existing capacity constitutes a major problem facing the country's manufacturing sector. Several factors affect capacity utilization such as shortage of inputs, technical problems and weakness in organization and management. During recent years a certain improvement in the supply of inputs has been brought about through increased agricultural production and greater availability of intermediate goods and spare parts through imports. The government endeavours to raise capacity utilization as well as the level of production and productivity through better organization and management of the industrial entities.

The lack of an integrated industrial structure appears to be one of the major constraints to a more efficient utilization of existing productive capacity. Although no quantitative evidence exists on linkages, it is apparent that the performance and efficiency of the manufacturing sector is far below the government's envisaged targets. It is striking to notice that on the one hand low capacity utilization in the small investment goods sector is due to lack of demand for domestically produced goods while on the other hand, other industries fail to utilize the installed capacity fully for want of spare parts and imported inputs.

The production of intermediate and capital goods is mostly carried out at a fairly small-scale level and capacity is often underutilized. The production of cement was revitalized in the early 1960s with the restoration of a plant at Thayetmyo. The only plant of any importance in iron and steel is at Ywama mill built in the late 1950s.

The performance of agriculture-, fishery- and forestry-based industries has been seriously hampered by irregular supply of raw material inputs. Increases in agricultural production in some years, however, helped the agro-industries recover from sharp setbacks. There is scope for further improvements provided that a higher share of investment is allocated to the primary sector to ensure continuous supply of raw materials by removing infrastructural and distribution bottlenecks. The major impediments to rapid expansion of the mining- and energy-based industries are lack of equipment and spare parts, shortage of skilled manpower and the poor transport network.

The overall performance of manufactures by end-use categories can be seen from the sales of selected products manufactured by the SEEs (Table 6). The sales of SEEs increased by 4.5 per cent in 1984/85, but fell sharply in the two consecutive years. The overall performance appears to be modest during 1983/84-1986/87. Above average sales were recorded for basic commodities over the four-year period ending in 1986/87. Sales of textiles and wearing apparel rose markedly in 1984/85 and 1985/86, but fell sharply in 1986/87 to the level achieved in 1983/84. The intermediate goods sector experienced an absolute decline in sales in recent years, falling consecutively from K1,500.6 million in 1983/84 to K1,232.0 million in 1986/87. However, expectional growth rate in sales was recorded by the intermediate goods for marine and salt industries in 1984/85, which, however, started from a very low base. All branches of capital goods industry experienced some fluctuations with a general increase (excepting the sales of fishing equipment) in 1984/85, and with overall sales growing at an average annual rate of 3.7 per cent (in current prices) during 1983/84-1986/87. The above interpretations of data presented in Table 6 assumes that the rate of change in prices was similar for all products.

The most important sector in terms of employment creation has been the public sector which has more than doubled its number of workers over the last twenty years. However, the private and co-operative sectors are still important in labour absorption, because manufacturing activites undertaken by private enterprises are generally more labour-intensive. The government is constantly reassessing the role of the private sector in this respect.

The stagnation of labour productivity in manufacturing has been matched by a moderate increase in money wages and a substantial decrease in real wages leading to significant deterioration in the purchasing power of wage earners. Nevertheless, labour supply to the industrial sector seems to be fairly elastic. Considerable wage differentials exist within the manufacturing sector.

Improving the operational efficiency of public enterprises is of concern and assumes added significance due to the major role assigned to the SEEs to promote economic development. Consequently, the less satisfactory economic performance of the SEEs in general during the 1960s and in the early 1970s was a matter of deep concern and a major effort was made in 1975 to reverse this trend through the implementation of a set of Guidelines for operating on commercial lines to be used by all state economic organizations in the various ministries. The main thrust of the Guidelines was that state enterprises should function less like government departments and more like business enterprises. For this purpose the Guidelines aimed at relaxing some of the more rigid controls exercised by supervising ministries on the public enterprises under their jurisdiction. The Guidelines also provided a system of incentives to increase managerial and worker efficiency and instituted a new financial system to introduce greater financial responsibility on the part of public enterprises.

Table 6. Sales by state economic enterprises, 1983/84-1986/87
(in million kyat, at current prices)

	1983/84	1984/85	1985/86	1986/87a/
Consumer goods	4,845.6	5,235.4	5,144.3	4,724.2
Basic commodities	2,090.5	2,183.3	2,129.1	2,201.9
Toilet, personal, household and sport goods	375.9	438.3	372.7	346.3
Textiles and wearing apparel	488.7	661.2	605.3	488.0
Books and stationery	163.4	216.1	230.6	101.3
Household medicine and others	206.3	203.6	177.0	194.2
Household electrical goods	118.3	86.6	87.6	80.6
Other consumer and household goods	1,402.5	1,446.3	1,542.0	1,311.9
Goods for inter-industry use	1,500.6	1,405.9	1,260.3	1,232.0
Equipment for marine and salt industries	3.7	6.7	4.3	1.7
Yarn and dyes	190.6	124.4	127.0	50.6
Printing matters, photographic stores and office equipment	104.6	89.3	69.8	56.0
Vehicles, machines, construction materials and electrical goods	315.3	286.6	277.7	168.3
Industrial raw materials, medicines, agricultural goods, minerals and petroleum products	886.4	898.9	781.5	955.4
Capital goods	625.0	645.3	629.7	697.9
Fishing equipment	20.6	14.6	15.6	15.1
Machinery and vehicles	33.9	34.1	47.5	44.3
Construction materials and other	570.5	596.6	566.6	638.5
Total	6,971.2	7,286.6	7,034.3	6,654.1

Source: Ministry of Planning and Finance.

a/ Provisional.

Before 1975, the current and capital expenditures for SEEs were allocated each year from the government's central budget. With the implementation of the Guidelines, this system was abandoned and the budget of each SEE was separated from the central budget. Thus, each SEE became responsible for its own financing and was expected to meet its current expenditure out of its current revenues. At the same time each SEE was required to use its current surplus either to accumulate non-interest bearing deposits at the Myanma Economic Bank (MEB) or to purchase treasury bills that earn one per cent interest. Subject to predetermined budgetary ceilings, SEEs were also permitted to obtain the following types of loans from the MEB: (a) working capital needs at 8 per cent interest and one year maturity; (b) investment at 5 per cent interest and 10 years maturity; and (c) financial loans at 8 per cent interest and one year maturity which provide a roll-over facility for enterprises facing difficulties in meeting debt service payments. This financial arrangement was envisaged to introduce a system of self-financing for the SEEs as a whole as deposits from cash-surplus SEEs were expected to be recycled through the MEB to cash-deficit SEEs.

Provision of incentives to workers and managers took the form of granting payments under the Bonus Scheme. The award of bonus under the scheme as well as the evaluation of performance of the SEEs were based on two criteria namely: (a) the production target; and (b) the operating ratio. The production target was set in financial terms for each public enterprise at the beginning of the fiscal year and prices were assumed not to change over the year. The operating ratio is defined as a ratio of operating cost over operating revenue.[1/] Eligibility for receipt of bonus is contingent upon fulfilling the production target and the prescribed operating ratio for each SEE. There is a further stipulation that the bonus fund must not exceed 50 per cent of the net current surplus. Aside from the Bonus Scheme, other material incentives were also provided to increase productivity. These were pay-incentives based on production norms and provision of essential goods at ex-factory prices.

As for greater delegation of authority to the enterprises, key decisions such as the size of the labour force, the level of investment, foreign exchange allocation and setting of product prices were still vested in the respective ministries. However, with the implementation of the Guidelines enterprises had greater freedom to vary their product mix to introduce new products and to procure goods and services from the private and co-operative sectors when the state sector was unable to provide them. Formation of management committees of 5 to 9 members composed of representatives of both management and labour had also improved opportunities for greater dialogue within the enterprises.

Although the Guidelines served useful purposes and focused attention on a crucial problem, they had not been able to generate the necessary current surpluses from the SEEs to finance their own investment programme. The capital expenditure of the SEEs in recent years had been financed largely through borrowing from the MEB.

1/ Operating cost does not include financial charges.

An important consideration in generating a higher current surplus by the SEEs is related to the system of pricing SEE products. Prices of goods produced by the public enterprises are based on the average cost of production and distribution with an added margin for profit. The profit margin calculated as a percentage of cost varies among products with luxury items qualifying for a higher margin than essential goods. Price increases have to be approved by the Economic Co-ordinating Committee. Lack of sufficient flexibility for upward price adjustments to take account of rapidly rising costs, especially of imported inputs, has been reported as causing financial difficulties for many SEEs and dampened the incentive to increase production leading to shortages and rationing. These in turn encourage the development of the unofficial market where domestically produced goods supplemented by illegal imports are sold at prices substantially above the official price level. Hence, profits that might have been captured by state enterprises by raising prices have been siphoned off to illegal private traders in the form of a scarcity premium.

Increasing industrial production through fuller utilization of existing capacity seems highly desirable at the present time. Several factors affect capacity utilization such as the lack of demand, shortage of inputs, technical problems and weaknesses in organization and management. For some SEEs that are producing consumer items, low capacity utilization is likely to be caused by lack of demand. For them it will be necessary to reorient their production and product mix towards those goods that cater to the preferences and tastes of the consumers.

The issue of raising capacity utilization as well as production and productivity through better organization and management of the public sector industrial establishments is a matter of more general concern to which not only Burma but many other developing countries have devoted considerable attention. UNIDO has been active in this area and studies and programmes have been undertaken to raise the efficiency of public enterprises and the role they can play in the economic development process. Assistance in evolving appropriate policy measures and programmes to redress some of the major areas identified in the Guidelines such as granting greater autonomy to the SEEs, establishment of appropriate efficiency criteria and introducing an effective system of incentives for managers and workers would help overcome some of the constraints hindering progress in the public sector industries. Increasing manufactured exports can also help imporve the performance and efficiency of the manufacturing sector. This is dealt with in the next section.

2.3 Trade in manufactured goods

Manufactured exports have as yet not emerged as a major factor in Burma's foreign trade. Currently, they account for around 6.1 per cent of the country's total exports. Manufactured exports consist mostly of textile products, leather, cement, a few pharmaceutical products such as crude glycerine and alcohol and several petrochemical products such as petroleum coke, aviation fuel and naphta.

Since the processing and manufacturing sector (as defined in the national documents) encompasses even low degree processing activities, it is useful to look at the export profile in the context of a broad definition of manufactured exports. Table 7 shows that agricultural products accounted for 42.4 per cent of the country's total exports in 1985/86. The second most

important export item comprises forest products accounting for 39.6 per cent in 1985/86. Minerals and gems rank third in the order of importance by contributing 7.8 per cent total exports followed by animal and marine products (3.9 per cent), re-exports (3.3 per cent) and other products (2.9 per cent).

Table 7. Exports[a/] by type of commodity, 1983/84-1986/87
(in million kyat)

Type of commodity	1983/84	1984/85	1985/86[b/]	1986/87[c/]
Total domestic exports	3,372.6	3,133.1	2,566.1	...
Agricultural products	1,778.1	1,388.8	1,126.0	...
Animal and marine products	92.8	136.1	104.8	...
Forest products	919.4	1,067.5	1,051.0	...
Minerals and gems	502.9	472.5	205.9	...
Others	79.4	68.2	78.4	...
Re-exports	46.9	61.4	87.8	...
Total exports	3,419.5	3,194.5	2,653.9	2,925.1

Source: Ministry of Planning and Finance.

a/ Exports on shipment basis.
b/ Actual. c/ Provisional.

Exports rose from K2,654 million in 1985/86 to K2,925 million in 1986/87, representing 68.3 per cent of the target set (K4,282 million) for the Annual Plan (1986/87). The shortfall was primarily due to the fall in prices of major export commodities. A quantitative comparison of exports of some important commodities between 1985/86 and 1986/87 shows that rice exports rose from 520,000 tonnes to 750,000 tonnes, broken rice from 61,000 to 150,000 tonnes maize from 22,000 tonnes to 60,000 tonnes, refined silver from 263,000 oz to 650,000 oz, and liquified petroleum gas from 3.1 thousand tonnes to 5.0 thousand tonnes. However, the unit value of all major export items declined in varying degrees as a result of the slump on the world market.

In very broad terms the major export prospects in the medium- to long-term apart from rice are for pulses and livestock feeds. Exports of pulses consist mostly of black gram (matpe) and rice bean. According to official estimates some 150,000 tonnes of pulses may be available for export by 1990. However, Burma will remain in competition with other countries in the international market for pulses. Japan is a major buyer, which has very particular quality requirements. Animal feed exports consist chiefly of rice bran oil cake, rice bran, groundnut oil cake, sesame oil cake and cotton seed oil cake. There seems to be no good reason why Burma should not be able to increase its share of international pulses and livestock feed trade with increased attention to quality and reliability of supply.

The major portions of the country's imports consist of vital inputs to the industrial sector, namely capital goods, which account for more than 55 per cent of total imports. Raw materials and spares for inter-industry use constituted 30.9 per cent imports in 1985/86 while the share of consumer goods in total imports accounted for around 12 per cent in the same year (Table 8).

Table 8. Imports[a/] by type of commodity, 1983/84-1986/87
(in million kyat)

Type of commodity	1983/84	1984/85	1985/86[b/]	1986/87[c/]
Consumer goods	357.3	424.5	572.2	...
Durable goods	124.4	110.9	273.0	...
Foodstuffs	76.7	112.9	63.7	...
Textiles	29.7	17.5	61.5	...
Medicines and pharmaceuticals	80.7	97.3	121.9	...
Other consumers goods	45.8	85.9	52.1	...
Raw materials and spare for inter-industry use	1,648.2	1,780.7	1,484.7	...
Raw materials	923.1	1,240.5	981.8	...
Fuel		2.4	0.3	...
Tools and spares	725.1	537.8	502.6	...
Capital goods	3,172.8	2,806.1	2,741.3	...
Construction materials	550.2	756.5	505.1	...
Machinery and equipment	2,294.1	1,577.1	1,789.3	...
Transport equipment	177.7	365.7	303.3	...
Other capital goods	150.8	106.8	143.6	...
Commodity unspecified	19.0	29.9	3.8	...
Total	5,197.3	5,041.2	4,802.0	4,512.7

Source: Ministry of Planning and Finance.

a/ Imports on arrival basis.
b/ Actual.
c/ Provisional.

Priority has been accorded to the imports of capital goods required for the on-going and new projects, intermediate goods for smooth running of the existing industries and essential consumer goods. The escalation in import prices coupled with the fall in export earnings led to a deficit of K1,587.8 million in the balance of trade in 1986/87. In spite hereof, essential raw materials and capital goods continued to be imported in consonance with the level of investment required for maintaining smooth operation of existing productive enterprises. In view of the resource constraints sustained efforts are being directed towards effective utilization of imported commodities in order to improve domestic production and efficiency. The share of imports in apparent consumption was 100 per cent in a large number of products and above 100 per cent in few products such as non-cellulous staple and tow (112 per cent), wood pulp, sulphate and soda (104.6 per cent) in 1981-83 (see Annex Table A-4).

2.4 Towards higher degree of industrial processing for export diversification and import substitution

The need to infuse greater dynamism into the industrial sector to achieve export diversification and import substitution is well recognized by the Burmese authorities. Burma is endowed with a variety of agricultural inputs for the food processing, livestock, wood and fishery industries. Higher degree of industrial processing of agricultural resources could increase the share of manufactured exports in total exports. With the country's population continuing its relatively rapid growth, the bulk of processed goods could be initially absorbed domestically. Significant import substitution opportunities are open in the short- and medium-term for oilseeds, sugar and cotton.

Inadequate storage facilities and poor milling standards have reduced the quality of rice so that it sells at a price on the world market which is 20 to 25 per cent below other major exporters such as Thailand. Low quality further restricts markets to poor neighbouring countries and to African consumers. Currently, neighbouring countries are becoming more self-sufficient in rice and most African countries are facing financial difficulties. These facts point to the need to aim at increasing the competitive power in the quality market for rice through reorienting production and procurement prices towards varieties that are attractive on the world market as well as improving quality standards through better storage, milling and handling practices. Increasing storage capacity and updating milling machinery and equipment have received much emphasis in recent years. Thus, IDA and ADB have granted loans amounting to $23 million and $16 million, respectively, to build new permanent storage facilities, rehabilitate old facilities, provide better pest control and improve handling and transport services. Similarly, ADB has been active in the rice milling area and has extended a credit of $17 million to establish new facilities and to renovate old mills. Twenty medium-sized mills of 6 tonnes per hour capacity are reported to be under construction of which several have already been completed.

Burma's rice milling capacity is estimated at about 2,000 tonnes per hour. Of this, the Agricultural and Farm Produce Trade Corporation (AFPTC) owns only 5 per cent and reliance has to be placed on contractual arrangements with private millers to process government procured paddy. Eighty-five per cent of available milling capacity is estimated to consist of mills that depend on husk-fired steam boilers with half of them over 50 years old. Consequently, there is growing concern with regard to the lack of renovation and maintenance of these old mills. Under present circumstances the private sector is not in a position to redress the situation. It represents one area in acute need of government assistance and support. Of the 900 mills contracted by AFPTC, tentatively 180 mills have been identified as possible candidates for rehabilitation. It appears that in the absence of rehabilitation millers would lack the technical capacity and incentives to mill paddy at higher grades.

Efforts are under way to increas edible oil production for domestic use. A new project envisages construction of 10 expeller oil mills and conversion of one existing oil mill into a solvent extraction plant. The ADB is providing support with a $35 million interest-free 40-year loan to cover the foreign exchange cost of the project.

Burma has the potential for developing a modern marine fishing industry and for a thriving inland-water fishing industry. According to an ADB estimate, Burma possesses around 20 million acres of inland-water available for fishing. However barely 10 per cent has been exploited so far. A well-developed fishing industry is a national need both to boost fish production for domestic consumption and export. The progress achieved in the sector has been largely due to the efforts made by the People's Pearl and Fisheries Corporation (PPFC) - the state enterprise in the sector - in attracting bilateral and multilateral assistance in order to augment its fleet of fishing trawlers, and to improve transport, cold storage and processing facilities. In 1984/85 the PPFC owned and operated 72 trawlers and 58 carriers. It has also been distributing fishing nets and equipment to co-operatives. Fish consumption is an important source of protein to the local consumers and has a good potential as a foreign exchange earner through export of fish varieties that are attractive in foreign markets such as prawns and lobsters. Fish export is of recent origin in Burma and with only about 2 per cent of the total catch being exported, there is considerable scope for expansion.

The downstream activities of the forestry sector are quite limited. The country has three plywood and veneer mills, a factory for production of furniture and flooring products and a bamboo-based pulp and paper mill. Except for flooring products such as teak parquet, most of these products are sold on the local market. In accordance with the government policy of exporting teak in a more processed form efforts are being made to export furniture by improving product quality and marketing. The fact that the current annual production level of teak may have reached the annual allowable cut (AAC) has spurred greater interest in better utilization of available supplies.

Sawmilling of teak is reserved for the Timber Corporation and only custom resawing is permitted for the private sector. The government has 18 sawmills, and as in the case of rice mills, most of them were established before independence. It is estimated that about 62 per cent of their capacity is now over 40 years old. The mills are inefficient and due to outdated technology the recovery rate is low and a high percentage of wood is wasted. Due to milling problems, the best teak is exported as logs and lower grades are exported as sawnwood. The lowest grades of teak sawnwood are sold on the local market.

Government programmes in the mineral sector have concentrated on rehabilitating old tin/tungsten and silver/lead/zinc mines and exploiting known reserves of these and other minerals such as copper. No new large mining operations involving new deposits have taken place over the past decades. The Federal Republic of Germany, Japan, USSR, Canada and the World Bank have provided assistance to the government's efforts in the mineral sector and UNDP has provided technical assistance through several projects in exploration, feasibility studies and training.

Although the creation of a capital goods sector remains a long-term objective, the initial stress seems to have lost its vigour. What Burma's industrial sector needs today is the creation of backward and forward linkages rather than a shift in priority to other sectors. Priority given to resourced-based industrialization is likely to produce more positive and

immediate effects on the rate of growth considering the rich endowment of food, industrial raw materials, minerals and energy resources. High priority would also need to be given to increasing the level of industrial processing to achieve the basic aim of transforming an agricultural economy into an agro-based industrial one.

2.5 Investment and ownership patterns

The existing 55 large public enterprises cover all areas of economic activity from agriculture to industry, banking, mining, construction, transportation and trade. As a group, the State Economic Enterprises (SEEs) account for 75 per cent of total value added in the public sector and undertakes 60 per cent of total capital formation in the country.

The relative shares of the state, co-operative and private sectors in gross value of industrial production are presented in Table 9. It shows that the private sector has been important particularly in the food, beverages and clothing subsectors. It also has a substantial share in the gross output of construction materials and household products. On the other hand, the public sector plays the lead role in agricultural and manufacturing machinery and equipment, electrical products, transport equipment, printing and publishing. A large number of small enterprises are concentrated in subsectors such as food and beverages, clothing and household goods where the private sector has a substantial share of gross production. For example, of 13,979 establishments in the food and beverages category in 1986/87 13,359 were listed in the private sector (see Annex Tables A-5 and A-6).

The share of the private sector in manufacturing value added has increased significantly during the last few years - from 37.9 per cent in 1982/83 to 42.6 per cent in 1985/86. One major contributing factor to this development would seem to be the growth of the food industries sector in which the private sector is predominant.

It is evident from Table 9 that co-operative enterprises started to emerge in several subsectors of manufacturing in the early 1980s. However, their share in manufacturing output fell from 3.6 per cent in 1971/72 to 3.3 per cent in 1983/84. Since then co-operative enterprises in manufacturing recorded a steady but slow increase in their share of total manufacturing output and by 1986/87 they accounted for around 6 per cent of manufacturing output.

The largest share of public investment was allocated to the manufacturing sector during the Plan periods with a view to transforming the economy from an agricultural society to an agro-based industrial economy. However, the performance has been uneven limiting the role assigned to the manufacturing sector. It appears necessary, therefore, to revitalize the country's small-scale industries to foster the process of resource-based industrialization and to define the role of the private sector more clearly with a view to making it a more efficient participant in industrial development.

Table 9. Relative share of industrial subsectors in total gross value of industrial production, 1971/72 and 1983/84-1986/87
(percentage based on 1969/70 constant prices)

	1971/72				1983/84				1984/85				1985/86				1986/87[a]			
	State	Co-op.	Priv-	Total	State	Co-op.	Priv-	Total	State	Co-op.	Priv-	Total	State	Co-op.	Priv-	Total	State	Co-op.	Priv-	Total
Food and beverages	29.0	-	71.0	100	26.2	2.9	70.9	100	23.9	3.2	72.8	100	21.5	3.7	74.8	100	21.7	7.1	71.2	100
Clothing and wearing apparel	25.3	27.7	47.0	100	35.6	12.0	52.4	100	34.1	10.6	55.3	100	30.0	13.1	56.9	100	23.2	11.5	65.3	100
Construction materials	62.2	0.3	37.5	100	59.5	3.0	37.5	100	56.0	5.5	38.5	100	60.7	3.1	36.2	100	59.3	7.4	33.3	100
Personal goods	87.3	-	12.7	100	88.5	0.7	10.8	100	87.1	0.9	11.8	100	86.5	1.5	12.0	100	85.3	1.4	13.3	100
Household products	76.9	-	23.1	100	56.7	2.2	41.1	100	54.2	0.4	45.4	100	53.0	0.4	46.5	100	39.3	0.4	60.3	100
Printing and publishing	92.0	-	8.0	100	94.0	5.6	0.4	100	96.0	3.6	0.4	100	89.0	7.1	3.9	100	92.8	3.0	4.2	100
Industrial raw materials	89.5	-	10.5	100	80.4	0.2	19.4	100	76.3	0.2	23.5	100	79.8	0.2	20.0	100	79.6	3.0	4.2	100
Mineral and petroleum products	95.2	-	4.8	100	86.5	0.8	12.7	100	86.0	1.0	13.0	100	85.8	1.1	13.1	100	85.8	1.3	12.9	100
Agricultural equipment	100.0	-	-	100	100.0	-	-	100	100.0	-	-	100	100.0	-	-	100	94.9	-	5.1	100
Manufacturing machinery & equipment	100.0	-	-	100	97.9	-	2.1	100	92.4	1.8	5.9	100	97.6	1.5	0.9	100	97.6	2.0	0.4	100
Transport equipment	77.9	-	22.1	100	87.5	-	12.5	100	87.5	0.1	12.4	100	91.1	0.2	8.7	100	88.2	0.2	11.6	100
Electrical products	90.1	-	9.9	100	99.1	-	0.9	100	98.3	-	1.7	100	99.2	-	0.8	100	98.8	-	1.2	100
Miscellaneous	11.1	-	88.9	100	72.8	2.5	24.7	100	74.1	3.3	22.6	100	73.8	4.4	21.8	100	77.3	2.4	20.3	100
Total	41.6	3.6	54.8	100	42.5	3.3	54.2	100	40.5	3.5	56.0	100	39.5	3.9	56.6	100	39.3	6.0	54.8	100

Source: Report to the Pyithu Hluttaw, various issues.

a/ Provisional.

2.6 Small-scale industry development and reactivation of the private sector

Small-scale industries and private manufacturing enterprises are the main suppliers of mass-consumer goods and as such the performance of these enterprises is very important in determining Burma's future course of industrialization. As noted above, the private sector plays an important part in the industrial sector. A step to revitalize the private sector's role in the economy was taken with the adoption of the "Right of Private Enterprise Law" in 1977. Aside from delineating areas for private participation, the Law provided assurances against nationalization of registered private enterprises during the Twenty-Year Plan period (1971/72-1990/91) and that if nationalized, appropriate compensation would be given.

In the industrial sector the Law provided a list of areas where private activity is permitted but also stipulated that firms must be registered. Industries are grouped into three categories for registration purposes as follows: (a) industries using local raw materials are to be registered with local authorities at the Township level; (b) industries using a combination of local and imported raw materials require the approval of authorities at the Divisional level as well as of the ministry concerned; and finally (c) industries that use mainly imports require the approval of the Cabinet. Although the Law has been adopted, detailed operating procedures to be worked out by the ministries concerned have not made much progress, and so far it has not had a significant impact on the private sector.

Over the past few years the government has provided technical assistance, imported inputs and credit to farmers who are smallholder private cultivators. The government has also shown substantial interest in expanding the activity of the co-operative sector in processing, transport and marketing. However, no government support has been given to the private sector outside of agriculture. Hence, private enterprises in the industrial sector had no access to official credit for importing inputs and relies on the informal sector and the unofficial market to meet their requirements. Revitalization of the private sector could be through granting permission to operate in certain identified areas, as well as access to official credit and imported inputs as banking institutions and foreign trade are in the public sector.

Policies related to the development of small-scale industries as contained in the 20-Year Long-Term Plan include the following:

(i) to set up industrial establishments based on the utilization of natural resources and agricultural raw materials;

(ii) to set up industries to produce machine-tools and spares for existing workshops and factories;

(iii) to develop methods for substituting imported raw materials;

(iv) to allow private ownership for small-scale industries utilizing indigenous raw materials; and

(v) to encourage co-operative and private enterprises to produce export items such as arts and crafts, souvenirs, silver-wares and forest products and to help such small-scale industries for getting raw materials and equipments.

The above policy pronouncements seem to delineate resource-based industrialization strategy with greater participation by the small-scale and private enterprises. However, progressive expansion of the private sector re ·ires more positive policy measures particularly in the field of institutional credit in securing input provision and in having market outlets for their products.

3. POLICIES, PLANS, INSTITUTIONS AND RESOURCES FOR INDUSTRIAL DEVELOPMENT

3.1 Industrial development policies and plans

With the formulation of the Twenty-Year Long-Term Plan (1971/72-1990/91) a considerable change occurred in Burmese development strategy. The strategy prior to that could be roughly summarized as being based on a strictly self-reliant development with priority being given to the fulfillment of the needs of the domestic market. Thus, very little support was provided to the sectors producing for export while very large support was given to the creation of an industrial structure. Within industry a large share of resources were allocated to the creation of a capital goods sector necessary for a self-sustained growth.

The Twenty-year Long-Term Plan reviewed such ambitious strategy and recognized the difficulties in generating the amount of resources required for achieving self-sustained growth. The sectors with an immediate growth potential had been overlooked. Consequently, without changing the long-term objective of laying the economic, social and political foundations of socialism the Twenty-year Plan stresses the need for a more sustained growth through reliance on foreign trade and reinstatement of material incentives for the private sector with the over-riding specific objectives being attuned to the basic objective of transforming the Burmese economy from agricultural to an agro-based industrial economy.

The industrial sector is expected to emerge as the most dynamic sector and to expand in real terms at an average annual rate of 9.4 per cent compared with 5.9 per cent set for GDP and 4.8 per cent for agriculture during the twenty-year period. As a result the share of the processing and manufacturing sector in GDP is expected to rise to 22.8 per cent by 1990/91.

Accordingly, the largest share of public investment has been allocated to the processing and manufacturing sector. It absorbed 36 per cent of total government investment outlay in the Third Four-Year Plan (1978/79-1981/82) and met the target share of investment set for that Plan. In contrast, with a target of 27.3 per cent of total public investment outlay established in the Third Plan for the agricultural sector, actual implementation reached only 19.3 per cent. For the Fourth Four-Year Plan (1982/83-1985/86) a target of 30.1 per cent share of total public investment was set for the processing and manufacturing sector. Available statistics indicate that in actual implementation 35.3 per cent of public investment was allocated to the sector during the Plan period.

The programmes for implementing the Fifth Four-Year Economic Plan (1986/87-1989/90) were endorsed by the Fifth Party Congress of the Burma Socialist Programme Party in August 1985 to comprise the following tasks:

- to mobilize and utilize the people's strength in economic movements in creating a socialist economic system through extended programmes within the context of the objectives of the 20-Year Long-Term Plan;

- to thoroughly consider and scrutinize conditions relating to population growth and food production capacity and to take necessary measures in advance;

- to continue to promote exports and also to take steps to make the private services sector earn more foreign exchange;

- to boost production of fuel and energy for the production and service sectors in support of commodity production;

- to extend formation of State agricultural production organizations, agricultural production co-operatives and other production co-operative societies;

- to make arrangements for increasing investment capacity in the industrial sector while making arrangements for investments to boost production in the agriculture, livestock and fishery and forestry sectors;

- to systematically assess and review activities according to the situation in order to provide resources needed for implementing plans;

- to constantly work to minimize wastage, loss and damage in various production sectors;

- to achieve regional self-sufficiency and regional development plans; and

- to systematically draft and implement a manpower plan for full and most effective utilization of the people's abilities and strengths.

In the processing and manufacturing sector the major projects which had been started prior to 1986/87 and implemented during the Plan period are as follows:

Food Industries Corporation

- Yedashe Sugar Mill Project started in 1984/85 will be completed in 1987/88 and start production in 1988/89.

- Sagaing Flour Mill Project started in 1984/85 with a Danish loan was completed in 1986/87 and will produce 18,000 metric tonnes of flour yearly.

- No.2 Alcohol Distillery Plan Renovation Project was started in 1985/86 with OECF loan and is expected to be completed in 1989/90.

Textile Industries Corporation

- Shwedaung Textile Finishing Plan Project financed with IDA credit was started in 1984/85. It will be completed in 1989/90.

Ceramic Industries Corporation

- Chauk Ceramic Glassware Factory Project was started in 1982/83 and will be completed in 1988/89.

Metal Industries Corporation

- Steel Mill Renovation Project was implemented in 1984/85. Test run was carried out in 1986/87 and the production of steel bars, steel sheets, nail wire and barbed wire will be expanded from 1987/88 onwards.

Timber Corporation

- Wood Industries Project No.2 financed with a World Bank loan was started in 1984/85 and will be completed in 1988/89.

Paper and Chemical Industries Corporation

- The No.2 Paper Mill Project (phase III) was started in 1982/83. A preliminary engineering survey has been completed. Implementation of the project was continued in 1986/87 and will be completed in 1990/91.

Petro-Chemical Industries Corporation

- Liquified Petroleum Gas Manufacturing Project (pahse II) was started in 1982/83 and completed in 1986/87. The production will be started in 1987/88 and 30,000 metric tonnes of liquified petroleum gas will be produced yearly.

Agriculture and Farm Produce Trade Corporation

- Three units of 250 tonne Rice Mills Project were started in 1983/84. Implementation of the project was continued in 1986/87 and will be completed in 1988/89.

Textile Industries Corporation

- No.4 Garment Factory Project financed with a loan from the Republic of Korea was started in 1986/87 and will be completed in 1987/88.

Pharmaceutical Industries Corporation

- New Bran Oil Mill Project was started in 1986/87. It will be completed in 1988/89 and will produce bran oil, bran cake, industrial crude oil and soap stock.

In addition to the above mentioned ongoing and new projects other projects were also implemented according to the Plan targets in the processing and manufacturing sector.

During the Fifth Four-Year Plan (1986/87-1989/90) 29.0 per cent of public investment outlay is earmarked for the processing and manufacturing sector (see Annex Table A-7). Emphasis is to be put on the full capacity utilization of the existing factories and establishments. Under the current Five-Year Investment Programme (1986/87-1990/91) Burma attempts to implement several priority projects in the processing and manufacturing sector (see Annex Table A-8).

No incentives was provided for foreign investment and, in fact, foreign investment was banned until 1977. A change in the attitude towards foreign investment occurred in February 1977 when the possibility of entering into joint ventures with foreign governments and business enterprises in "high investment and high technology industries" was first put forward in the Third Party Congress. The first project approved by the government was the Myanma Fritz Werner Industries Company to undertake development, production and assembly of machinery equipment and accessories for industrial plants.

3.2 Institutions for industrial development

In the industrial sector state enterprises are organized under two ministries of industry. The Ministry of No.(1) Industry is in charge of light industry and supervises seven enterprises. The Ministry of No.(2) Industry has eight enterprises under it and is responsible for the heavy industry sector. However, a major industrial activity, rice milling, is undertaken by the Agriculture and Farm Produce Trade Corporation (under the Ministry of Trade) by virtue of its role as the government agency responsible for the purchase of paddy from the farmers. Similarly, another important industrial activity, wood processing, is under the control of the Ministry of Agriculture and Forests. Hence, state enterprises engaged in industrial activities are not necessarily confined to those operating under the ministries of industry.

Furthermore, a separate Ministry of Energy was established in 1985 under which an Energy Planning Department has been set up. The Ministry supervises several SEEs which were previously under Ministry of No.(2) Industry.

A brief description of the Departments and State Economic Enterprises (SEEs) under the two ministries of industry and the Ministry of Energy is provided as follows:

Ministry of (No. 1) Industry

1. Industrial Planning Department co-ordinates the eight commercial corporations under the same ministry with respect to planning, feasibility studies, etc.

2. Regional Industrial Co-ordination and Industrial Inspection Department is responsible for supervision and regulation of programmes in small-scale industries[1/] in the State and private sectors.

3. Textile Industries Corporation is a manufacturing concern producing natural and synthetic fabrics and made-up-article.[2/]

1/ In the context of industrial co-operatives the Ministry of Co-operatives is also dealing with small-scale industry.

2/ A proposal for the establishment of a Development Centre for Textile Technology at Pegu Township is under consideration with the Textile Industries Corporation.

4. Pharmaceutical Industries Corporation is concerned with the manufacture of a board range of products including pharmaceutical, cosmetics, toiletry products, plastic materials and soaps.

5. Foodstuff Industries Corporation handles exports of processed foodstuff and imports industrial raw materials and machinery spares for factories and plants.[1/]

6. Ceramic Industries Corporation Produces cement, clay products, procelain tableware and sanitary ware, glass containers, marble slabs and blocks.

7. General Industries Corporation is concerned with production of footwear, leather goods, rubber goods, and miscellaneous products such as umbrellas and fountain pens.[2/]

8. Metal Industries Corporation is concernced with production of steel products, enamelware products, aluminium products, engineering works, office equipment and hospital furniture, simple household appliances, etc.

9. Jute Industries Corporation is manufacturing jute bags, jute carpets etc.

10. Paper and Chemical Industries Corporation manufactures pulp and paper, chemicals, household and industrial paints, varnish, polish, wet storage batteries, detergents, safety matches, oxygen, acetylene and nitrogen gases.

Ministry of (No. 2) Industry

1. Central Research Organization (CRO) is the only established research institution for the industrial sector besides the universities. It was set up by the Government in 1954 (under the name UBARI - Union of Burma Applied Research Institute). Its main tasks are to adapt foreign technologies to Burma's needs, and to develop indigenous technologies to make better use of the country's raw materials. Its

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1/ The Research Division in the Foodstuff Industries Corporation provides technical assistance to small-scale and co-operative industries. It has also provided technical support to the Trade Ministry, for instance, in processing of fish sauce and fish paste and to producers in the Kachin State in Northern Burma in the making of grape fruit juice. A proposal for the establishment of a Development Centre for Food Technology at Daik-U Township is under consideration with the Foodstuff Industries Corporation.

2/ Proposals for the establishment of a Development Centre for Rubber Technology at Hmawbi Township, Rangoon, and a Development Centre for Leather Technology at Hlegu Township, Rangoon, are under consideration by the General Industries Corporation.

research activity is in metallurgy, ceramics, fats and oils, leather, medicinal plants, pulp and paper, man-made fibres and polymers, applied chemistry, physics and engineering. UNIDO has been providing assistance to the CRO in the fields of pulp and paper, polymers and pesticides.

2. Technical Services Corporation provides industrial consulting services such as project planning and feasibility studies services, process engineering and plant design services, process and technological consulting services, and services for transfer of technology of domestic as well as foreign origin. It also acts as construction contractors on project sites.

3. Heavy Industries Corporation produces agricultural machinery and equipment, electrical products, electronic products, machine tools and semi-finished products such as cast iron parts and steel forging parts. It relies heavily on imports, and are mainly of assembling type operation.

4. Wazi Corporation is responsible for printing of security paper and other speciality paper.

5. Myanma Fritz Werner Corporation, joint venture established in 1984 between the Ministry of No.(2) Industry and the Fritz Werner Co. of the Federal Republic of Germany, for the production of machine tools and metal fabrication equipment.1/

Ministry of Energy

1. Energy Planning Department

2. Electric Power Corporation

3. Myanma Oil Corporation deals with oil and gas exploration both on land and offshore, and with production and transmission by pipeline of oil and natural gas.

4. Petrochemical Industries Corporation is the sole agency responsible for refining of crude oil, operation of petrochemical and natural gas-based industries, production of fertilizers, transportation of crude oil and refined products.

5. Petroleum Products Supply Corporation is responsible for marketing of all refined petroleum products, natural gas-based products and supply of natural gas to consumers.

1/ The Myanma Fritz Werner Corporation is the country's first and hitherto only joint venture with a foreign partner. Negotiations are, however, underway with Japanese firms and a British firm for the establishment of (export-oriented) joint ventures for production of parts for assembly work and marine engines.

For the supervision and regulation of programmes in small-scale industries in the State and Private Sectors the Directorate of Regional Industrial Co-ordination and Industrial Inspection under the Ministry of No.(1) Industry is the responsible department.

Through the formation of industrial co-operatives small-scale industry is also taken care of by the Ministry of Co-operatives. The Co-operative Department, under the Ministry of Co-operatives is responsible for management of statutory functions of these co-operative societies. It is also concerned with the acquisition of machinery and equipment, procurement of raw materials and spares from abroad for the co-operative societies.

The Cottage Industries Department which is the technical wing of the Ministry of Co-operatives, provides technical extension services, quality control to existing industrial co-operative societies and to new ones which are in the process of establishment. It also assists in the preparation of project documents, selection of plant location, machinery and spares, and procurement of raw materials from abroad. Annual and long-term loans are recommended to the Myanma Economic Bank for these industrial co-operatives.

3.3 Resources for industrial development

Agricultural resources

Agricultural land resources are still substantial in Burma. Unlike some other countries in Southeast Asia, the pressure of population on land has not been very severe and there is still considerable scope for expansion of cultivated area. The total net cultivated area amounted to 20.3 million acres, and it is estimated that an additional 21.1 million acres represent "cultivable waste land" which could be brought under cultivation. Bringing this potential new land under cultivation, however, is likely to incur high capital outlays (i.e. due to irrigation requirements) and hence no major projects have been launched in recent years to expand acreage under cultivation. Instead, the emphasis has been on making better utilization of existing agricultural land through irrigation, flood protection and reclamation. Currently, only 12.5 per cent of cultivated area is irrigated and about 15 per cent of irrigated land is double cropped.

It is generally recognised that the single most important factor that contributed to rapid expansion of agricultural output in the early 1980s was the paddy intensification scheme known as the Whole Township Programme (WTP) launched in 1977/78. The WTP intensification scheme based on high yielding varieties of paddy that had been adapted to suit local conditions provided a package of inputs, incentives and better organization in a concerted way to boost paddy production. The inputs provided were high yielding variety seeds, fertilizers, plant protection chemicals, extension services and credit. Incentives were provided in the form of priority distribution of selected consumer goods in high demand in the rural sector. WTP also assisted in mobilizing additional labour during peak demand periods such as in the transplanting and harvesting seasons, and also provided support to the local authorities in co-ordinating production and procurement. By 1984/85 the WTP had been extended to 82 townships which accounted for 52 per cent of the total sown paddy area.

The substantial expansion of paddy output from 9.5 million tonnes in 1977/78 to 15.2 million tonnes in 1985/86 (Table 10) has been largely attributed to the WTP. Its significance has been further highlighted by the fact that there was a slight decline in the sown area and the increase in output had come primarily from higher yields. Average yields were reported to have increased from 746 kg per acre in 1977/78 to 1,122 kg per acre in early 1980s.

While irrigation and proper water control are important for double cropping and raising land and labour productivity, provision of other inputs for crop intensification are more directly related to industry support to agriculture. For example, the success of the Whole Township Programme (WTP) was based largely upon the application of fertilizers and plant protection chemicals. It is also observed that the quickest return to investment in Burma's agriculture would be to make more fertilizer available to farmers. Although fertilizer use increased nearly four times from about 113,000 tonnes in 1976/77 to about 400,000 tonnes in 1983/84, the rate of application is still very low. In 1983/84 two-thirds of the fertilizer used consisted of urea (270,000 tonnes) followed by triple super phosphate (100,000 tonnes) which accounted for about a quarter, and the rest consisted of potash. Over 80 per cent of the fertilizer used was applied to paddy; other crops received little. About two-thirds of the urea and all the phosphate and potash were imported.

It is estimated that if officially recommended application rates were followed, Burma would require at least 560,000 tonnes of urea and 280,000 tonnes of triple super phosphate per year. The two existing urea plants produce about 130,000 tonnes annually and with two new plants coming on stream, production is expected to rise to about 393,000 tonnes per annum which is still below requirements. Hence, significant urea imports will continue to make up the deficit while the requirements for super phosphate and potash will be wholly imported.

Although the diversification programme may not bring major immediate results, its main impact will be felt in the long run. For the foreseeable future Burma will continue its reliance on rice. But as noted above expansion of rice output under the WTP has been facing capacity constraints of which the most serious are in storage and milling. The Agricultural and Farm Produce Trade Corporation (AFPTC) has about 2 million tonnes of storage capacity for paddy. This is not adequate and in 1982/83 government paddy stocks totalled 2.8 million tonnes. The excess was stored in open spaces or in temporary storage facilities.

The agricultural diversification programme into 19 non-paddy crops will besides fertilizers require substantial amounts of other agricultural inputs. Production of these inputs by local industry provides one important way by which the manufacturing sector can make a significant contribution towards agricultural development.

In discussing agro-industrial linkages mention must be made of manufacture of farm machinery and equipment. Official statistics record that 20 to 30 per cent of public investment in industry has been allocated to agro-support industries in recent years. The details and composition of such

Table 10. Production of main crops, 1961/62-1986/87
(selected years)
('000 tonnes)

Crop	1961/62	1975/76	1977/78	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87a/
Paddy	6,834	9,207	9,462	13,317	14,146	14,372	14,287	14,255	14,317	15,219
Wheat	15	57	93	117	124	130	214	206	189	246
Maize	50	61	75	167	206	239	309	303	298	324
Pulses	254	256	356	402	509	485	613	667	620	717
Groundnut	393	410	464	438	573	550	532	667	560	586
Sesamum	76	134	111	157	180	198	207	253	248	187
Cotton (ginned)	21	38	42	74	96	99	104	41	32	31
Jute	6	38	56	99	34	64	55	52	21	30
Rubber	25	14	15	16	16	17	16	16	15	15
Sugarcane	1,080	1,631	1,791	2,035	2,736	3,719	3,662	3,767	3,852	3,599
Burmese tobacco	36	45	55	49	47	53	58	63	65	65
Virginia tobacco	13	12	24	28	30	36	44	41	4	4

Source: Report to the Pyithu Hluttaw, various issues.
a/ Provisional.

industries and how investment funds are allocated among them are not available. Nevertheless, the Heavy Industries Corporation of the Ministry of No.(2) Industry produces tractors, power tillers and water pumps in addition to agricultural implements such as ploughs and harrows.

Forestry resources

Forestry resources are considered substantial covering half of Burma. At present Burma produces 90 per cent of the world's supply of teak and has about 75 per cent of total world reserves of this timber. The forests also yield several other hardwoods for which exports have been slowly expanding.

Aside from earning foreign exchange the forestry sector is an important source of raw materials for the local construction industry to which it supplies about 300,000 tonnes of sawn timber annually. The rural sector is also dependent on the forests for energy needs (in the form of firewood and charcoal) as well as materials for housing construction such as bamboo.

The Timber Corporation, the state enterprise in the forestry sector, has been responsible for extracting all teak logs and half of the total output of other hardwood logs. It operates wood processing industries including all teak sawmills and about 40 per cent of the hardwood mills, and markets wood products both within and outside the country (Table 11).

Sawmilling of teak is reserved for the Timber Corporation and only custom resawing is permitted for the private sector. The government has 18 sawmills, and as in the case of rice mills most of them were established before independence. It is estimated that about 62 per cent of their capacity is now over 40 years old. The mills are inefficient and due to outdated technology the recovery rate is low and a high percentage of wood is wasted. Due to milling problems the best teak is exported as logs and lower grades are exported as sawnwood. The lowest grades of teak sawnwood are sold on the local market.

Unlike teak sawmilling of other hardwoods is not a government monopoly and 60 per cent of the 185 hardwood sawmills in the country are privately owned and operated. They are usually small mills with simple technology and low efficiency. Their output is sold mostly on the local market with only about 5 per cent being exported.

A forestry resource survey is currently underway with FAO assistance and systematic planning for the sector must await the results of the survey. But recent concerns with the annual allowable cut (AAC) particularly in view of differences in the accessibility of forest areas have intensified efforts to improve extraction and sawmilling operations and to develop downstream activities. Gains that could result from these efforts through better management and a modernization programme seem substantial. For example, log losses during the teak drying period between felling and marketing have been estimated to amount to as much as 10 per cent of production.

Fishery resources

Burma has a natural advantage of 1,768 mile-long coastal line ideal for developing marine resources. With the 1,250 mile-long Irrawaddy and many other smaller rivers and with numerous creeks, canals, lakes and ponds of various sizes, tropical Burma is suited for a thriving inland-water fishing industry.

Table 11. Production and distribution of timber by the Timber Corporation, 1981/82-1986/87
('000 cubic tonnes)

	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87[a/]
Teak (logs)						
Production	375.9	442.3	329.3	384.3	400.0	410.0
Distribution to saw mills	297.6	312.6	327.9	301.1	246.7	246.5
local sales	16.2	11.0	5.5	9.4	4.7	13.0
export	71.7	60.8	112.3	117.9	101.7	110.0
Hardwood (logs)						
Production	525.9	561.6	448.6	566.9	600.0	680.0
Distribution to saw mills	496.5	401.6	449.8	443.4	427.1	550.0
local sales	50.0	52.4	29.1	40.8	27.3	69.0
export	56.3	52.9	33.3	30.8	39.2	80.0
Teak (sawn timber)						
Production	113.6	163.5	134.6	126.7	98.7	113.0
Distribution to local sales	66.4	89.7	73.4	67.8	53.4	53.4
export	72.6	57.4	70.0	60.5	64.5	80.0
Hardwood (sawn timber)						
Production	257.1	283.6	233.0	238.7	234.9	302.5
Distribution to local sales	265.4	266.4	240.1	226.1	212.7	336.0
export	-	0.1	0.5	0.3	0.6	0.5

Source: Report to the Pyithu Hluttaw, various issues.
a/ Provisional.

The Fisheries Department oversees the work of an estimated 80,000 private fishermen and 652 fishing co-operatives including 57,000 members. Total production during 1984/85 was officially at 153,840 tonnes for fresh-water fish and shrimps and 512,000 tonnes of marine fish. Due to low levels of exploitation, extension of the exclusive economic zone (EEZ) to 200 miles and rich marine resources of coastal and offshore areas, the fishery sector has vast potential for further expansion. Output of the sector including both fresh water and marine fish production has increased considerably since the 1982/83 (Table 12).

Table 12. Index of fish production 1975/76-1986/87
(1969/70=100)

	1975/76	1980/81	1981/82	1982/83	1983/84	1985/86	1986/87[a/]
Fresh water fish	111.8	124.5	111.9	120.6	122.5	127.1	136.1
Marine fish	117.6	142.7	144.5	142.4	149.2	159.2	173.5

Source: Report to the Pyithu Hluttaw, various issues.
a/ Provisional.

Mineral, petroleum and natural gas resources

The mineral sector was an important source of foreign exchange in the 1940s when it contributed 35 per cent of total export receipts. In the early 1980s its share in exports had fallen to about 8 per cent. Currently, the value added by the sector accounts for 1.3 per cent of GDP and it is estimated to employ 85,000 workers. Petroleum and tin are the main products although tungsten, zinc, lead, antimony, copper and silver are also produced. The mineral sector has remained depressed and its output at present is about 10 per cent of the pre-war level. For example, before the war production of silver came to 60 million ounces while outputs of tin concentrates, lead and zinc concentrates were 5,400 tonnes, 75,000 tonnes and 70,000 tonnes respectively. In recent years silver production was half a million ounces and production of tin concentrates, lead and zinc concentrates were 1,000 tonnes, 7,500 tonnes and 9,000 tonnes respectively (Table 13).

All official production of minerals is vested in three state mining corporations. These are the No.(1) Mining Corporation responsible for non-ferrous metals, namely lead, zinc, copper and silver; the No.(2) Mining Corporation responsible for tin and tungsten; and the No.(3) Mining Corporation responsible for coal and industrial minerals such as baryte, gypsum, limestone, iron ore, graphite, etc. In addition, the Gems Corporation is responsible for the production and marketing of jade, rubies, pearls and other gems. Most of the minerals produced by Nos. (1) and (2) Mining Corporations are exported while the output of No. (3) Mining Corporation caters to the local market.

By most accounts the country is considered to have a varied and favourable mineral endowment but large tracts of potentially mineral rich areas have not been geologically surveyed or prospected in detail. Although the Department of Geological Survey and Mineral Exploration of the Ministry of Mines have undertaken some survey work and technical assistance has been provided in this area both by bilateral and multilateral donors, only a small part of the country has been prospected systematically by modern methods.

In 1986/87 according to the provisional data the production of crude oil, the principal commodity of the mining sector, was 10.1 million US barrels and the production of natural gas was 38,290 million cu.ft. Compared with 1985/86 the production of natural gas increased. According to the 1986/87 provisional data the production of important minerals such as tin concentrates, tungsten concentrates, tin/tungsten/scheelite mixed concentrates and refined tin metal was 1,323 metric tonnes, 476 metric tonnes, 2,285 metric tonnes and 600 metric tonnes respectively. Compared with the previous year the production of these minerals also increased. Refined gold, refined silver, refined lead, zinc concentrates, copper matte, nickel speiss, antimonial lead, copper concentrates and industrial minerals such as barytes, industrial/white clay, ball clay, fire clay, fir clay powder and calcium carbonate were produced according to the plan targets. The plan targets of producing 21,000 metric tonnes of steel billets and 3,000 metric tonnes of refined copper metal, (a new product upgraded from copper concentrates) was met.

Table 13. Production and exports of selected minerals, 1969/70-1985/86

		1969/70	19879/80	1982/83	1983/84	1984/85	1985/86 g/
Tin concentrates (65%):							
Production	(tonnes)	409	1,137	1,023	916	1,016	1,232
	(Kyats '000)	4,659	60,845	66,267	61,400	65,446	
Exports	(tonnes)	578	1,036	415	1,267	577	
	(Kyats '000)	5,978	66,731	27,706	84,929	37,168	
Tungsten concentrates (65%):							
Production	(tonnes)	297	799	524	473	410	455
	(Kyats '000)	1,888	38,291	23,608	17,110	17,333	
Exports	(tonnes)	318	563	610	907	606	
	(Kyats '000)	6,311	31,594	36,493	36,066	25,620	
Tin and tungsten mixed concentrates:							
Production	(tonnes)	404	1,317	2,559	3,130	3,601	3,805
	(Kyats '000)	-	65,595	112,069	117,626	143,191	
Exports	(tonnes)	-	1,179	2,933	1,885	3,431	
	(Kyats '000)	-	58,722	128,448	70,839	136,432	
Refined lead:							
Production	(tonnes)	6,708	5,863	8,001	7,505	7,469	7,620
	(Kyats '000)	11,589	37,051	55,496	52,055	51,805	
Exports	(tonnes)	5,217	3,298	8,984	6,563	9,011	
	(Kyats '000)	7,912	28,471	38,214	21,496	32,447	
Zinc concentrates:							
Production	(tonnes)	6,978	6,270	7,650	7,775	9,003	9,144
	(Kyats '000)	4,026	9,964	13,946	14,174	16,412	
Exports	(tonnes)	6,383	3,624	6,402	7,302	9,686	
	(Kyats '000)	2,923	3,560	10,389	14,483	15,163	
Copper concentrates:							
Production	(tonnes)				-	17,760	49,000
	(Kyats '000)				-	42,624	
Exports	(tonnes)				-	15,000	
	(Kyats '000)				36,138	25,160	
Copper matte:							
Production	(tonnes)	217	126	177	252	293	173
	(Kyats '000)	516	1,327	1,821	2,593	3,014	
Exports	(tonnes)	217	364	506	449	-	
	(Kyats '000)	849	3,267	2,367	3,243	-	
Nickel speiss:							
Production	(tonnes)	199	64	79	79	54	80
	(Kyats '000)	556	430	531	531	363	
Exports	(tonnes)	163	-	400	-	-	
	(Kyats '000)	1,295	-	1,328	-	-	
Refined silver:							
Production	(tonnes)	638	402	576	576	491	576
	(Kyats '000)	8,890	23,769	37,446	37,453	31,928	
Exports	(tonnes)	759	269	583	623	638	
	(Kyats '000)	6,399	27,817	42,918	53,534	38,128	
Antimonial lead:							
Production	(tonnes)	-	238	274	308	300	254
	(Kyats '000)	-	1,650	1,892	2,135	2,114	
Exports	(tonnes)	-	-	-	-	-	
	(Kyats '000)	-	-	-	-	-	
Gypsum:							
Production	(tonnes)	6,681	31,199	17,829	21,187	27,144	37,984
Coal:							
Production	(tonnes)	11,047	13,600	28,494	35,402	43,533	42,500
Lime stone:							
Production	('000 tonnes)	591	1,188	1,119	1,145	1,147	1,517

Source: Ministry of Mines; Report to the Pyithu Hluttaw 1986/87.
g/ Estimates.

Government programmes in the mineral sector have concentrated on rehabilitating old tin/tungsten and silver/lead/zinc mines and exploiting known reserves of these and other minerals such as copper. No new large mining operations involving new deposits have taken place over the past decades. The Federal Republic of Germany, Japan, USSR, Canada and the World Bank have provided assistance to the government's efforts in the mineral sector, and UNDP has provided technical assistance through several projects in exploration, feasibility studies and training.

Domestic consumption of metallic minerals produced is negligible and there are no substantial processing in the form of smelting, refining and other value added facilities in the country. Current activities in the mineral sector, therefore, lay considerable emphasis on surveying, exploration and prospecting work and increased attention has been given to downstream activities. A tin and tungsten expansion project financed by the World Bank and a tin smelting and refining project are being implemented. The expansion of a lead sulphide ore concentration plant at the Bawdwin Mine from 500 tonnes per day capacity to 1,000 tonnes with assistance from the Federal Republic of Germany is another important project in the mineral sector. A copper project financed by Yugoslavia was completed in 1983 and production of copper concentrates is estimated to reach 36,000 tonnes in 1984/85. Similarly, an iron project initiated with Italian supplier credit was completed in 1983/84 and is expected to raise the output of steel billets to 20,000 metric tonnes per year.

With regard to petroleum resources crude oil production increased steadily from 6.2 million barrels per year in 1970/71 to reach a peak of 11 million barrels in 1979/80. Since then output has remained between 10 and 11 million barrels.

The petroleum sector is under the new Ministry of Energy and the responsibility for production and marketing are divided among three corporations. Exploration and production for oil and gas are undertaken by the Myanma Oil Corporation. Refining of crude oil and operation of petrochemical and natural gas based industries are the responsibility of the Petroleum Industries Corporation. The Petroleum Products Supply Corporation then undertakes the marketing and distribution of the products.

There are three petroleum refineries in the country. The Syriam refinery located near Rangoon is an old refinery with a capacity of 16,000 b/d which has been expanded to 23,330 b/d with assistance from Japan. Another old refinery with 6,100 b/d capacity is located at Chauk in central Burma near the oil fields. The third refinery situated at Mann in central Burma was completed recently with a $140 million loan from Japan and has a capacity of 30,000 b/d. As the peak production of crude oil attained in 1979/80 and again in 1984/85 reached 30,000 b/d, the existing refining capacity is more than adequate to meet the needs of the current production level.

Currently, all crude oil output comes from on-shore wells. Exploration for offshore oil was conducted by four groups of major oil companies on a product-sharing basis in the 1970s but without success. After this, other more promising offshore areas were offered for exploration again on a product-sharing basis, but so far these remain unexplored.

Nevertheless, exploration undertaken with Japan National Oil Company in the Gulf of Martaban has led to the discovery in 1983 of large reserves of natural gas estimated at between 3 to 8 trillion cu.ft. A $1 billion investment is being envisaged to develop this natural gas field and to establish some downstream industries aimed primarily at the export market. The project includes a methanol plant, two ammonia factories, a urea plant, two gas-fired power stations as well as a production platform and offshore pipelines. A feasibility study is currently underway with Canadian assistance.

Pending the large-scale development of the Martaban offshore natural-gas project, the government is in the meantime also pursuing plans to develop on-shore natural gas reserves in the Irrawaddy Delta region close to the industrial areas around Rangoon. Estimates of Burma's on-shore natural gas reserves range from 1-2 trillion cu.ft. with most of it lying southwest of Rangoon in the Irrawaddy Delta. Plans are also on hand for the building (with possible World Bank assistance) of a 260-mile natural gas pipeline from Kyailat in the Irrawaddy Delta region to Rangoon and then onwards to the port city of Moulmain on the eastern seaboard. Although designed to supply natural gas for power generation as base load demand, the pipeline would be able to supply gas as well to a number of industries along the route such as weaving mills, sugar mills, paper-pulp factories as well as a great number of brick kilns.

Two smaller natural-gas projects are currently under planning. In an effort to reduce the country's petro shortage consideration is being given to the building of a methanol-converting plant at Seiktha next to a methanol plant now under construction by Voest Alpine of Austria. The other project involves the construction of a compressed natural gas (CNG) plant which would be used to produce fuel for cars.

Energy resources

An efficient system of power generation and distribution as well as improved transport infrastructure are essential for industrial development. Commercial primary energy consisting of oil, natural gas, coal and hydropower accounts for 35 per cent of total energy consumption in the country. The balance is made up of non-commercial energy sources with 59 per cent coming from firewood and 6 per cent from charcoal.

Detailed up-to-date information on oil reserves are not available. An estimate made by the Myanma Oil Corporation indicated that proven recoverable reserves in 1977 amounted to 138 million barrels.[1/] These reserves are not large in view of the current level of production of around 11 million barrels a year. The geological structure of Burma's offshore areas offers good possibilities for the existence of substantial oil reserves but exploration made thus far has not yielded positive results.

With regard to natural gas the four major on-shore fields currently in production are estimated to have recoverable reserves of 600 billion cu.ft. A major gas discovery in the Gulf of Martaban noted above has brightened the energy outlook considerably and efforts are underway to determine the

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1/ More recently estimates of the country's oil reserves are given at about 400 million barrels.

feasibility of developing this field in order to augment domestic energy supplies as well as to export natural gas based products. But the investment outlay estimated at $1 billion is a considerable amount. As for coal, no known large deposits exist, but small quantities have been mined in upper Burma with current annual output amounting to about 43,000 tonnes.

In view of the above the objective of the government is to place increased reliance on hydropower. In 1984/85 the total installed generating capacity is estimated to be 833 megawatts of which 27 per cent was hydro and 73 per cent was thermal. The high percentage of thermal and the on-going and proposed projects to establish thermal stations based on natural gas and diesel are stated to be short run measures aimed at meeting current energy needs of industry and for other uses while efforts are being made to increase hydropower. It is estimated that the industrial sector consumed 54 per cent of the total power output. System losses calculated at 33 per cent in 1984/85, have also been high and greater attention has been directed at improving efficiency in transmission as well as by rationalization of the distribution system to reduce power losses.

Burma has abundant potential for hydropower and the available resources of its river systems have remained largely untapped. A power survey conducted jointly by UNDP and IDA in 1976-1978 estimated that the theoretical hydropower potential for the whole country was more than 100,000 MW on an installed capacity basis and prospective hydro generating sites have been identified in various pre-feasibility studies for 5,000 MW. This compares with the present installed hydropower capacity of the Electric Power Corporation of 171 MW.

There is therefore considerable scope for development of hydropower and major projects are under implementation with grants and loans from both multilateral and bilateral sources. These are expected to expand installed capacity by 250-300 MW by 1992/93.

Human resources

In 1986/87 the active labour force was estimated at 15.5 million, of which 1.7 million were engaged in the State sector and 13.8 million in co-operative and private sectors. The processing and manufacturing sector employed 1.4 million persons in 1986/87 representing 8.7 per cent of the total labour force.

Burma endeavours to improve the education system for all-round development. Detailed programmes have been drawn up for the development of education which comprises basic technical, agricultural, vocational and higher education. In 1986/87 a new curriculum was introduced at the basic education level. One of the primary objectives of education plan targets is to train technicians and skilled workers to rise to the level of aspirations in the manufacturing sector.

3.4 Prospects for resource-based industrialization and key areas requiring technical assistance

Burma is potentially rich in terms of resource endowments. A good potential exists for developing industries based on agricultural raw materials, forestry and fishery resources. The crucial question, however, is how well these resources could be exploited for industrial use, with a view to achieving the basic objective of transforming an agricultural economy into an agro-based industrial economy.

The domestic market is quite substantial for products such as processed foods, textiles, simple consumer durables and household items. The fact that there has been a large inflow of such goods from across the border for sale in the thriving parallel market attests to the existing domestic demand for these products. Reorientation of industrial policies towards the production of essential consumer goods would hold considerable promise if the parallel economy were erradicated.

Export promotion will prove to be a challenging task. Aside from the uncertain prospects for products of agro-industries on the world market the infrastructure and support services for a successful export drive are not well developed. As Burma is a new-comer in the sphere of industrialization, it is likely to face stiff competition from other developing countries that have already achieved a measure of success with manufactured exports. In view of these constraints concerted efforts will be needed to exploit available opportunities by concentrating on areas where the country could sharpen the competitive edge of products by virtue of its good resource endowments. In this respect renewed efforts are required to reorient public and private industrial development programmes and investment priorities to reflect this strategy.

Effective exploitation of such opportunities will depend to a considerable extent on further rationalization of industrialization programmes and policies. The initiatives taken to improve the performance of state enterprises and to reactivate the private sector in the process of economic development have yet to make an impact. These initiatives could be further strengthened and translated into operational programmes to enable the industrial sector to play a dynamic role in national development.

One of the main objectives for the Fifth Four-Year Plan (1986/87-1989/90) is the consolidation of the economy rather than excessively accelerating its expansion. As far as the processing and manufacturing sector is concerned, priority attention will be given to improved utilization of existing plants and equipment. In the light of this requirement plans are under way for the establishment of extension services through the activities of technology development centres at the Ministry of No. (1) Industry, e.g. for rubber and rubber products leather and leather products, food industries, and textile industries.

Priority consideration is also given to optimum utilization in industry of local raw materials including creation of new productive capacity based on such raw materials. A projection of the needs of Burma (compared to other countries) shows that its production could be increased 3-4 times.

Continued attention will also be given to the establishment of industries with high rates of returns and short periods of gestation. In this context the facility being established for industrial project selection and assessment is of crucial importance. There is currently a lack of broader investment identification studies taking into account long-term trends and development prospects concerning key industrial subsectors (steel, metal foundry products, chemicals).

During recent years a certain improvement in the supply of inputs has been brought about through increased agricultural production and greater availability of intermediate goods and spare parts through imports. It is a matter of more general concern how to raise capacity utilization as well as the level of production and productivity through better organization and management of the industrial entities. Assistance in evolving appropriate measures and programmes to redress some of the major areas identified in the "Guidelines for State Economic Enterprises for Operating on Commercial Lines" (adopted in 1975)[1/] would help overcome some of the important constraints hindering progress in public sector industries. Training and updating of skills in management techniques as well as in the preparation, planning, execution and monitoring of industrial projects are other areas where international assistance can have a significant impact.

A quite significant role is played by the small-scale industry (SSI) sector particularly in terms of employment creation. Such industries are generally established in line with regional development plans often on the basis of local raw materials. The Cottage Industries Department which is the technical wing of the Ministry of Co-operatives provides technical extension services, quality control and testing services etc. External technical assistance may be provided particularly in connexion with support for optimum utilization of local raw materials, process development and introduction of up-to-date technologies.

Bilateral assistance from the Federal Republic of Germany under a project "Promotion of Small-Scale Industry in the Co-operative Sector", is provided with following objectives:

(i) to up-grade technical services and methodology to the existing industrial co-operatives; and

(ii) to establish technical consultancy unit within the co-operatives including technical training.

Assistance is also provided by UNDP/ILO under the project "Small-Scale Industry Development in the Co-operative Sector". In this project, wood working machineries manufacturing plant, grain dryers manufacturing plant, stave silo and laminated beams manufacturing plant are set up.

Burma is fortunate to be endowed with various energy sources including hydropower, natural gas, crude oil, forest resources and coal. During the Fifth Four-Year Plan period it is intended to substitute fuel oil with electric power to the extent possible. Emphasis will be to expand hydro-electric power generation, gas turbine and steam power generation for the

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1/ Such as granting greater autonomy to the state enterprises, establishment of appropriate efficiency criteria and introducing an effective system of incentives for managers and workers.

industrial sector's use. In this connexion follow-up recommendations of a recent UNDP/World Bank energy sector report may be proposed e.g. in the form of assistance to the Energy Planning Department. R and D concerning biogas development has also been noted as a field requiring external assistance.

Burma's major development priorities will continue to focus primarily on agriculture including improvement in handling, storage and processing. It has been recommended that the bulk of the programme resources for the Fifth UNDP country programme covering the period 1987-1991 be allocated to priority areas and pre-investment studies on the possibility of increasing the degree of industrial processing. The diversity of UNIDO's technical assistance to Burma is reflected in Annex C showing the completed and operational technical co-operation projects of UNIDO.

It is expected that the level of resources available for the Fifth UNDP Country Programme will be about the same as that of the last Programme Cycle, i.e., an indicative planning figure of $60 million covering the period 1987-1981. Setting aside $6 million to provide for urgent and unforeseen needs during the programme perioo the programme endeavours to achieve the desired results in priority areas. External bilateral and multilateral assistance averaged about $440 million per year of which roughly $80 million represented grants and $360 million loans in the first half of the 1980s. An indicatioa of the country's main sources of loans can be ascertained from Annex Table A-9. Japan is by far the largest lender accounting for about 59 per cent of outstanding external bilateral loans to Burma.

New industrial projects to be financed from loan funds provided by the Japanese government include caustic soda plant project, auto assembly and electric appliance plants. Burma is expected to continue to rely on external funds for the bulk of its requirements for matching the pace of industrial expansion with the country's resource endowments.

Annex A

Statistical Tables

Table A-1: Sectoral growth rates of GDP, 1982/83-1986/37
(at constant 1969/70 prices)

Sector	1982/83	1983/84	1984/85	1985/86	1986/87[a/]
Agriculture	6.8	4.9	3.0	2.6	2.5
Livestock and fishery	3.5	7.0	9.7	1.9	4.2
Forestry	3.4	1.5	6.9	4.0	5.6
Mining	8.1	3.2	14.8	4.8	18.9
Processing and manufacturing	5.3	3.3	8.2	4.5	6.9
Power	16.9	8.0	15.3	9.9	9.6
Construction	6.3	4.8	8.2	2.5	-4.4
Services	6.1	4.2	5.5	7.4	3.8
Transportation	9.5	5.8	6.0	3.5	4.5
Communications	26.0	13.4	4.5	11.3	13.2
Financial institutions	3.3	5.3	6.9	6.1	3.4
Social and administrative services	6.8	1.9	5.6	12.6	3.6
Rentals and other services	2.2	4.9	4.2	2.7	2.5

Source: Ministry of Planning and Finance, Report to the Pyithu Hluttaw on the Financial, Economic and Social Conditions of the Socialist Republic of the Union of Burma for 1987/88, 1987.

Table A-2: Balance of payments summary, 1979/80-1984/85
(US $ million at current prices)[a/]

	1979/80	1980/81	1981/82	1982/83	1983/84[b/]	1984/85[b/]
Exports						
Merchandise	400.8	480.4	473.4	372.6	410.2	398.7
Non-factor services	41.5	50.8	41.6	50.8	43.3	49.7
Imports						
Merchandise	649.7	695.3	813.7	886.3	610.1	648.1
Non-factor services	52.7	60.2	66.7	64.4	59.5	51.4
Net factor income	-22.0	-24.2	-23.0	-44.7	-63.6	-63.0
Net current transfer	15.3	16.6	17.6	23.7	47.2	23.4
Current balance	-266.8	-231.9	-370.8	-547.3	-232.5	-290.7
Official grand aid	65.4	96.6	58.6	77.6	65.8	75.6
Net medium and long-term loans	296.3	149.0	259.2	324.3	177.3	186.0
Other medium and long-term (net)	7.4	40.2	-19.3	-13.0	8.3	-17.2
Net short-term capital	-5.9	-0.9	-	0.7	-0.4	0
Overall balance	106.2	62.5	-72.3	-157.7	18.5	-46.3

Source: Union of Burma Bank.

a/ Converted from source in kyat at annual average exchange rate.
b/ Estimates.

Table A-3: Physical volumes of production of selected industrial products, 1983/84-1986/87

Product	Unit	1983/84	1984/85	1985/86	1986/87[a/]
Candle	'000 metric tonnes	2.08	2.10	2.10	2.69
Bricks and tiles	million nos.	121.3	144.4	116.5	138.4
Cement	'000 metric tonnes	314.7	299.4	434.6	570.6
Sheet glass	'000 metric tonnes	8.08	7.93	3.89	7.00
Wire nail	'000 metric tonnes	4.3	4.3	2.5	2.1
Aluminium ware	'000 pounds	2,301	1,841	1,676	1,267
Motor spirit	million gallon	70.39	76.94	69.42	76.90
Kerosene	million gallon	5.17	4.84	1.91	2.02
Diesel oil	million gallon	93.86	103.74	100.28	108.72
Furnace oil	million gallon	48.79	49.49	45.04	50.38
Incandescent lamp	'000 nos.	3,619	3,465	3,366	3,000
Fluorescent lamp	'000 nos.	498	431	454	440
Dry-cell battery	'000 nos.	21,233	18,914	19,642	20,750
Television receiver	nos.	891	1,137	3,649	2,288
Motorcar	nos.	1,907	1,545	2,166	2,671
Bicycle	nos.	11,182	10,208	11,505	18,200
Water pump	set.	4,928	4,200	4,627	5,160
Tractor	nos.	637	385	513	898
Power tiller	nos.	425	393	190	600
Fertilizer	'000 metric tonnes	122.9	157.1	280.6	366.5
Sugar	'000 metric tonnes	57	66	54	63
Salt	'000 metric tonnes	280	303	321	340
Cigarette	million nos	2,882	2,764	3,205	2,100
Cotton yarn	'000 metric tonnes	15.93	16.91	17.13	15.94
Shirting	'000 yard	24,602	21,846	19,406	15,087
Poplin	'000 yard	7,446	6,407	6,103	5,014
Gents' longyi	'000 nos.	11,428	9,963	9,502	10,327
Ladies' longyi	'000 nos.	352	381	203	232
Children's longyi	'000 nos.	333	193	181	179
Vest	million nos.	3.9	4.0	3.2	3.5
Towel	'000 nos.	1,774	1,730	1,764	1,516
Blanket	'000 nos.	1,855	1,781	1,620	1,415
Mosquito netting	'000 yard	3,048	3,575	4,100	3,243
Gunny bag	'000 nos.	32,604	39,162	32,276	30,833
Umbrella	'000 doz.	32.89	18.84	14.76	8.17
Soap	'000 metric tonnes	34.65	43.66	45.62	39.91
Matches	case in thousand[b/]	136	121	105	110
Paper	'000 metric tonnes	18.33	18.39	19.74	16.65
Pulp	'000 metric tonnes	7.52	7.89	6.61	5.50

Source: Ministry of Planning and Finance.

a/ Provisional.
b/ Each case contains 1,200 match boxes.

Table A-4: Average apparent consumption of selected manufactures, 1981-1983

Product grouping and commodity (ISIC)		Unit	Average apparent consumption per 1000 inhabitants	Imports as percentage of apparent consumption	Exports as percentage of apparent consumption	Average annual production	Growth rate of apparent consumption
			1981-1983	1981-1983	1981-1983	1981-1983	1975-1983
FOOD PRODUCTS							
Raw sugar (311801)		W	1 84	0 0	0 1	88333	-2 51
Refined sugar (311804)		W	1 11	0 2	8 0	45000	7 22
Cocoa powder (311907)	a/	W	0 00	100 0	0 0	0	-20 02
Cocoa butter (311910)		W	0 00			0	
Chocolate and chocolate products (311913)		W					
Prepared animal feeds (312201)		W					
OILS AND FATS							
Oils and fats of animals, unprocessed (311507)		W					
Oils of vegetable origin (311510*)	a/	W	5 88	7 5	0 0	199398	4 50
TEXTILES							
Wool yarn, pure and mixed (321103)	a/	W	0 00	100 0	0 0	0	95 82
Cotton yarn, pure and mixed (321109)	a/	W	0 51	8 4	0 0	17400	6 74
Cotton woven fabrics (321128)		S	2755 21	0 0	0 0	102263333	4 66
Woollen woven fabrics (321134)		S	0 09	100 0	0 0	0	-32 75
Knitted fabrics (321301)		W					
FOOTWEAR							
Footwear, excluding rubber footwear (324000)	a/	P	140 03	1 1	0 0	9078500	0 05
WOOD AND WOOD PRODUCTS							
Veneer sheets (331110)		V					39 88
Particle board (331122)		V					
PAPER AND PAPER PRODUCTS							
Wood pulp, mechanical (341101)		W	0 00	100 0	0 0	0	
Pulp of fibres other than wood (341104)		W	0 35	0 0	1 3	15000	-0 20
Wood pulp, dissolving grades (341107)		W	0 00			0	
Wood pulp, sulphate and soda (341110)	a/	W	0 00	104 8	4 8	0	-7 84
Wood pulp, sulphite (341113)		W	0 00	100 0	0 0	0	
Wood pulp, semi-chemical (341116)		W	0 00			0	
Newsprint (341119)	a/	W	0 21	100 0	0 0	0	-0 61
Other printing and writing paper (341122)		W	0 38	50 8	0 3	7000	-0 10
Kraft paper and kraft paperboard (341125)	a/	W	0 09	16 8	13 1	3000	-2 33
Other paper and paperboard (341131)	a/	W	0 12	29 2	0 3	3000	1 25
INDUSTRIAL CHEMICALS							
Methanol (methyl alcohol) (351121)	b/	W	0 00	100 0	0 0	0	6 85
Glycerine (glycerol) (351125)	a/	W	0 01	5 3	86 2	823	28 52
Chlorine (351145)		W					
Sulphuric acid (351147)		W	0 00	100 0	0 0	0	-18 66
Nitric acid (351149)		W	0 00	100 0	0 0	0	-7 74
Zinc oxide (351154)	a/	W	0 00	100 0	0 0	0	11 54
Titanium oxides (351155)		W	0 00	100 0	0 0	0	-20 67
Lead oxides (351157)		W					
Ammonia (351158)	b/	W	0 00	100 0	0 0	0	-12 98
Caustic soda (351159)	a/	W	0 14	100 2	0 2	0	2 61
Soda ash (351168)		W					18 21
Hydrogen peroxide (351171)	a/	W	0 01	100 0	0 0	0	75 75
Calcium carbide (351173)	b/	W	0 02	100 0	0 0	0	-10 69
Dyestuffs, synthetic (351174)	a/	W	0 01	100 0	0 0	0	18 17
Vegetable tanning extracts (35 75)		W					
Nitrogenous fertilizers (35120)		S	3 05	48 7	0 0	57087	14 47
Phosphatic fertilizers (351204 + 351207)		S	0 98	100 0	0 0	0	22 52
Potassic fertilizers (351210)		S	0 37	100 0	0 0	0	138 40
Insecticides, fungicides, etc (351218)		W					
Rubber, synthetic (351301)		W	0 00	100 0	0 0	0	3 84
Non-cellulosic staple and tow (351304)		W	0 03	112 5	12 5	0	3 38
Regenerated cellulose (351331)		W	0 01	100 0	0 0	0	4 83

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Table A-4 cont.

Product grouping and commodity (ISIC)		Unit	Average apparent consumption per 1000 inhabitants	Imports: As percentage of apparent consumption	Exports: As percentage of apparent consumption	Average annual production	Growth rate of apparent consumption
			1981-1983	1981-1983	1981-1983	1981-1983	1975-1983
PETROLEUM REFINERIES							
Motor gasolene (353007A)		W	8.53	0.0	0.0	242333	3.98
Kerosene (353013A)		W	0.93	0.0	0.0	34667	-24.28
Distillate fuel oils (353019A)		W	9.91	0.0	0.0	380000	4.60
Residual fuel oils (353022A)		W	4.88	0.0	32.8	240333	11.78
Lubricating oils (353025A)		W	1.30	59.9	0.0	19333	-8.25
Liquefied petroleum gas (353037A)		W	0.08	0.0	0.0	3333	-27.52
GLASS AND CEMENT							
Glass bottles and containers (3620108)		W	0.38	10.8	0.0	11767	7.43
Cement (369204)		W	8.82	0.8	2.4	333333	-0.44
IRON AND STEEL							
Pig iron (3710007 + 3710010)	a/	W	0.02	100.0	0.0	0	-26.17
Wire rods (371028)		W	0.55	4.3	0.0	19867	1.16
Angles, shapes and sections (371035)		W					
Plates(heavy), over 4.75 mm (371040)		W					
Plates(medium), 3 to 4.75 mm (371043)		W					
Plates and sheets, < 3 mm (371046 + 371049 + 371052)	a/	W	0.33	83.6	0.0	2000	0.94
Tinplate (371055)	a/	W	0.01	100.0	0.0	0	-4.18
Railway track material (371067)		W					22.01
Wire, plain (371070)		W	0.33	100.0	0.0	0	-8.13
Tubes, seamless (371076)		W					
Tubes, welded (371079)		W					
Steel castings in the rough state (371085)		W					
Steel forgings (371088)		W					
NON-FERROUS METALS							
Copper, refined, unwrought (372004)	a/	W	0.01	100.0	0.0	0	84.07
Copper bars, rods, angles, etc (372010 + 372013)	a/	W	0.01	100.0	0.0	0	20.76
Copper plates, sheets, strip and foil (372016)		W					
Copper tubes and pipes (372019)		W					
Aluminium, unwrought (372022)		W	0.01	100.0	0.0	0	-5.15
Aluminium bars, rods, angles, etc (372025 + 372028)		W	0.00	100.1	0.1	0	47.47
Aluminium plates, sheets, strip etc (372031)	a/	W	0.04	70.1	0.0	458	7.38
Aluminium tubes and pipes (372034)		W	0.00	100.0	0.0	0	67.71
Lead, refined, unwrought (372037)		W	0.11	0.1	59.7	8773	28.80
Zinc, unwrought (372043)		W	0.01	100.0	0.0	0	8.66
Zinc plates, sheets, strip and foil (372046)		W	0.00	100.0	0.0	0	19.84
Tin, unwrought (372049)		W	0.01	4.4	28.0	333	78.06

Source Statistics and Survey Unit, UNIDO
Based on data supplied by the UN Statistical Office, with estimates by the UNIDO Secretariat

Note ISIC 311510* consists of 311510 + 311513 + 311516 + 311519 + 311522 + 311525 + 311528 + 311531 + 311534 + 311537
Growth rates have been calculated on the basis of available annual data over the period indicated

Footnotes a/ Data for 1983 not available
b/ Data for 1981 only

Table A-5: State-owned factories and establishments by branch of manufacturing, 1985/86 and 1986/87

Branch of manufacturing	Number of factories and establishments under operation	
	1985/86	1986/87[a/]
Food and beverages	244	255
Clothing and wearing apparel	65	65
Construction materials	134	136
Personal goods	18	18
Household goods	14	14
Printing and publishing	28	28
Industrial raw materials	905	961
Mineral and petroleum products	24	26
Agricultural equipment	3	3
Machinery and equipment	7	7
Transport vehicles	5	5
Workshops and dockyards	305	305
Miscellaneous	11	11
Total	1,763	1,834

Source: Ministry of Planning and Finance.

[a/] Provisional.

Table A-6: Co-operative and private factories and establishments by branch of manufacturing, 1986/87[a/]

Branch of manufacturing	Number		
	Co-operative	Private	Total
Food and beverages	365	13,359	13,724
Clothing and wearing apparel	152	9,410	9,562
Construction materials	110	1,537	1,647
Personal goods	12	5,004	5,016
Household goods	20	1,113	1,133
Printing and publishing		99	99
Industrial raw materials	7	1,561	1,568
Mineral and petroleum products	10	3,024	3,034
Agricultural equipment		7	7
Machinery and equipment		5	5
Transport vehicles	7	324	331
Miscellaneous	36	4,450	4,494
Total	719	39,901	40,620

Source: Ministry of Planning and Finance.

[a/] Provisional.

Table A-7: Sectoral allocation of public investment, 1986/87-1990/91 (at 1969/70 prices)

Sectors	Amount (Kyat million)	Percentage
Productive sectors	5,905.9	59.0
Agriculture	1,301.3	13.0
Livestock and fishery	450.4	4.5
Forestry	400.4	4.0
Mining	850.9	8.5
Processing and manufacturing	2,902.9	29.0
Infrastructure	2,602.6	26.0
Power	900.9	9.0
Construction	350.4	3.5
Transport	1,201.2	12.0
Communications	150.1	1.5
Services sectors	1,501.5	15.0
Financial, trade, social and administrative	1,501.5	15.0
Total	10,010.0	100.0

Source: Ministry of Planning and Finance, Five-Year Development Programme, 1986/87-1990/91, 1985.

Table A-8: Tentative list of top priority manufacturing projects under the Five-Year Investment Programme, 1986/87-1990/91

Serial No.	Name of project	Total Project Cost (Kyat in thousand)
1.	Integrated Liquified Petroleum Gas Project (Phase III)	600,000
2.	No.(5) Fertlizer Plant Project	525,000
3.	Advisory Group for Minieral Survey Project	32,414
4.	Caustic Soda Plant Project	439,621
5.	Burma Industrial Rehabilitation Project: Study of Capacity Utilization and Productivity Improvement in Pulp and Paper Industry Project	15,500
6.	Burma Pharmaceutical Industry Rehabilitation Project	693,801
7.	Rehabiliation of Rice Bran Oil Mills Project	849,350
8.	Thayet Cement Mill Renovation Project	520,000
9.	Pilot Plant for Pesticides Formulation Project	30,194
10.	Forest Industries Training Project (Phase II)	27,785
11.	Spent Lube Recovery Plant Project	95,000
12.	Martaban Off-shore Petroleum Development Project/ On-shore Project (Ammonia, Urea, Methanol and M.T.G. Plants Project)	424,100
13.	Instrumental Laboratory Project	7,250
14.	Development Centre for Rubber Technology Project	35,500
15.	Development Centre for Leather Technology Project	28,120
16.	Palm Oil Mill Project	82,700
17.	Textile Mill (Thamaing) No.1 Factory Renovation Project	174,671
18.	Newsprint Paper Plant Project	352,000
19.	Renovation of Awba Wheat Flour Mill Project	19,440
20.	Silo Construction Project	26,670

../...

Table A-8 (continued)

Serial No.	Name of project	Total Project Cost (Kyat in thousand)
21.	Plastic Appliances Extrusion Plant Project	37,900
22.	Plastic Pellets Manufacturing Plant Project	1,310,300
23.	Welded Steel Pipe Plant Project	91,500
24.	Mini Cement Plant Project	10,100
25.	Shoes Factory Project	112,650
26.	Towel Factory Project	51,501
27.	Renovation of Namti Sugar Mill Project	91,604
28.	Industrial Training Centre No.1 Project (Phase II)	109,685
29.	Industrial Training Centre No.2 Project	278,035
30.	Development Centre for Food Technology Project	251,922
31.	Development Centre for Textile Technology Project	227,500
32.	Aluminium Ware Factory Renovation Project	193,612
33.	Procurement of Material for the Construction of River Crafts Project	90,300
34.	Electrical Testing Laboratory Project	7,000
35.	Fermentation Unit on a Pilot Scale Project	27,593
	Total	7,87,0,318

Source: Ministry of Planning and Finance, Five-Year Development Programme, 1986/87-1990/91, 1985.

Table A-9: External, bilateral and multilateral loans, by source as of 31 March 1985

	Debt outstanding (disbursed)	
	(million $)	(percentage)
1. Bilateral loans		
Creditor country		
Japan	726.2	58.7
Federal Republic of Germany	220.2	17.7
Czechoslovakia	172.9	13.9
China	51.6	4.1
Denmark	21.6	1.7
France	19.4	1.6
Canada	6.1	0.5
Italy	4.3	0.3
United Kingdom	3.1	0.2
Others	18.2	1.5
Total	1,243.4	100.0
2. Multilateral loans		
Agency		
IDA	359.1	
ADB	226.0	
IMF Trust Fund	49.7	
OPEC Special Fund	28.7	
EEC	10.5	
Total	674.0	

Source: World Bank.

ANNEX B

Major industrial investment projects during the Fourth Four-Year Plan (1982/83-1985/86)

ANNEX B

Major industrial investment projects during the Fourth Four-Year Plan (1982/83-1985/86)

The Pyithu Hluttaw approved an investment of Kyat 11,180.7 million for the processing and manufacturing sector during the Fourth Four-Year Plan, FY1982-1985, for the purpose of new investments or expansions. Among investment projects implemented may be noted the following:

Food Industries Corporation

Tapioca Plant (completed FY1983; ADB loan)
Thazi Canning Factory (completed FY1983; French loan)
Daik-U Mono Sodium Glutamate Factory (completed FY1984; Chinese loan)
Shwenyaung Sugar Mill (completed FY1983; Dutch loan)
Kyauktaw Sugar Mill and Alcohol Destillery Plant (completed FY1983; Dutch loan)
Daik-U Canning Factory (completed FY1985; Italian loan)
Bilin Sugar Mill Extension (completed FY1985; Chinese loan)
Yedashe Sugar Mill (to be completed FY1988; Japanese OECF-loan)
Sagaing Flour Mill (to be completed FY1986; Danish loan)
No.2 Alcohol Destillery Plan Renovation (to be completed FY1989; Japanese OECF-loan)
Zeyawady Sugar Mill (completed FY1985; Czechoslovak loan).

Textile Industries Corporation

No. 3 Garment Factory (completed FY1984; Japanese OECF-loan)
Shwedaung Textile Finishing Plan (to be completed FY1989; IDA-loan).

Ceramic Industries Corporation

Kyangin Cement Mill Extension (completed FY1985; Japanese OECF-loan)
Pa-an Cement Mill (to be completed FY1986; French loan)
Chauk Ceramic Glassware Factory (to be completed FY1987)
Sodium Silicate Manufacturing Project (completed FY1985; ADB-loan).

Metal Industries Corporation

Steel Mill Renovation Project (to be completed FY1987; Japanese OECF-loan).

Agricultural and Farm Produce Trade Corporation

Project of 12 100-ton Rice Mills (to be completed FY1986; ADB loan)
Project of 2 150-ton and 6 100-ton Rice Mill Project (completed FY1984; Japanese OECF-loan)
Pazundaung 100-ton Rice Mill Project (completed FY1983; Chinese loan)
Project of 3 250-ton Rice Mills (to be completed FY1987; Japanese 2nd OECF-loan).

Timber Corporation

No.4 Plywood Factory (completed FY1983)
Wood Industries Project No.2 (to be completed FY1988; World Bank loan).

Paper and Chemical Industries Corporation

No.2 Paper Mill Project (Phase III) (to be completed FY1988; Japanese OECF-loan).

Petrochemical Industries Corporation

No.3 Fertilizer Plant Project - Kyawswa (completed FY1984; FRG loan).

Heavy Industries Corporation

Thaton Tyre and Rubber Products Manufacturing Project (completed FY1985; Czechoslovak loan)
Malun Diesel Injection Pumps and Nozzles Manufacturing Project (completed FY1985, Czechoslovak loan).

ANNEX C

THE COMPLETED, APPROVED AND/OR OPERATIONAL TECHNICAL CO-OPERATION PROJECTS OF UNIDO SINCE 1972

ANNEX C

The completed and on-going technical co-operation projects of UNIDO

Socialist Republic of the Union of BURMA

(1)

since 1972

Backstopping Responsibility	Spec.Act.Code/ Progr.Element	Project Number	Project Title
IO/INFR	00.0	RP/BUR/72/001	Organization and administration of industrial services
IO/INFR	31.3.A	IS/BUR/74/051	Technical assistance for development, adaptation and transfer of technologies to industry based on indigenous resources
IO/INFR	31.3.J	SI/BUR/81/802	Technological support to the industrial co-operatives movement
IO/FEAS	31.5.A	DP/BUR/73/015	Assistance in the in-plant training of refinery personnel
IO/FEAS	31.5.A	DP/BUR/73/016	Expansion of research facilities and training of refinery personnel
IO/FEAS	31.5.A	DP/BUR/79/006	Expansion of training in petrochemical industries, phase II
IO/AGRO	30.7.02	IS/BUR/73/011	Feasibility study on packaging
IO/AGRO	30.7.02	RP/BUR/73/001	Packaging techniques
IO/AGRO	31.7.D	DP/BUR/74/031	Assistance to the rubber goods manufacturing industry
IO/T/AGRO	J13104	DP/BUR/82/007	Development Centre for Leather Technology (DCLT) - preparatory assistance
IO/T/AGRO	J13104	DP/BUR/82/008	Development Centre for Rubber Technology (DCRT)
IO/T/AGRO	J13104	SI/BUR/84/802	Assistance in leather grading and quality control
IO/ENG	30.1.05	RP/BUR/74/001	Maintenance and repair
IO/T/ENG	J13316	DP/BUR/74/022	Strengthening the production orientation and technical support services at the Rangoon Institute of Technology
IO/CHEM	30.4.03	DP/BUR/69/006	Pulp and paper technology
IO/CHEM	30.5.00	DP/BUR/70/011	Universal laboratory pilot plant
IO/CHEM	30.5.03	IS/BUR/72/005	Assistance in phenol recovery from petroleum and utilization of recovered phenols

UNIDO's Completed Technical Co-operation Projects

Socialist Republic of the Union of BURMA
(2)

Backstopping Responsibility	Spec.Act.Code/ Progr.Element	Project Number	Project Title
IO/CHEM	32.1.A	DP/BUR/70/012	Universal process training
IO/CHEM	32.1.C	IS/BUR/74/010	Establishment of a pilot plant for production of electolytic manganese dioxide (small equipment component only - main project cancelled)
IO/CHEM	32.1.C	SI/BUR/83/801	Assistance in potash production
IO/CHEM	32.1.D	IS/BUR/74/002	Technical adviser on insulin extraction
IO/CHEM	32.1.D	IS/BUR/74/050	Feasibility study on the essential oils industry
IO/CHEM	32.1.E	SI/BUR/74/848	Fact-finding mission for finalizing project document 'Establishment of a pilot plant for pulping research on tropical raw materials at the Central Research Organization (CRO)'
IO/CHEM	32.1.E	SI/BUR/74/849	Fact-finding mission for finalizing project document on test production of kraft paper at Kanbe
IO/CHEM	32.1.G	IS/BUR/73/014	Assistance in the recovery of phenols from petrochemical distillates, phase II
IO/CHEM	32.1.G	SI/BUR/73/814	Assistance in the recovery of phenol from petrochemical distillates, phase II
IO/CHEM	32.1.G	SI/BUR/74/852	Preparatory mision on pilot plant for pyrethrum extraction and pesticide formulation
IO/CHEM	32.1.G	SI/BUR/81/801	Fact-finding mission pesticide formulation industry
IO/CHEM	32.1.H	DP/BUR/72/007	Establishment of applied polymer research laboratory at the Central Research Organization
IO/T/CHEM	J13420	SI/BUR/84/801	Study tour on production of sea salt and by-products
IO/T/CHEM	J13423	DP/BUR/85/017	Examination of local kaolin for use as paper filler
IO/T/CHEM	J13423	SI/BUR/84/803	Assistance on jute waste utilization in paper/board making

(Annex C cont.)

UNIDO's Completed Technical Co-operation Projects

Socialist Republic of the Union of BURMA
(3)

Backstopping Responsibility	Spec.Act.Code/ Progr.Element	Project Number	Project Title
PC/DEV	30.1.Z	RP/BUR/80/001	Visit to UNIDO of Director General of the Industrial Planning Department in Rangoon, Burma
IS/REG	62.6.Z	RP/BUR/79/001	Industrial development programme - agro-industries
IO/COOP	31.1.C	AR/BUR/76/001	Industrial sector mission to Burma

(Annex C cont.)

UNIDO's Approved and/or Operational Technical Co-operation Projects
(approved = PAD issued)

Socialist Republic of the Union of BURMA

Backstopping Responsibility	Progr.Element	Project Number	Project Title
IO/IIS/FEAS	J12517	DP/BUR/80/015**	Feasibility studies in support of international drinking water supply and sanitation decade
IO/I/AGRO	J13106	DP/BUR/85/018	Laboratory examination of spirulina samples
IO/T/MET	J13207	SI/BUR/86/811	Formulation of development programme to improve testing, quality and standards for welding
IO/T/MET	J13209	SI/BUR/86/863	Technical assistance to Sinmalaik Foundry in establishing a quality control laboratory and implementing an appropriate technology of cast grinding balls
IO/T/CHEM	J13421	DP/BUR/80/011*	Establishment of a pilot plant for pesticide formulation
IO/T/CHEM	J13423	DP/BUR/77/004**	Establishment of a pilot plant for pulp and paper research and training on tropical raw materials at the Central Research Organization
IO/T/CHEM	J13423	DP/BUR/85/015	Lignin utilization from pulp mill black liquors

* Large-scale project (= total allotment $150,000 or above)
** Total allotment $1 million or above

ANNEX D

LEADING COMPANIES IN BURMA, 1984/85

Leading Companies in Burma, 1984/85
(values[a/] in $ million)

	Value of output covered	Cash basis
Motion picture corp	-	1.7
Printing and publication	20.7	0.4
Agricultural corporation	65.9	(91.2)
People's pearl and fishery corp	-	0.48
Timber corporation	51.6	24.02
Industrial enterprises		
includes:		
Food industries corp		
Ceramic ind. corp		
Petro-chemicals ind. corp		
Heavy ind. corp		
Electric power corporation	34.5	(2.10)
Mining corporation No.1 (copper, lead)		(17.3)
Mining corporation No.2 (tin)	334.3	3.6
Mining corporation No.3 (iron)		0.6
Myanma oil corporation	11.5m barrels oil 29.6bn cu.ft. gas	(18.45)
Burma five star shipping corporation	-	7.73
Inland water transport corporation	-	(3.5)
Road transport corporation	-	3.10
Burma railways corporation	-	0.036
Burma airways corporation	-	(1.67)
Port corporation	-	6.6
Post & telecommunications corp	-	8.02
Banks & insurance	-	19.8
Trade corporation	-	32.5
Construction corporation	63.6	-
Agricutlural & farm produce corp	290.6	-
Foodstuff & general merchandise trade	5.98	-
Restaurant & beverages trade corp	4.7	-

Source: South Magazine, June 1985.

a/ Surplus/deficit of State Economic Enterprises.

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Uruguay	UNIDO/IS.462	1984
Bangladesh	UNIDO/IS.510	1985
Swaziland	UNIDO/IS.516	1985
Zambia	UNIDO/IS.520	1985
The Philippines	UNIDO/IS.527	1985
Pakistan	UNIDO/IS.535	1985
The Sudan	UNIDO/IS.541	1985
Malaysia	UNIDO/IS.545	1985
India	UNIDO/IS.547	1985
Thailand	UNIDO/IS.548	1985
Peru	UNIDO/IS.552	1985
Nigeria	UNIDO/IS.557	1985
Bolivia	UNIDO/IS.564	1985
Chile	UNIDO/IS.579	1985
The People's Republic of China	UNIDO/IS.582	1985
Bahrain	UNIDO/IS.592	1985
Sri Lanka	UNIDO/IS.613	1986
Cuba	UNIDO/IS.615	1986
Tanzania	UNIDO/IS.628	1986
Egypt	UNIDO/IS.637	1986
Mali*	UNIDO/IS.640	1986
Zaire*	UNIDO/IS.644	1986
Pacific Island States: Papua New Guinea, Fiji, Solomon Islands, Western Somoa, Vanuatu, Tonga Kiribati, The Federated States of Micronesia and Micro States	UNIDO/IS.645	1986
Côte d'Ivoire*	PPD.6	1986
Saudi Arabia	PPD.7	1986
Congo*	PPD.10	1986
Central African Republic*	PPD.11	1986
Colombia	PPD.16	1986
Ghana	PPD.18	1986

(Continued)

The Republic of Korea	PPD.29	1987
Botswana	PPD.37	1987
The Caribbean Region: Jamaica, Trinidad and Tobago, Guyana, Barbados, The Netherlands Antilles, The Bahamas, Belize, Bermuda, St. Lucia, St. Vincent & The Grenadines, Grenada, Antigua and Barbuda, Dominica, St. Christopher-Nevis, Cayman Islands, British Virgin Islands, Montserrat, Turks and Caicos Islands, and Anguilla	PPD.51	1987
Malawi	PPD.58	1987
Indonesia	PPD.60	1987
Zimbabwe	PPD.63	1987

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* Also available in French.