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INDUSTRIAL DEVELOPMENT REVIEW SERIES

BANGLADESH

Strengthening the indigenous base for industrial growth

Prepared by the
Regional and Country Studies Branch

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INDUSTRIAL DEVELOPMENT REVIEW SERIES

BANGLADESH

Strengthening the indigenous base for industrial growth

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 industry; 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. The Reviews do not represent in-depth industrial surveys. With an exclusive focus on industry they present information and analyses on the broad spectrum of the industrial development process in the countries concerned in a condensed form. In the course of preparing the present Review no field survey was undertaken to obtain enterprise-level data.

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. The presentation of up-to-date information on sub-sectoral manufacturing trends is 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 relevant national authorities and institutions and other readers will provide comments and further information. Such response will greatly assist in updating the Reviews.

The present Review was prepared with the assistance of Dr. Javed Ansari as UNIDO consultant. Chapter 1 and 2 are analytical in character, 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. Chapter 3 focusses on the problems and prospects of selected sub-sectors of manufacturing. Chapter 4 reviews policy measures relevant to industrial development and presents information on the more important governmental and other institutions involved in industrial development. Chapter 5 examines the issues and options for the 1990s, with particular reference to industry's role in increasing resilience to natural disasters, external dependence, privatization, employment and basic needs, and identifies crucial areas requiring multilateral 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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EXPLANATORY NOTE

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.

Dated divided by a slash (1987/88) indicate a fiscal year or a crop year. Dates divided by a hyphen (1987-1988) indicates the full period, including the beginning and the end years.

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

Percentage may not add to 100.0 precisely due to rounding.

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 (-) indicates that the item is not applicable or the amount is negligible.

The following abbreviations are used in this document:

BADC	Bangladesh Agricultural Development Corporation
BBS	Bangladesh Bureau of Statistics
BCIC	Bangladesh Chemical Industries Corporation
BIDS	Bangladesh Institute of Development Studies
BJMC	Bangladesh Jute Mills Corporation
BJMA	Bangladesh Jute Mills Association
BSB	Bangladesh Shelpa Bank
BSRS	Bangladesh Shelpa Rim Sangastha
BTMC	Bangladesh Textile Mills Corporation
CIB	Capital Investment Board
CMI	Census of Manufacturing Industry
EPIDC	East Pakistan Industrial Development Corporation
EPR	Effective Protection Rate
EPZ	Export Processing Zome
GDP	Gross domestic product
GNP	Gross national product
IBBL	Islamic Bank of Bangladesh Ltd.
IMF	International Monetary Fund
ISIC	International Standard Industrial Classification
MNC	Multi National Corporation
MVA	Manufacturing value added
NCID	National Council of Industrial Development
NCMBC	National Commission on Money, Banking and Credit
NIP	New Industrial Policy

OECD	Organization for Economic Co-operation and Development
RIP	Revised Industrial Policy
SAARC	South Asian Associations for Regional Co-operation
SAF	Structural Adjustment Facility
SRD	Special Drawing Rights
TIP	Trade and Industry Report Programme
Tk	Taka
TSP	Triple Superphosphate
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
WES	Wage Earners Schemes
ZPCL	Zia Fertilizer Company Ltd.

BASIC INDICATORS 1

The economy

GDP (1986/87)	:	Tk492,082 million
Population (1986/87)	:	104.1 million
Annual average growth rate	:	2.5 per cent
Labour force (1985) (percentage of population of working age, 15-64 years)	:	53 per cent
GNP per capita (1986)	:	$160

Annual growth rate of GDP (per cent) :

1981/82	1982/83	1983/84	1984/85
1.4	3.4	4.2	3.8

1985/86	1986/87	1987/88[a/]
4.5	4.0	2.0

Distribution of GDP by sector of origin (per cent at current prices) :

	1980/81	1986/87
Agriculture	46.7	47.3
Industry	15.7	13.5
Manufacturing	9.8	7.5
Construction and utilities	5.9	6.0
Services	37.6	39.2

Inflation rate (per cent) :

1982	1983	1984	1985	1986	1987
12.5	9.4	10.6	10.7	11.0	9.5

Exchange rate (Principal rate, end of period) (Tk equivalents to $1) :

1983	1984	1985	1986	1987
25.0	26.0	31.0	30.8	31.2

1988(Oct.)
32.0

a/ Estimate.

BASIC INDICATORS 2

Resources and food aid

Food crops (1996/87) (in million tons)	:	Rice (15.41) of which: aus (3.13), aman (8.27) and boro (4.01); wheat (1.09)
Cash crops (1986/87) (in million tons unless indicated otherwise)	:	Jute (6,753,000 bales), cotton (22,000 bales), pulses (0.17), oilseeds (0.25), sugarcane (6.9), potatoes (1.07), sweet potatoes (0.55), tea (37,000 tons)[a/] tobacco (40,000 tons)
Livestock (1984) ('000 head)	:	Cattle (36,300), sheep (2,000), goats (12,050)
Fishery production (1983) (,000 tons)	:	Freshwater and diadrom (585), marine fish (144)
Forestry production (1983) ('000 tons)	:	Fuelwood and charcoal (31,118), industrial roundwood (933), sawnwood and panels (187)
Receipts of food aid (tons) cereals (1985/86)	:	Wheat (1,263,200), rice (23,600)
	:	Vegetable oil (26,600), skimmed milk (9)[b/] butter oil (1,500)[c/]

a/ 1985/86.

b/ 1985.

c/ 1984.

BASIC INDICATORS 3

Foreign trade and balance of payments

Exports (1987)	:	$1,076.9 million
Major products (1985/86) (per cent)	:	Jute manufacturing (30.6), ready-made garments (19.7). raw jute (12.5), prawns and shrimps (11.0), leather and leather manufacturing (8.6)
Main destinations (1986) (per cent)	:	United States (23.7), EEC (20.7), Asia (13.2), Middle East (9.5), Japan (8.0), Africa (8.0)
Imports (1987)	:	$2,458.2 million
Major products (1985/86) (per cent)	:	Manufactured goods classified by material (24.7), machinery and transport equipment (19.2), foods (rice , wheat, etc.) (13.0), oil and lubricant (12.2), chemical and pharmaceutical products (11.5), vegetable oil and animal fat (10.3)
Main suppliers (1985/86) (per cent)	:	Asia (21.4), EEC (16.5), Japan (13.9), Middle East (9.2), United States (8.5)
Balance of payments (1987) (current account deficit)	:	$338.3 million
Official reserves (1987) (excluding gold)	:	$843.1 million
External debt	:	$7.28 billion (1986), $7.86 billion (1987)
as percentage of GNP (1986)	:	47.5 per cent
Debt service ratio (1986) (as percentage of exports of goods and services)	:	25.1 per cent

BASIC INDICATORS 4

The manufacturing sector

Manufacturing value added (MVA) (1986/87)	:	Tk40,438 million ($1,320 million)				
MVA per capita (1984)	:	$16				
Average annual growth of MVA (per cent)	:	1981/82	1982/83	1983/84	1984/85	
		1.6	-1.6	3.6	3.2	
		1985/86	1986/87			
		1.9	6.4			
Employment in manufacturing (1984/85) as percentage of total labour force	:	2.68 million 9.3 per cent				
Composition of MVA (percentage share)	:		1980/81		1986/87	
Consumer goods			61.8		58.6	
Intermediate goods			34.7		36.5	
Capital goods			3.5		4.9	
Trade in manufactures (1985/86)[a/]	:					
Exports		Tk19,871 million				
Imports		Tk35,221 million				
Share of manufactures (1985/86)[a/]:						
In total exports		72.5 per cent				
In total imports		68.1 per cent				

a/ UNIDO estimate.

BASIC INDICATORS 5

Inter-country comparison of selected indicators[a/]

	Unit	Bangladesh	India	Indonesia	Nepal	Pakistan	Sri Lanka
I. Demographic indicators							
Area	thousand sq km	144	3,288	1,919	141	804	66
Population (mid-1986)	million	103.2	781.4	166.4	17.0	99.2	16.1
Population growth (1980-1986) (average annual growth rate)	per cent	2.6	2.2	2.2	2.6	3.1	1.5
Labour force (1985) (percentage of population of working age, 15-64 years)	per cent	53	56	56	54	53	62
II. Economic indicators							
GDP (1986)	US$ million	15,460	203,790	75,203	2,200	30,080	5,880
GDP growth (1980-1986) (average annual growth rate)	per cent	3.7	4.9	3.4	3.5	6.7	4.9
GNP per capita (1986)	US$	160	290	490	150	350	400
Agriculture (1986)	per cent of GDP	47	32	26	62[b/]	24	26
Industry (1986)	per cent of GDP	14	29	32	12[b/]	28	27
Manufacturing (1986)	per cent of GDP	8	19	14	5[b/]	17	15
Services (1986)	per cent of GDP	39	39	42	26[b/]	47	47
Exports of goods and non-factor services (1986)	per cent of GDP	6	6	21	13	12	23
Merchandise trade							
Exports (1986)	$ million	880	11,741[c/]	14,824	142	3,384	1,215
Imports (1986)	$ million	2,701	16,260[c/]	13,371	459	5,377	1,948
III. Industrial indicators							
MVA (1985) (current dollars)	$ million	1,332	35,597	11,447	108[b/]	4,949	804
Manufacturing growth (1980-1986) (average annual growth rate)	per cent	2.1	8.2	7.7	...	9.3	5.6
Share of manufactured exports in total exports (1986)	per cent	73	52	22	68	68	41
Share of manufactured imports in total exports (1986)	per cent	56	66	77	73	61	68

a/ Based on the World Bank data presented in the World Development Report 1988. It should be noted that the UNIDO data base, United Nations statistics, national statistics and World Bank data base do not always tally precisely and, therefore, discrepancies may be found between Basic Indicators 5, and the text Tables.

b/ For years other than those specified.

c/ Estimates.

SUMMARY

The economy of Bangladesh is suffering from the aftermath of the country's worst flood disaster in recent memory. Growth of GDP in real terms is expected to falter from 2 per cent in 1987/88 to sluggish or even negative rate during 1988/89 against the targeted growth rate of 6.1 per cent. A 7 per cent decline in agricultural production is forecast for 1988/89, while widespread damage to factories and equipment tends to reduce the pace of industrial expansion from the envisaged target of 7 per cent to 4 per cent.

The total cost of reconstructing infrastructural facilities is tentatively estimated at $1,137 million. The 1988/89 budget estimates announced in July 1988 and the Annual Development Plan announced earlier that year will have to be substantially revised in the face of a large portion of the resources being diverted for recropping and reconstruction activities.

External concessionary financing continues to be a major propellant to economic reconstruction and growth. Despite the concessionary nature of most external financing debt servicing looms a burden as total external debt exceeds $8 billion, with debt servicing reaching over 25 per cent of export earnings.

Although prospects for economic growth remain unpropitious because of the major natural disasters in two consecutive years, the growth potential of the economy is indicated by the fact that in years with normal weather conditions per capita income growth has always been achieved. This inherent growth potential could be exploited by increasing the resilience of the country to intermittent natural hazards. This endeavour could be achieved by enhancing the capacity to domestically generate investible resources from different segments of the economy.

The manufacturing sector in Bangladesh is characterized by marked industrial dualism. The large- and medium-scale enterprises, accounting for two-thirds of MVA, 20 per cent of manufacturing employment and 10 per cent of vital industrial units, are concentrated in the textile, chemical and pharmaceutical, food and metal product branches. The small-scale and cottage industries employing 80 per cent of the manufacturing labour force are generally concentrated on food, textiles and wood products. Within the cottage industries group units producing cane, bamboo, and wood products account for 16 per cent of gross output and 22 per cent of employment. Major growth potential has been identified for furniture, light engineering work, cycle repairs and tailoring.

In contrast to a significant increase in the index of industrial production during 1973/74-1980/81, industrial expansion remained virtually unchanged during 1980/81-1985/86 as the gains of 1983/84 and 1984/85 barely compensated for the losses of the preceding three years. Manufacturing production is unlikely to have increased by more than 2 to 3 per cent during 1987/88 and 1988/89.

Branches with particularly weak performance in the 1980s include jute manufacturing, Bangladesh's principal foreign exchange earner, cement, bakery products, alcoholic beverages, sugar products, tea and electric motors. While the growth of key traditional products remained depressed in the 1980s, a small number of the industrial branches, especially chemical products, expanded rapidly to effect some restructuring in the manufacturing sector.

With the exception of the fertilizer branch, productiviy growth has not been high in the sub-sectors of manufacturing. Low utilization of installed capacity was found to be a larger constraint on productivity growth than increasing input costs. The share of value added in gross output is highest for beverages, tobacco, industrial chemicals, cement, pottery and china, electrical machinery and rubber products. The overall financial performance of the industrial parastatals has been very poor in the 1980s. In jute, steel and petroleum products productivity levels in 1986/87 were far below the 1979/80 levels. The future of jute manufactures looks particularly uncertain due to the difficulties sorrounding the renewal of the international jute agreement and the availability of substitutes. The export success story in Bangladesh is confined to garments, processed shrimps and sea foods. Earnings from garments rose by 500 per cent during 1983/84, and by 1987 it accounted for about 20 per cent of total export earnings, a share second only to earnings from jute exports. Earnings from processed shrimps and sea foods, representing 13 per cent of export earnings, have more than doubled during 1983-1987.

Selective policies have been adopted to strengthen small and cottage enterprises, with a view to redesigning the institutional support system, increasing the level of managerial and technical training facilities and modifying the process of credit distribution. The use of labour-intensive technology has proved to be more efficient in the production of ready-made garments, justifying the basis for an "indigenization" of the export garment sector. A wide range of measures is required to increase the efficiency of country boat operations. Competitiveness of existing country boats can be increased by making them more specialized and linking them to the trade of specific commodities. Total mechanization could prove to be futile given the existing loads and rates of return. Commitments of financial and technical assistance to the specific needs of boat building could yield very substantial development gains in the medium and long run.

The future course of industrialization in Bangladesh requires a drastic reassessment of specific objectives, with a view to addressing certain emerging issues and selecting options for fruitful growth. The country's urgent need is to reduce its vulnerability to flood disasters. Such an endeavour could have a strong industry component particularly when many of the inputs for building dams, barrages and associated infrastructural facilities could be locally produced. The South Asian Association for Regional Co-operation (SAARC) countries, India and Pakistan in particular, possess rich experience in this field. The capital costs of such a project are likely to be beyond Bangladesh's capacity, but a co-ordinated regional programme could increase the flow of resources for such a task.

It is contended that every major industrial project now depends crucially upon the availability of commodity- and project-related concessional finance in view of the industrial sector's inability to generate significant levels of investible surplus. Rationalization of public sector enterprises, currently under way, is an important step towards increasing industrial efficiency. The process of divestment is based on expectations that transfer of loss making enterprises to the private sector would lead to quick improvements in performance and profitability. However, a major problem is associated with the realistic assessment of these expectations as the empirical base of studies pertaining to the performance of private enterprises is extremely weak. By raising productivity and remunerative employment levels in public and private industries the future course of strengthening the indigenous base for industrialization could be attuned towards alleviating poverty and strengthening the base for self-sustaining industrial growth.

1. THE ECONOMY OF BANGLADESH

1.1 Recent economic trends

The economy of Bangladesh recorded a positive GDP growth rate of about 2 per cent in real terms in 1987/88 despite widespread natural hazards and political unrest. Although political stability was restored, the country fell victim to a massive flood disaster in mid-September 1988, causing more damage to the economy than the floods of the previous year.[1/] The setback to the economy is severe, and growth of GDP is expected to stagnate and even decline during 1988/89 against the targeted growth rate of 6.1 per cent.

The agricultural sector which was severely affected by the floods of 1987 is expected to suffer another major setback. Jute production which fell by 30 per cent in 1987/88, is unlikely to recover substantially during 1988/89. Prospects for jute are particularly uncertain due to the difficulties encountered in the negotiations for the renewing of the International Jute Agreement which expires in mid-1989. Rice production is estimated to be close to 20 per cent of the targeted food grains output, while widespread damage caused to factories and equipment is expected to reduce the pace of industrial expansion from a target of 7 per cent to about 4 per cent. The total cost of recouping infrastructural facilities is tentatively estimated at $1,137 million. In view of an urgent need to mount the extensive reconstruction programme, around 40 per cent of the rehabilitation exercise is planned to be carried out during 1988/89. This would absorb around 30 per cent of this year's annual development programme budget.

A rise in government expenditure associated with flood relief was the major cause of a 13.5 per cent increase in the budgetary deficit during 1987/88. The 1988/89 budget estimates announced in July 1988 and the Annual Development Plan announced earlier that year will have to be substantially revised to take account of the full impact of the financing of the recropping and rehabilitation operations. It is clear however that the government's development expenditure is likely to remain seriously constrained during 1988/89 in the wake of a tax revenue loss exceeding Taka (Tk)1 billion.

Given one of the lowest tax elasticities in South Asia, any increase in GDP growth cannot be expected to have a proportionate impact on the budgetary deficit. A large reduction in the budgetary deficit is unlikely to be the case during 1988/89 when a substantial proportion of government resources will have to be diverted for financing the recropping, and reconstruction activities. The dependence on aid finance is unlikely to decline in the short run due to the commitment of government funds to the relief operation and the

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1/ The 1988 flood disaster was the worst natural catastrophe ever experienced by Bangladesh. In 1987 floods of a severity encountered once in 30 to 70 years covered 36 per cent of the country. In 1988 the flood waters reached approximately 84 per cent of the country and directly affected 45 million people out of a total population of 104 million. The 1988 floods extended across 53 of the 64 districts, covering 323 of the country's 460 sub-districts. The 1988 floods are generally estimated to have caused greater economic damage than the floods of 1987. Total losses caused by the 1987 floods were estimated at about $1 billion (1987 prices) and that of the 1988 flood damage is likely to be significantly greater.

severe impact of a succession of natural disasters on the national capacity for generating and mobilizing domestic savings. The Annual Development Plan for 1988/89 envisaged a total development expenditure of Tk53 billion - the foreign financing to total resources ratio was expected to be about 85 per cent, making Bangladesh one of the most aid dependent economies in the world.[1/]

Growing aid dependence is imposing an increasingly severe constraint on the development of the economy. Despite the concessionary nature of most foreign financing debt servicing has become a major problem in recent years. Total external debt currently exceeds $8 billion and the debt servicing ratio has increased from about 12 per cent in 1980 to over 25 per cent in 1986. During 1987 Bangladesh obtained $57.5 million from a $182.56 million Structural Adjustment Facility (SAF) established by the IMF over the period 1987-1989. In early 1988 IMF approved a loan of $86.25 million as the second instalment of this credit facility. In early 1989 the IMF has approved a loan equivalent to Special Drawing Rights (SDR) 38.8 million in support of the Programme under the third annual structural facility. Bangladesh also qualifies for obtaining credit from the Enhanced Structural Adjustment Facility (ESAF) established by the IMF in early 1988. Bangladesh's share of these new concessional resources[2/] is not yet certain. Commitments by the Paris Club have during the past two years remained significantly below development financing requirements estimated by the government.

The need for external concessionary financing is also underlined by a marked deterioration in the current account deficit provisionally estimated at over $700 million in 1987/88 and unlikely to fall during 1988/89. Import expenditure is 50 per cent higher than export earnings and remittances from Bangladeshis working overseas in a normal year are considerably higher in disaster years requiring massive food imports. Although foreign remittances have continued to grow export revenue growth has remained confined to the garments and frozen shrimps sub-sectors. The continued growth of garment exports are likely to be curtailed by increased protectionist measures enacted by the United States government during 1988 to limit textile imports. Jute exports which still account for over a third of export earnings have continued to decline during 1987/88 and the uncertainties related to the possibility of the lapsing of the International Jute Agreement in 1989 make it unlikely that this declining trend will be reversed over the medium-run.

Food grain imports which were originally estimated at 1.7 million tonnes for 1987/88 are now estimated to reach 2.7 million tonnes for 1988/89, up by 1 million tonnes. In the face of the recent sharp increase in international food grain prices, the volume of food grain aid commitments, that are fixed in monetary terms, could fall drastically. Viewed within this perspective food grain imports are expected to rise by $155 million from pre-flood estimates. While imports have been revised upward, export projections have been reduced by $100 million as a result of adverse impact of the floods on jute crops,

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1/ As against this the share of gross domestic investment financed by foreign inflows was about 16 per cent in Pakistan in 1987.

2/ Total resources under ESAF are estimated at $8.2 billion over a three-year period to be distributed among 62 developing countries on terms and conditions broadly similar to those governing the SAF programmes.

jute-mill operations, leather supplies and production of ready-made garments. The overall balance of payments is likely to deteriorate further by $185 million during 1988/89.

The envisaged annual average growth rate of 5.4 per cent set by the Third Five-Year Plan (1985/86-1989/90) is not likely to be achieved. Even during the first two years, which were "normal" in terms of weather conditions, the growth rate fell short of the planned target and averaged around 4.2 per cent. Although reconstruction remains a top priority, there is also an urgent need to tackle the structural weaknesses of the economy which have impeded self-sustaining development.

1.2 Economic structure

Bangladesh is the eighth largest[1/] and the fourth poorest country in the world.[2/] Although population density is also among the highest in the world Bangladesh has enough land to feed a larger population much better and still produce a surplus of farm products for export.[3/] The agricultural resource base remains underdeveloped and at least 80 per cent of the population is considered below the officially defined poverty line. Acute poverty is the single most distressing feature of the Bangladesh economy.[4/]

Despite the upsurge in growth during 1975-1982, Bangladesh has tended to fall behind the other South Asian economies during the past two decades. In 1971 Bangladesh GDP *per capita* was approximately 83 per cent of the *per capita* of Pakistan. By 1980 the value of this ratio was about 40 per cent. While *per capita* income has grown at an annual average rate of 2.4 per cent in Pakistan, 2.9 per cent in Sri Lanka, 1.9 per cent in Nepal, 1.8 per cent in India and in the Maldives[5/] over the period 1965-1986, the rate of growth in Bangladesh was only 0.9 per cent. Moreover while GDP *per capita* declined by an average of about 1 per cent during 1986/87 - 1988/89 in Bangladesh, most of other South Asian countries continued to experience *per capita* income growth.[6/]

The declining growth performance has been accompanied by a worsening income distribution pattern. A recent study on the Bangladesh economy calculates that the top 2 per cent of the population accounts for 12.5 per

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1/ Ranked according to mid-1987 population.

2/ Ranked according to GDP *per capita* in 1986, *World Development Report, 1988*. Figure not available for Bhutan.

3/ This is among the major conclusions, a study of the Chr. Michelsen Institute, *Bangladesh: Country Study and Norwegian Aid Review*, Bergen, 1986, p. vi.

4/ *Per capita* income in Bangladesh is about 50 per cent of the income level in India, 40 per cent of the *per capita* income level in Pakistan and less than 1 per cent of the average income in the United States.

5/ These countries along with Bangladesh are members of SAARC (South Asian Association for Regional Co-operation).

6/ The only SAARC member with a weaker growth performance is Bhutan - annual average GDP growth of 0 per cent during 1965-1986.

cent of the national income while the share of the bottom 20 per cent of Bangladeshi national income is only about 6 per cent.[1/] The flood disasters of 1987 and 1988 are likely to have affected the poor income groups particularly severely and the proportion of the population below the subsistence level[2/] is likely to have increased significantly in recent years.

The majority of the poor live in Bangladesh's rural countryside. Eighty five million people live in the rural areas; 75 million are dependent on agriculture for income and employment. Agricultural production has grown at an annual average rate of 1.9 per cent per annum in Bangladesh, as against 3.9 pe cent in Sri Lanka, 3.3 per cent in Pakistan and 2.0 per cent in India over the period 1965-1986. The share of agriculture in GDP stood at 47.3 per cent in 1986/87 (Table 1.1). Bangladesh is the most agrarian oriented economy in the SAARC region with the possible exception of Nepal.

Industry (including manufacturing, construction and utilities) accounted for about 12 per cent of GDP at the time of independence in 1971 - this share rose imperceptibly to 16 per cent by fiscal 1981/82 and fell to 13.5 per cent in 1986/87. Manufacturing accounts for roughly 60 per cent of the value of industrial output. In 1972/73 the manufacturing sector's share of industrial value added was about 74 per cent. The share of manufacturing in GDP in current prices has hardly changed in the early 1980s. Table 1.1 reveals the declining share of MVA in GDP for four consecutive years ending in 1986/87.

The most rapidly growing sectors in the Bangladesh economy have been services, construction and trade. Services grew at an annual average rate of 8 per cent during the 1970s and at over 4 per cent during 1980-1986. Their share in GDP has increased from 31 per cent in 1971/72 to about 39.2 per cent in 1987.

The pace of economic expansion since independence in 1971 has to a large extent been driven by foreign concessional assistance inflows.[3/] The gross domestic saving as a ratio of GDP has declined from 8 per cent in 1965 to 1.8 per cent in 1985/86 (see Annex Table A-1) - and has probably been negative during 1988/89. The gross domestic investment ratio fell from 16 per cent in

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1/ Chr. Michelsen Institute, op.cit., p. 8. The study argues that a transfer of income from the rich can have a very substantial impact on the living standards of the poor in Bangladesh.

2/ The 1985/86 Household Expenditure Survey conducted by the Bangladesh Bureau of Statistics (BBS) shows that around 45 per cent of the population does not have the means to afford the minimum necessary for subsistence by international standards. The incidence of poverty is higher in rural areas. The Survey results indicate that 47 per cent of the poor, who do not have the income necessary to purchase 82 per cent of the minimum necessary diet, remain in extreme poverty.

3/ Gross foreign aid disbursement has increased from $551 million in 1972/73 to $1.219 billion in 1985/86. Over this period gross foreign aid inflows were 10 per cent higher than the cumulative current account deficit and equalled 53 per cent of Bangladesh's total expenditure on merchandise imports. During the period 1983-1988 foreign aid disbursements equalled about 83 per cent of the expenditure on the annual Development Programme.

1981/82 to 12.4 per cent in 1987/88 (although there have been significant cutbacks in disaster stricken years). Bangladesh currently has the lowest saving and investment rates within the SAARC region.[1/]

Table 1.1: Distribution of GDP by sector of origin, 1980/81-1986/87
(percentage at current prices)

Sector	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87[a/]
Agriculture	46.7	45.9	47.1	48.4	49.8	46.9	47.3
Industry	15.7	16.0	15.5	14.6	14.3	14.3	13.5
Mining and quarrying	-	-	-	-	-	-	-
Manufacturing	9.8	9.7	9.7	8.8	8.3	8.1	7.5
Large- and medium-scale	5.7	5.6	5.4	4.9	4.6	4.5	4.2
Small-scale and cottage	4.1	4.1	4.3	3.9	3.7	3.6	3.3
Construction	5.6	6.0	5.2	5.2	5.4	5.6	5.3
Electricity, gas and water	0.3	0.3	0.5	0.5	0.5	0.6	0.7
Services	37.6	38.0	37.4	37.0	35.8	38.7	39.2
GDP at market prices (Tk million)	222,263	265,144	288,423	349,922	416,962	462,013	539,174

Source: Bangladesh Bureau of Statistics.

a/ Preliminary.

Although nominal aid disbursements have increased rapidly, their real value has remained constant. The value of foreign aid disbursements rose by 234 per cent over the 1972-1986 period while the import price index rose by 250 per cent.[2/] This would suggest a modest decline in the real value of aid disbursements. During the 1980s the import price index has tended to increase significantly faster than the level of aid disbursements. The indications therefore are that Bangladesh cannot expect a major increase in the real value of concessional development aid in the medium run.[3/] There is thus an important need to develop a macroeconomic strategy which lays emphasis on the capacity of the economy to earn more foreign exchange.

1/ Estimates not available for Bhutan and the Maldives.

2/ Calculated from Chr. Michelsen Institute, op.cit., p. 8.

3/ Except perhaps in the funds allocated for disaster relief and rehabilitation, although even this is not very likely on the basis of the early responses to the 1988 flood disaster.

The main sources of foreign exchange are merchandise exports and remittances from Bangladeshis working in the Gulf. Exports have increased by about 23 per cent over the period 1979-1987 but remittances have more than doubled and now represent about 55 per cent of Bangladesh's export earnings. In a normal year in terms of weather conditions foreign aid disbursements are roughly equivalent to total foreign exchange earnings obtained through exports and remittances. It is encouraging to note that export earnings and remittances have increased in dollar values at a rate significantly in excess of the import price index, and the rate of growth of foreign exchange earnings has been significantly in excess of the rate of growth of import expenditure. This is despite the fact that Bangladesh's terms of trade fell drastically over the period from 1970 to 1982. There was a modest improvement over 1982-1985, but the index has declined appreciably since then. The value for the index in 1986/87 was 91.0 (1979/80 = 100). Using 1972/73 as the base year, the index value for the terms of trade indicator works out at 84.6.[1/]

A serious burden on the foreign exchange budget has been the rising volume of debt service payments. Total external disbursed debt has risen from $4.88 billion in 1983 to $7.86 billion at end-1987 and the debt service ratio has doubled over this period. Private credit represents only about 1 per cent of Bangladesh's outstanding credit and the concessional loan share of debt exceeds 97 per cent. Nevertheless the debt/GNP ratio is fast approaching 50 per cent (as against 15.1 per cent for India and 31.4 per cent for Pakistan)[2/] and Bangladesh is on the way to becoming South Asia's most indebted economy.[3/] Interest repayments alone now exceed $120 million annually and borrowings from financial markets have increased by about 8 per cent per annum over the 1983-1987 period.

Use of IMF credit has also increased rapidly in recent years. Servicing of this rising debt burden has been made easier by the growth of worker remittance and the very apid expansion in garments exports. In 1981 foreign exchange earnings from ready-made garment exports amounted to just $3.4 million. By 1987 this figure had increased to $29.7 million and ready-made garments are now second only to jute in Bangladesh's export structure. But further expansion seems to be crucially constrained by the imposition of import barriers particularly in the United States.

Bangladesh has been described as a "test case for development".[4/] Development prospects appear particularly unpropitious because of two major natural disasters in consecutive years. But the growth potential of the economy is indicated by the fact that in normal years (i.e. non-disaster years) per capita income growth has always been achieved. There is a need to exploit this growth potential by increasing the resilience of the economy and augmenting its capacity to domestically generate investable resources from different segments of the economy. The development of the manufacturing sector can play a pivotal role in achieving these objectives.

1/ Calculated from Planning Commission, Economic Review, 1986/87, December 1987, pp. 26-27.

2/ Figures are for 1987.

3/ Only Sri Lanka with a debt/GNP ratio of 50 per cent in 1987 is ahead of Bangladesh in the debt league in the SAARC region.

4/ J. Fowland and J.B. Parkinson, Bangladesh: The Test Case for Development, Hurst and Co., London, 1976.

1.3 An overview of the manufacturing sector

Bangladesh has the largest manufacturing sector within the UN category of least developed countries. MVA per capita (at constant 1980 prices) was estimated at $16 in 1984 - as against $19 for Burma, $40 for India, $52 for Sri Lanka and Pakistan but only $6 for Nepal.[1/]

During the 1970s the real value of MVA per capita more than doubled from $7 in 1970 to $17 in 1980. Since then there has been a marginal decline reflecting both the slow growth of the manufacturing sector and the accelerated depreciation of the Bangladeshi Taka against the US dollar. Bangladeshi MVA per capita was equivalent to about 9.9 per cent of the average MVA value of the developing country group in 1984. In 1975 the value of this ratio was 10.5 per cent. The rate of growth of MVA in Bangladesh during 1980-1985 has been lower than that of Pakistan, Sri Lanka and Burma but higher than that of India and Nepal. The share of MVA in Bangladesh's GDP increased from about 5 per cent in 1970 to 10 per cent in 1981. Since then it has declined marginally and is currently estimated at about 7 per cent.

The manufacturing sector is characterized by marked industrial dualism. Large- and medium-scale enterprises, which were until the recent privatization drive mainly publicly owned, account for about two-thirds of MVA but only for 20 per cent of manufacturing employment and less than 10 per cent of the number of units producing manufactures. The large-scale enterprises are concentrated in the textiles, chemicals and pharmaceutical, food manufacturing and metal products branches. They have benefited from government subsidization and produce mainly for a protected domestic market employing a relatively capital-intensive production technology. They remain dependent on foreign concessional assistance as a source of financing the purchase of raw materials and for the acquisition of technology.

Foreign concessional assistance has been a critically important source for both capacity creation and utilization in the large-scale manufacturing sector. Every major project in the public and private sector is tied to aid disbursements. Aid is either tied to specific projects or is obtained in the form of grants and loans from development financing agencies within the public sector. Public manufacturing enterprises have remained crucially dependent on commodity aid for the supply of intermediaries, raw materials and spares. In the years (such as fiscal 1987/88) when there was a major shortfall in commodity assistance, the capacity utilization rate within the large-scale manufacturing sector declined significantly. The dependence on aid has meant that technology choice by large-scale manufacturing enterprise is, to a large extent, determined by the composition of the annual aid package, its sources of origin, its term structure and its rate of disbursement.

1/ UNIDO, Industrial Development Series Review: Nepal, PPD.79 (1988), p. xiii and 6.

The small-scale and cottage industries which employ 80 per cent of Bangladesh's manufacturing labour force is a more intensive user of domestic resources and has strong links with the rural economy. Small and cottage based enterprises[1/] are widely dispersed in regional terms. They are however concentrated in a very small number of manufacturing branches - about 60 per cent of the total value added of the small-scale sector is typically produced in the food manufacturing branch and 70 per cent of the value added of cottage industries is generated in the food manufacturing, textiles and wood products branches. It has been found that small and cottage industries are not significantly less capital intensive than the major manufacturing enterprise - this is explained partly by the predominance of the former within the food manufacturing branch (which in Bangladesh is relatively capital intensive) and by the under-valuation of the capital assets within the large-scale sector.[2/]

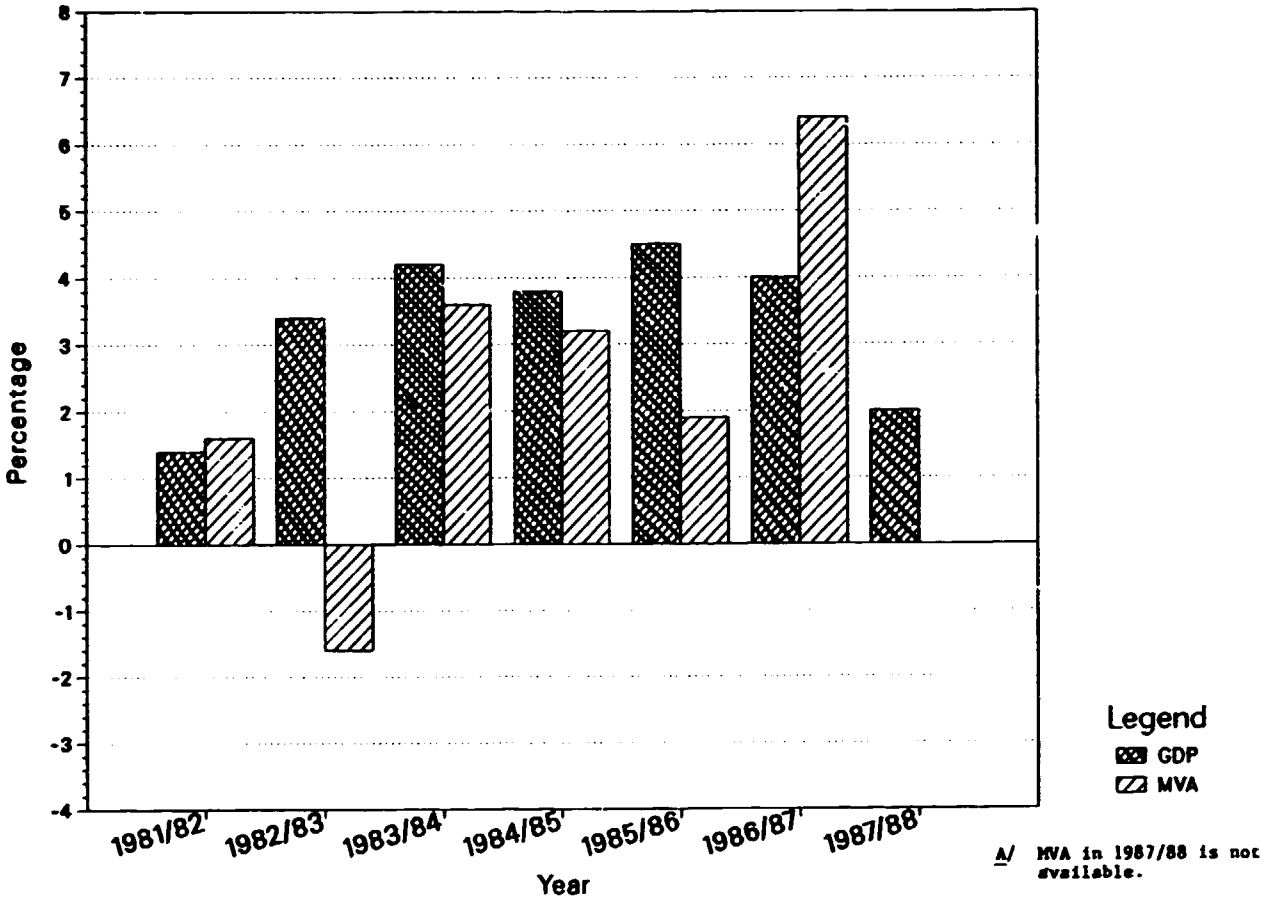
Although Bangladeshi small manufacturing enterprises are domestic resource-based they are also affected by the volumes of concessional inflows. Their share of project aid and commodity assistance remains very small, but an upturn in the investment expenditure of the large-scale enterprise has a significant impact on aggregate effective demand. Moreover food aid is also of importance in sustaining demand of the lower-income groups who are the main customers of the small-scale manufacturing enterprises. Nevertheless the relationship between the external sector and the small and cottage enterprises is an indirect one. They cannot rely on concessional institutional finance to fund investment and maintenance costs. The production of an investable surplus is thus a pre-condition of survival as far as most small-scale units are concerned.

The government has remained concerned to increase the resource mobilization capacity of the manufacturing corporate sector - this has been an important policy objective of the New Industrial Policy of 1982 and the Revised Industrial Policy of 1986. Government subsidies have been significantly reduced and the government has embarked upon one of the most extensive privatization programmes in the developing world - the government's stake in the large-scale manufacturing sector has been reduced from about 85 per cent in 1979 to a little over 40 per cent in 1988. A number of joint ventures involving collaboration with major international firms such as Phillips, Hitachi, Max Factor and Rothmans have been established in recent years. The success of the policy reform package, including the privatization initiative, should be seen in terms of its impact on the capacity of the manufacturing sector to generate investable resources and reduce its dependence on government subsidies on the one hand and foreign concessional assistance on the other for creating the base for exploiting the inherent potential for industrial growth.

1/ Cottage industries are defined as units with no mechanical power employing less than 20 workers or units with mechanical power employing less than 10 workers. Small-scale enterprises include units with mechanical power employing between 10-19 workers or units without mechanized power employing more than 20 workers. Total investment of a small-scale enterprise should not exceed Tk2.5 million.

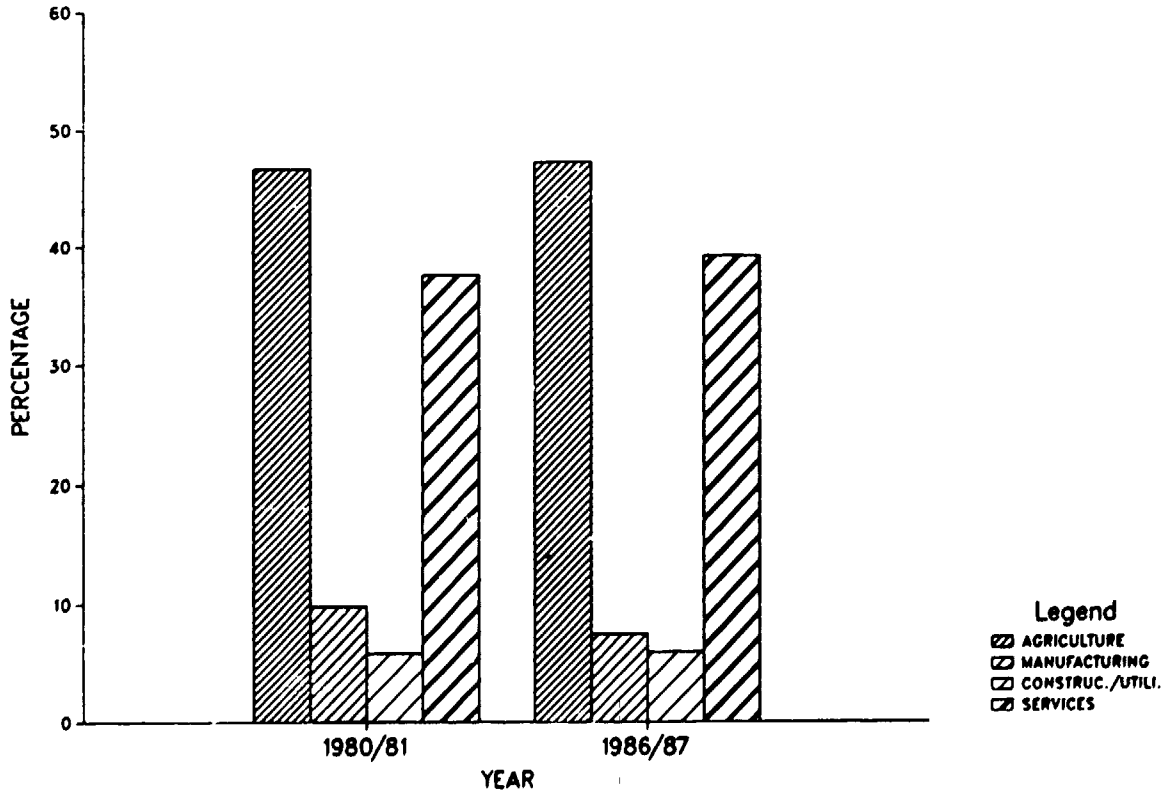
2/ Chr. Michelsen Institute, op.cit., pp. 281-284.

REAL GROWTH RATES OF GDP AND MVA, 1981/82-1987/88 A/

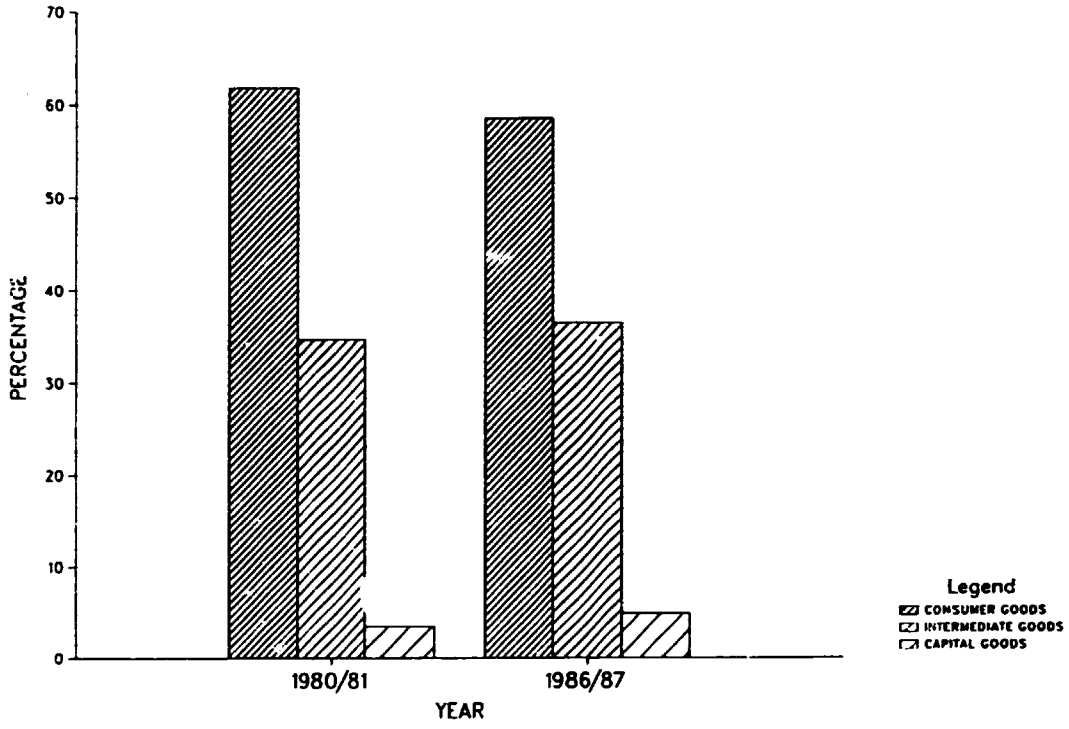


A/ MVA in 1987/88 is not available.

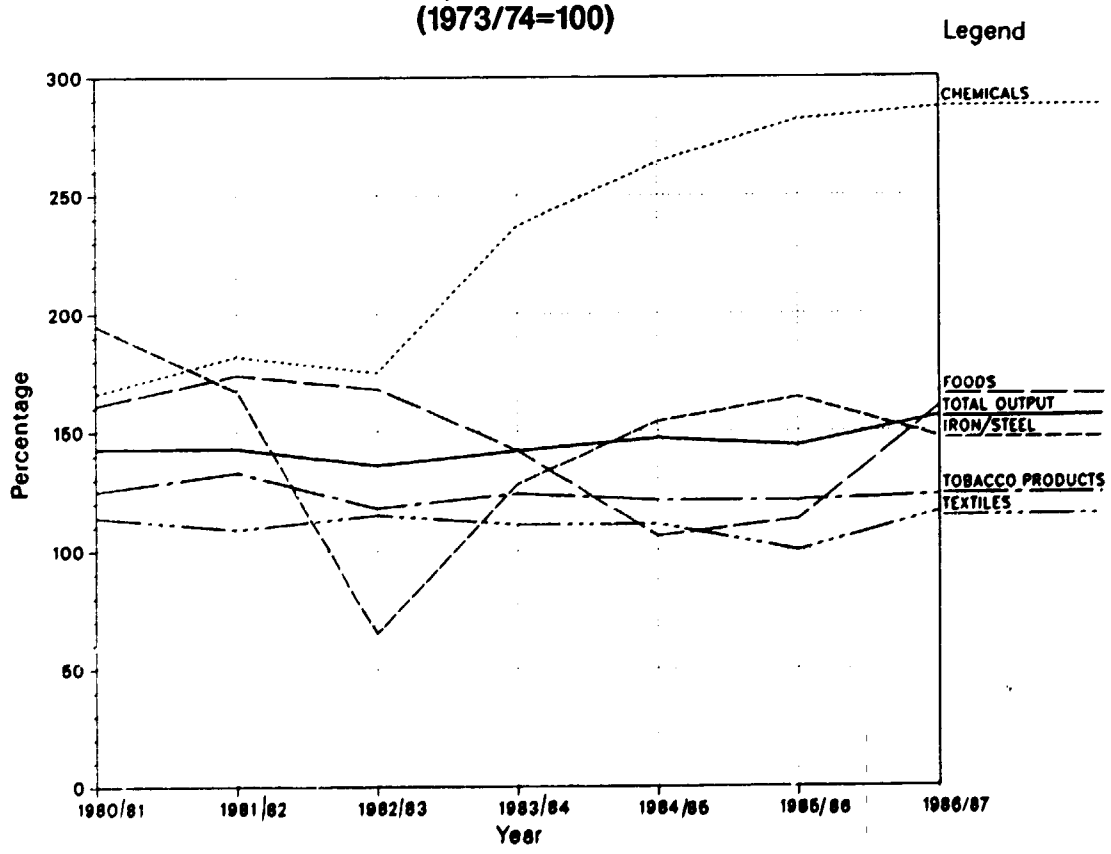
DISTRIBUTION OF GDP BY SECTOR OF ORIGIN, 1980/81 AND 1986/87



COMPOSITION OF MANUFACTURING VALUE ADDED, 1980/81 AND 1986/87

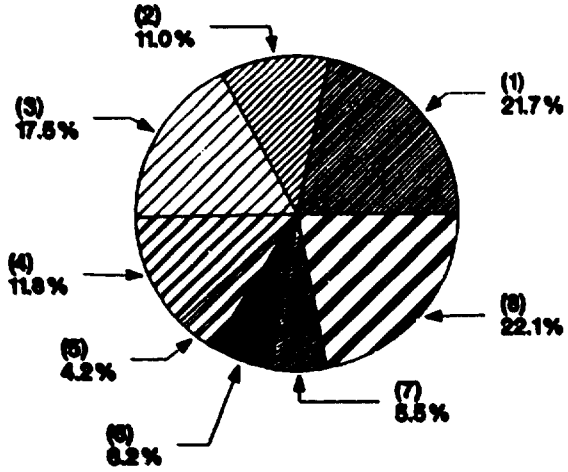


INDEX OF INDUSTRIAL OUTPUT, SELECTED PRODUCTS, 1980/81-1986/87 (1973/74=100)



SECTORAL DISTRIBUTION OF ANNUAL DEVELOPMENT PROGRAMME AND SOURCES OF FINANCE, 1987/88

SECTORAL DISTRIBUTION



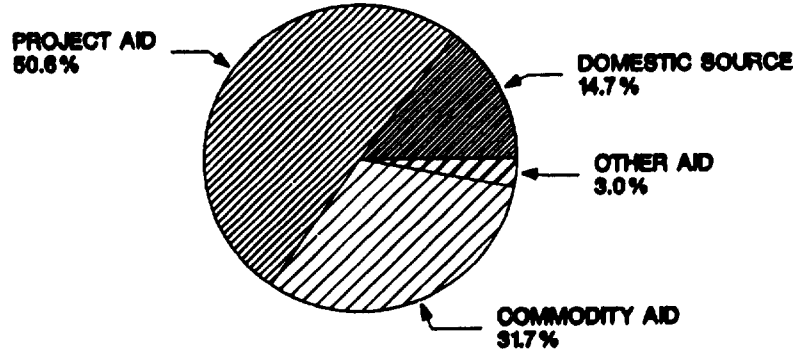
(1) Agriculture, rural development, embankment and irrigation works.

(2) Industry.

(3) Electric power development.

(4) Transport and communications.

SOURCES OF FINACE



(5) Housing and public works.

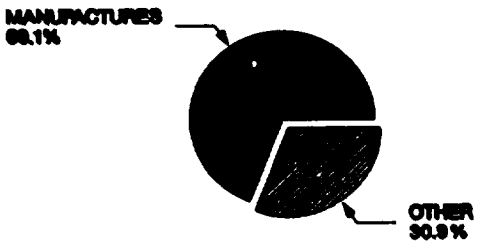
(6) Education and culture.

(7) Public health and family planning.

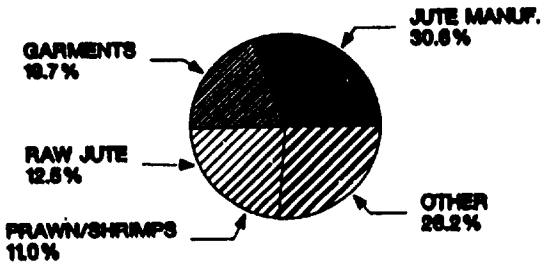
(8) Other.

EXPORTS AND IMPORTS, 1985/86

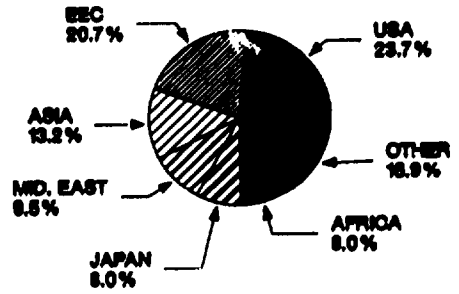
SHARE OF MANUFACTURES IN TOTAL EXPORTS



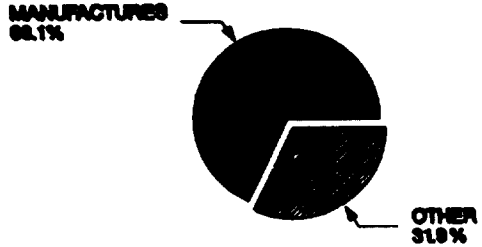
COMPOSITION OF EXPORTS



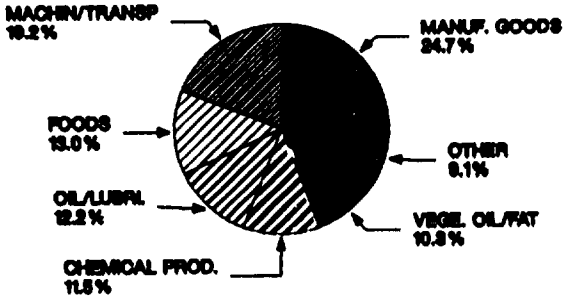
DESTINATION OF EXPORTS



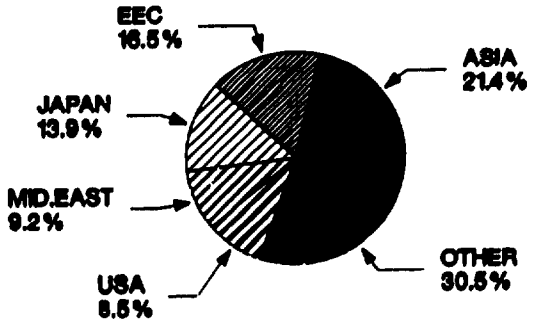
SHARE OF MANUFACTURES IN TOTAL IMPORTS



COMPOSITION OF IMPORTS



ORIGIN OF IMPORTS



2. STRUCTURE AND PERFORMANCE OF THE MANUFACTURING SECTOR

2.1 Growth and structural change

The indices of industrial production published by the Bangladesh Bureau of Statistics (BBS)[1/] reveal that the index value increased significantly over the 1973/74-1980/81, and remained virtually unchanged during 1980/81 to 1985/86 - the losses of 1980/81-1982/83 and 1985/86 being barely compensated by the gains of 1983/84-1984/85. In 1986/87 the production index increased by 12 percentage points - the largest annual increase in the period - but the momentum of growth was inevitably lost during the disaster stricken years of 1987/88 and 1988/89. Manufacturing production is unlikely to have increased by more than 2 to 3 per cent during this period.

Table 2.1 illustrates that key product groups remained depressed and it is possible to characterize the 1980s as a period of marked downturn in the production of traditionally important segments of Bangladesh manufacturing. In only 3 cases - matches, lamps, bulbs and cable wire - did production increase in each year of the 1980-1987 period. Other branches with significant and consistent growth patterns included non-alcoholic beverages, industrial chemicals, paints and varnishes and paper products. Branches with particularly weak growth performances were jute manufacturing, cement, bakery products, alcoholic beverages, sugar products, tea and electric motors. In the case of bakery products, vegetable ghee, alcoholic beverages, tobacco,

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1/ The BBS estimates of manufacturing sector growth have a significant downward bias due to limited coverage. Alternative estimates of aggregate manufacturing based on different weight assignments to different branches have been presented by researchers. According to BBS estimates manufacturing production grew by 3.8 per cent per annum during 1973/74 to 1984/85 and by 0.4 per cent during 1981/82 to 1984/85. World Bank figures for growth during these periods are 5.1 per cent and 9.1 per cent respectively. The very large discrepancy in the BBS and World Bank estimates for the 1981-1985 period is due to the under-representation of private sector units in the BBS calculations and possibly due to methodological ambiguities in the World Bank attempts to combine the indices for the growth of large-and small-scale enterprises in specific manufacturing branches. The Chr. Michelsen Institute study has tried to reconcile these estimates and it calculates a growth rate "guesstimate" of 7.4 per cent per annum during 1984-1985 on the basis of adjustments to the World Bank figures and of 4.2 per cent per year for the entire manufacturing sector on the basis essentially intuitive adjustments to the weights and indices produced by the BBS and the Small Industry Survey undertaken by the Bangladesh Small and Cottage Industry Corporation (BSCIC). For details, see World Bank, Manufacturing Output and the Industrial Production Index (revised), Dhaka, 1985 (unpublished); Chr. Michelsen, op.cit., p. 287; Stern J. Joseph and Mallon D. Richard, "Foreign Exchange Regimes and Industrial Growth in Bangladesh", World Development, vol. 16, No. 12, p. 1420, 1988, Table 1 and the references cited therein.

Table 2.1: Indices of industrial production, 1980/81-1986/87
(1973/74 = 100)

	Weight	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Food products	10.45	1.1	174	168	142	106	113	160
Fish processing	0.40	82	93	80	36	147	233	209
Flour milling	0.43	37	57	54	40	87	86	116
Bakeries	0.59	191	211	199	...	47	170	50
Sugar & molasses	4.95	160	222	195	168	97	91	201
Edible oils & fats	0.49	149	177	190	131	49	96	167
Vegetable ghee	1.04	93	129	160	117	105	107	96
Tea	2.55	137	130	128	136	143	133	129
Beverages	0.89	168	187	143	241	202	199	194
Distilling & spirits	0.47	197	230	182	340	181	169	126
Non-alcoholic	0.42	135	140	98	131	172	233	269
Tobacco products	13.65	125	133	118	124	121	121	123
Textiles	47.39	114	109	115	111	111	100	116
Cotton textiles	22.57	115	105	114	114	117	110	120
Jute manufacturing	24.27	114	114	114	109	105	91	109
Rayon & other synthetic textiles	0.55	71	41	165	87	161	117	210
Paper and paper product-	0.95	124	136	100	114	160	170	172
Paper	0.52	142	137	112	118	265	180	185
Newsprint	0.29	115	146	100	113	174	180	177
Particle board & hardboard	0.14	78	108	53	99	111	115	97
Chemicals and chemical products	10.46	166	182	175	237	264	282	287
Chemical fertilizers	4.87	146	143	157	234	280	329	339
Basic industrial chemicals	0.17	93	71	81	95	103	118	149
Paints, varnishes, lacquers	0.22	116	118	107	140	157	142	161
Medicines & pharmaceuitcals	2.84	191	244	203	270	284	265	247
Disinfectants & insecticides	0.28	375	266	156	389	474	306	352
Matches	2.08	162	191	198	209	211	219	237

Table 2.1 (Continued)

	Weight	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Petroleum products	1.42	333	313	247	256	265	252	284
Non-metallic minerals	0.74	534	518	492	452	410	462	506
Glass	0.16	114	165	180	220	226	139	218
Cement	0.58	650	615	579	514	460	551	585
Iron and steel	12.09	195	167	65	128	154	164	147
Non-electric machinery	0.46	361	304	1,990	720	1062	409	265
Electric machinery	0.89	298	322	295	349	507	655	729
Electric motors	0.12	74	62	110	213	181	107	46
Electric fans	0.37	247	291	290	320	388	409	449
Lamps & bulbs	0.02	311	379	390	457	557	565	614
Communications equipment	0.27	528	523	405	499	869	1,348	1,561
Cables & wires	0.11	142	205	223	271	365	394	397
Transport equipment	0.28	125	115	48	86	74	82	73
Shipbuilding	0.04	177	178	132	110	126	81	46
Motor vehicles	0.15	98	71	12	62	58	88	74
Bicycles & rickshaws	0.09	147	160	74	117	81	73	85
Other	0.33	68	58	81	80	63	123	98
Jute baling & pressing	0.30	67	58	84	85	66	131	103
Rubber products	0.01	62	55	49	167	109	107	91
Ice making	0.02	81	72	27	2	13	11	19
Index of manufacturing production	100.00	143	143	136	142	147	144	156
Public sector	77.50	--	--	--	--	--	--	--
Private sector	22.50	--	--	--	--	--	--	--

Source: Bangladesh Bureau of Statistics.

Note: The index of manufacturing production covers approximately 93 per cent of value added in large- and medium-scale manufacturing. Excluded are, among others, the manufacturing of footwear, leather, furniture and non-ferrous metal products, printing and publishing, as well as all small and cottage industries (which include spinning, dyeing and handloom weaving).

petroleum products, cement, non-electrical machinery,[1] electric motors, ship-building, motor vehicles, bicycles and rickshaws and ice-making the production level of 1986/87 was significantly below the level achieved in 1980/81, despite the fact that the value of the aggregate manufacturing production index was higher in 1986/87 than in any previous year during 1980-1987 period.

It thus appears that except for a small group of products in the beverages, chemicals, paper and electrical machinery branches, the manufacturing sector has experienced considerable instability during the 1980s. Of particular significance is the disappointig growth performance of jute manufacturing - Bangladesh's main cash crop - cement and non-electrical machinery. Setbacks in these branches indicate increased vulnerability in the production of key intermediate and capital goods products and the existence of a serious constraint on the manufacturing sector's capacity to generate export earnings - decline in jute manufacture is to some extent compensated by the growth of cotton textiles and synthetics.[2]

A similar picture is presented by data on variations of physical output of the major manufactured products in Bangladesh. Of the 12 product groups for which comparison is possible, 1986/87 production levels were below the 1969/70 level in five cases - the most marked declines being in the case of bicycles (1986/87 production level down by 66 per cent in comparison to 1969/70) diesel engines (a production shortfall of 55 per cent) and jute manufacturing (a production level decline of 45 per cent). If comparison is made between the levels of production in 1980/81 and 1986/87 in these key product groups, ten out of 16 commodities are seen to have lower production levels in the latter year - television sets produced in 1986/87 equalled 37 per cent of the 1980/81 level; the bicycle and diesel engine production output was roughly 40 per cent of that recorded in the earlier years, the assembly of buses and trucks fell by 60 per cent, cotton cloth production declined by 50 per cent and the jute manufacturers output of 1986/87 declined by 43 per cent in comparison to 1980/81.

Of the 6 product groups which experienced a significant upturn during the 1980s, rapid growth was recorded in the case of motor cycles where production was tripled during 1980/81-1986/87 and Triple Superphosphate (TSP) (a product of the chemical industry) and urea production the 1986/87 output levels were twice as high as the levels recorded in 1980/81. Newsprint production rose by 50 per cent. Although too much should not be read into these selected estimates reported in Table 2.2[3] it is clear that growth during the 1980s has remained concentrated in a small number of branches and there has been some restructuring in the manufacturing sector.

1/ Non-electrical machinery production fluctuated very widely. It rose by 54.6 per cent in 1982/83, declined by 76.3 per cent the following year, rose by 47 per cent in 1984/85 and fell by about 80 per cent during 1985/86 and 1986/87. The 1986/87 production level was 23 per cent lower than production level of 1980/81.

2/ The increase in wearing apparel is not evident in Table 2.1 which does not report them separately. However, garments are now Bangladesh's second major export earner.

3/ It is not possible to ascertain the relative weight of the products in Table 2.2 at either the branch or the sectoral level on the basis of the information in the Bangladesh Economic Survey 1986/87.

Table 2.2: Physical output of selected manufactures, 1969/70-1986/87 (selected years)

Product	Units	1969/70	1975/76	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87a/
Jute goods	000 M.T.	587	578	581	578	393	338	327	276	334
Yarn (32 count basis)	Lakh lbs.	1,058	911	1,217	1,099	794	797	783	693	817
Cloth (54 pick basis)	Lakh yrds	599	760	888	784	435	414	435	389	421
Sugar	000 M.T.	93	88	145	202	178	151	88	82	180
Cement	000 M.T.	53	157	345	325	305	272	240	292	310
Paper	000 M.T.	31	20	33	32	26	28	39	42	42
News print	000 M.T.	36	20	34	44	31	38	51	55	52
Bus, truck & car	No.	455	617	2,410	1,616	1,069	2,238	1,037	1,306	1,000
Motor cycle	No.	937	2,002	3,005	3,009	976	3,700	10,000	13,185	10,000
TSP	000 M.T.	...	49	70	58	71	81	58	100	135
Urea	000 M.T.	96	280	336	340	371	724	/42	835	837
Amm. sulphate	000 M.T.	5	6	9	12	12	11	10	10	8.5
Cycle	No.('000)	7,295	16,952	6,201	8,996	5,333	12,020	3,706	1,737	2,500
Diesel engine	No.('000)	8,284	5,173	8,586	1,785	8,462	4,735	7,858	4,616	3,500
Steel ingot	000 M.T.	...	90	129	108	47	78	101	96	95
Television	No.	...	...	4,358	1,942	28,21	4,914	5,127	11,138	1,600
Timber extraction	Lakh cft.	...	...	11.60	12.63	14.59	11.13	10.62	11.08	...
Pole, post and sleeper	Lakh cft.	...	...	2.48	3.31	3.58	3.76	5.48	6.00	...
Raw rubber	Lakh Kg.	...	...	...	...	8.47	8.18	8.18	9.60	...

Source: Economic Survey of Bangladesh, 1986/87, Dhakha, 1987, pp. 484-485.

a/ Estimate.

The structure of manufacturing output for the 1974/75-1986/87 is presented in Table 2.3. Branches which continued to increase their respective shares throughout the period include sugar products, edible oils, chemical fertilizers, pharmaceuticals, matches and electrical products (with the exception of electric motors). The most significant increase has been in the case of chemical fertilizers which has more than doubled its share in manufacturing production during this period. The share of pharmaceuticals has almost doubled and the share of the electrical manufacturing industry has increased by a factor of three (however in 1986/87 it accounted for only about 4 per cent of manufacturing production). Growth has thus remained concentrated in a relatively small number of intermediate industrial branches if the period 1973/74-1986/87 is considered as a whole.

It is however difficult to identify the overall pattern of structural change. There are two major reasons for this. Firstly, the results of the Census of Manufacturing Industry (CMI) undertaken by the Bangladesh Bureau of Statistics are published with a 4 to 5 year time lag - thus the latest census results are available for the fiscal year 1982/83. It is thus impossible to ascertain the pattern of growth and structural change within the manufacturing sector in more recent years. Secondly the number of units covered by the census is usually significantly smaller than the total number of units registered by the ministries responsible for the administration of different industrial branches.

Another serious problem with the BBS manufacturing output index is that data collection is mainly limited to government-owned enterprises. The sectors of increasingly important private enterprises are under-represented in the BBS estimates so that sectors which have grown most rapidly during the 1980s - garments and frozen sea-food, their export volumes of which rose by over 600 per cent during the early 1980s - and are given very little weight in the sectoral production index. During the 1980s privatization has proceeded at a very rapid rate in Bangladesh and the under-representation of private sector units in BBS estimates of manufacturing production has become an increasingly serious problem.

Consumer goods industries[1/] accounted for 58.6 per cent of manufactured output in 1986/87. In 1980/81 this share had been 61.8 per cent and the difference between the two shares is mainly explained by the decline of jute manufactures.[2/] The decline in the share of cotton textiles reflects the under-representation of the private sector firms in this sector - particularly those involved in the booming export trade and the doubling of the share of the fish processing sector is also likely to be an under-estimate. For example according to the study by the Chr. Michelsen Institute ready-made garments constituted about 5 per cent of the textile industry in the early 1980s and their production increased by about 300 per cent per annum over the 1981/82-1984/85 period.[3/] It may be the case that expansion in garment production has been accompanied by declines in other sectors of the textile industry - but this does not seem very likely as the initiative for the expansion of the garment export sector has come from new foreign firms (particularly the Republic of Korea and India). Further, there is no evidence

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1/ Defined as food products, beverages and textiles jute and cotton. (A case may be made for including jute among the intermediates category.)

2/ The share of which fell by 3.69 percentage points as against a 3.2 percentage decline in the share of the whole consumers group.

3/ Chr.Michelsen Institute, op.cit., pp. 288-289.

Table 2.3: Structure of manufacturing production, 1974/75 - 1986/87 (selected years) (percentage)

Product	1974/75	1980/81	1986/87
Consumer goods			
Fish processing	0.40	0.26	0.53
Flour milling	0.43	0.11	0.31
Bakeries	0.59	0.77	0.19
Sugar	4.95	5.46	6.41
Edible oils	0.49	0.50	0.52
Vegetable ghee	1.04	0.66	0.63
Tea	2.55	2.40	2.12
Alcoholic beverages	0.47	0.63	0.38
Non-alcoholic beverages	0.42	0.38	0.72
Tobacco	13.65	11.76	10.82
Cotton textiles	22.57	17.75	17.47
Jute manufactures	24.27	20.75	17.06
Rayon	0.55	0.27	0.74
Newsprint	0.29	0.22	0.33
Other consumer goods	0.33	0.15	0.21
Intermediate goods			
Paper	0.52	0.50	0.62
Particle board	0.14	0.07	0.08
Chemical fertilizers	4.87	4.89	10.64
Industrial chemicals	0.17	0.10	0.16
Paints etc.	0.22	0.17	0.22
Pharmaceuticals	2.84	3.73	4.52
Insecticides	0.28	0.72	0.63
Matches	2.08	2.31	3.17
Petroleum products	1.42	3.25	2.60
Glass	0.16	0.22	0.22
Cement	0.58	2.60	2.18
Iron and steel	12.09	16.25	11.46
Capital goods			
Non-electrical machinery	0.46	1.14	0.78
Electric motors	0.12	0.05	0.03
Electric fans	0.57	0.96	1.65
Lamps and bulbs	0.02	0.04	0.07
Communication equipment	0.27	0.97	2.01
Cables and wires	0.11	0.10	0.27
Ship building	0.04	0.04	0.01
Motor vehicles	0.15	0.09	0.07
Bicycles/rickshaws	0.09	0.08	0.04

Source: Bangladesh Bureau of Statistics.

Note: Column 1 is sourced from the annual production index series published by BBS and columns 2 and 3 are estimated on the basis of adjustments to sub-sectoral growth rates presented in that series.

of an actual contraction of domestic demand during 1981/82-1986/87 which might have seriously affected the textile industry. It thus appears that the limited coverage of the BBS census estimates has led to an under-estimation of the growth of consumer goods industries.

Despite the existence of this bias it is clear that among the chemical industries, chemicals, pharmaceuticals and fertilizers have increased their shares and injected structural change during the 1980s. There has however been a marked decline in the production of iron and steel during this period and the damage done by the recent flood disaster and inevitable accompanying shortage of foreign exchange will mean a postponement of investment plans. There has been a moderate increase in the share of the capital goods branches in manufacturing industry during 1980/81-1986/87. However, marked increase in the production of electric fans and communication equipment raised the share of the capital goods branches from 3.5 per cent to nearly 5 per cent in the same period.

The sectors which could record a good growth performance in the near future will be those which employ a relatively labour-intensive technology of production and can substitute domestic for foreign resources. Intermediate and capital goods producing large-scale enterprises are likely to be particularly dependent on both project aid availability and on the extent to which this is devoted to emergency relief and rehabilitation purposes. Expansion is likely to be influenced particularly by the ability of the enterprises to generate significant levels of investable resources. This is a main concern of the government's extensive privatization programme which places particular emphasis on augmenting enterprise efficiency within the manufacturing sector.

2.2 Performance and efficiency

Productivity growth has not been high in most of the branches for which data is reported in Table 2.4. In jute, cement, steel and petroleum products productivity levels in 1986/87 were significantly below the 1979/80 levels according to the BBS statistics. With the exception of steel, productivity levels in these branches were even below the 1976/77 benchmark and are unlikely to have been significantly higher than the levels attained in 1969/70.[1/] In the declining industries (with the exception of petroleum products) employment levels remained broadly stable. On the other hand in the cotton textile, and paper industries productivity growth can at least partly be attributed to a decline in employment. The fertilizer branch was the only case in which both employment and productivity indices rose significantly over the period.

UNIDO estimates of growth in value added per employee over the 197[5]-1985 period (see Annex Table A-2) are corroborated by the findings reported in Table 2.4. Negative productivity growth is recorded in food products, textiles,[2/] wood products, petroleum products, iron and steel, non-ferrous metals, electrical machinery and transport equipment. UNIDO also estimates that employment and MVA measured at constant 1980 prices grew at roughly the

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1/ M. Alamgir, "Resources for Development", in E.A.G. Robinson and K. Griffin (ed.) Economic Development of Bangladesh, Macmillan, 1974, pp. 73-74.

2/ Which combines the jute and cottage sub-sectors - the decline in the former has probably outweighed the increase in the latter.

Table 2.4: Productivity indices of industrial labour in selected industries, 1979/80-1986/87
(Base: 1976/77 = 100)

Period	Jute	Cotton	Pepper	Steel	Cement	Fertilizer	Petroleum products	Paints and varnish
1979/80	94	99	120	110	71	105	107	227
1980/81	92	108	114	117	59	102	102	223
1981/82	88	113	133	98	65	101	91	218
1982/83	90	126	97	39	69	115	61	182
1983/84	87	131	109	90	56	139	67	210
1984/85	83	124	125	103	50	154	68	228
1985/86	82	116	154	93	58	178	64	20[illegible]
1986/87	92	128	167	95	63	163	69	2[illegible]

Source: BBS, Statistical Yearbook of Bangladesh, 1987, Dhakka, 1987, p. 31.

Notes: Productivity index is the ratio of output to employment index. All indices are provisional subject to revision.

same rate during the 1973-1983 period. This would indicate that aggregate productivity growth within the manufacturing sector has been very modest and it is also evident that annual fluctuations in productivity levels have been wide because while production and gross margins have been influenced by natural disasters and political unrest, employment levels have in general remained stable. Thus it is only in the case of a small number of branches - fertilizers, shrimp manufacture, garments destined for exports, non-alcoholic beverages and perhaps glass products that significant and sustained improvement in productivity levels could be recorded.

Econometric estimates of factor productivity[1/] changes have generally found low value for the elasticity of substitution parameter between capital and labour for the 1970s. Growth was found to be particularly constrained by increasing scope. Low utilization of installed capacity was found to be a major important constraint on productivity than increasing input costs.[2/] Mondal and Ahmed found that total factor productivity increased in the cotton and jute textile industries (which together accounted for over 50 per cent of manufacturing production in the 1960s) during 1964/1965-1969/70, but declined sharply in the period 1969/70-1977/78. Labour productivity declined by 22 percentage points and the total factor productivity index by about 61 percentage points[3/] in the cotton textile industry over this period. This is a sombre finding since cotton textile production increased during 1972/73-1977/78 period. In jute manufacturing where production levels continued to decline during most years in the 1970s decade, the fall in the labour and total factor productivity indices was less pronounced. Once again the researchers identify low capital utilization rates as the primary cause of declining productivity.[4/]

Industrial performance could also be assessed by examining data on the composition of the value of gross output. Time series data for the period 1973-1985 are reported in Table 2.5. The value of the gross profit to value added ratio is significantly higher than the corresponding estimate for India (0.53 in 1975 and 0.51 in 1985) but not significantly different from the average value of this ratio estimated by UNIDO for a representative sample of 28 developing countries in the late 1970s.[5/] The gross profit to gross output

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1/ Q.K. Ahmed and A. Chowdhury "Productivity Trends in the Manufacturing Sector of Bangladesh", Bangladesh Economic Review, (BER) Volume 1, No. 2, 1973, pp. 119-130. S. Bakht and S.R. Osmani "Comparative Cost Structure - A Study of Selected Manufacturing Industry in Bangladesh", BER Volume II, No. 1, January 1974, pp. 411-430. A.A. Rashdi "Factor Substitutability in the Manufacturing Sector of Bangladesh", Bangladesh Development Study (BDS) Volume X, No. 2, 1982, pp. 85-103. A.N.M. Rahman "Elasticity of Substitution in Manufacturing Industries in Bangladesh", BER, Volume I, No. 2, 1973, pp. 175-185. A.H. Mondal and S. Ahmed "Factor Proportions and Factor Productivity Changes in Jute and Cotton Textile Manufacturing Industries in Bangladesh", BDS, Volume 12, No. 3, 1984, pp. 37-59.

2/ A.A. Rashdi op.cit., pp. 101-103.

3/ Mondal and Ahmed op.cit., p. 46.

4/ Mondal and Ahmed op.cit., p. 58.

5/ Average gross profit to value added ratio = 0.66 in 1978, UNIDO, Industry in a Changing World, New York, 1983, p. 242.

ratio for Bangladesh is also significantly higher than the average value of this ratio estimated for India: 0.12 in 1975 and 0.09 in 1985. There is however a slight declining trend in the gross profit to gross output and the value added to gross output ratios which were significantly higher in the early 1970s than in the early 1980s. On the whole the time series estimates appear to be remarkably stable (even if we exclude the estimated/projected values for 1984 and 1985). This only reflects a relatively high level of monopolization of the large scale manufacturing sector and the associated success in maintaining the structure of input and output rises.

Table 2.5: Selected indicators[a/] of industrial performance, 1973-1985

Year	Gross profit / Value added	Gross profits / Gross output	Value added / Gross output
1973	0.68	0.33	0.48
1974	0.64	0.31	0.47
1975	0.67	0.27	0.40
1976	0.67	0.22	0.33
1977	0.73	0.25	0.34
1978	0.70	0.25	0.35
1979	0.65	0.23	0.35
1980	0.68	0.25	0.37
1981	0.66	0.23	0.34
1982	0.68	0.23	0.34
1983	0.67	0.23	0.34
1984[b/]	0.67	0.23	0.34
1985[b/]	0.67	0.23	0.34
Average value	0.67	0.25	0.36

Source: UNIDO data base.

a/ Ratios.
b/ Estimate.

Weak productivity growth and low rates of capital accumulation can thus not be explained with reference to rising wage or material costs during this period - material costs declined marginally and wage costs remained broadly constant. On the other hand it appears that profits are probably not an adequate indicator of net returns. While the costs of servicing capital have risen and new investments (particularly foreign related investment) have become more and more difficult to obtain, capital productivity has declined both due to the increasing obsolescence of plant and machinery and high rates of capacity under-utilization.[1/] It thus appears that a principal constraint on the performance of large-scale manufacturing units has been the inefficiencies associated with the use of both fixed and working capital.

1/ Evidence of decline in capital productivity in cotton textiles is provided by Mondal and Ahmed, op.cit., p. 47.

A more disaggregrated picture of the performance of large-scale manufacturing units is provided in Annex Table A-3. Inter-branch variations in terms of both indicators are high. The share of value added in gross output is highest for beverages, tobacco, other manufactures, industrial chemicals, cement, pottery and china, electrical machinery and rubber products.[1/] Broadly speaking these branches also have the highest value of the gross profit indicator. However the association between branches ranked by these two indicators is low and has been weakened over time.[2/] Thus despite the fact that both the value added and gross profit ratios have risen (though moderately) over the 1975-1983 period the association between growth in capital intensity[3/] and profits is not pronounced. Branches with the highest rates of growth in the profit ratio include wearing apparel, textiles, leather products, footwear, wood products, paper, pottery and china, electrical machinery[4/] and transport equipment. Some of these branches such as wearing apparel and leather products had the lowest value added to gross profit rate in both 1975 and 1983. Manufacturing performance is not likely to have risen during the 1980s.

As Table 2.6 shows, the overall financial performance of the industrial parastatals has been very poor during the 1980s - the average net profits to sales ratio for the 1979/80-1986/87 period works out at less than 1 per cent. With the exception of disastrous performance in 1980/81 (when a net loss amounting to 11.5 per cent of sales revenue was obtained by the group) the average profit ratio is 3.3 per cent. The information in Table 2.6 however is to some extent misleading because establishments privatized since 1982, particularly in the jute and textile sectors, have been included in these estimates.

The low level of profitability would indicate that the level of investment self-financing within the large-scale manufacturing sector is low and that high profitability levels are indicative of monopolistic strength rather than of industrial efficiency. Within market structure of this type high profits are not usually accompanied by high levels of investment.

Time series assets of investments within the manufacturing sector are not available for the entire period. Total investment outlays in the Second Plan (1980-1985) equalled Tk316 million representing about 17 per cent of the Plan outlay. It was estimated that there was a 30 per cent shortfall between actual and realized investment levels during this period within the public sector and a 50 per cent shortfall in planned private sector manufacturing investment.

1/ Ratio of value added to gross output exceeds 50 per cent in each of these cases.

2/ The value of Spearman's ratio for the two rankings was 0.23 in 1975. It fell to 0.12 in 1983.

3/ As measured by the value added to gross output ratio.

4/ Pre-tax profits after capital charges have been used.

Table 2.6 Financial performance of public sector industrial corporations, 1980/81-1987/88
(Tk Crore)

	1980/81	1981/82	1982/83	1983/84[a/]	1984/85[a/]	1985/86[a/]	1986/87[a/]	1987/88[a/]
A. Net profits[b/]								
Bangladesh Jute Mills Corporation (BJMC) All Mills[c/]	33.8	-65.5	-	-	-	-	-	-
Bangladesh Jute Mills Corporation (BJMC)[d/]	25.5	-42.6	20.5	-28.1	-118.8	-158.3	-47.6	-28.9
Bangladesh Textile Mills Corporation (BTMC) All Mills[c/]	-33.2	68.1	-	-	-	-	-	-
Bangladesh Textile Mills Corporation (BTMC)[d/]	-18.4	-41.8	6.9	43.4	22.9	-51.9	2.0	17.9
Bangladesh Sugar and Food Industries Corporation (BSFIC)	39.0	46.9	44.8	46.1	-20.6	-27.3	3.1	7.4
Bangladesh Steel and Engineering Corporation (BSEC)	12.4	-12.0	-23.7	-15.0	1.7	-6.2	2.7	4.6
Bangladesh Chemical Industries Corporation (BCIC)	5.6	7.1	39.6	26.3	13.6	15.5	2.5	15.8
Bangladesh Forest Industries Development Corporation (BFIDC)	1.0	1.2	3.1	4.3	5.2	5.8	7.6	7.6
Bangladesh Petroleum Corporation	-9.2	-278.9	59.7	160.0	206.4	261.0	269.3	3.3
Total:	49.4	-369.3	150.9	237.0	110.4	38.6	239.6	27.7

Table 2.6 (Continued)

	1980/81	1981/82	1982/83	1983/84[a]	1984/85[a]	1985/86[a]	1986/87[a]	1987/88[a]
B. Gross sales								
Bangladesh Jute Mills Corporation (BJMC) All Mills[c]	640.3	620.9	-	-	-	-	-	-
Bangladesh Jute Mills Corporation (BJMC)[d]	455.2	447.0	544.5	509.7	746.0	624.0	617.6	707.6
Bangladesh Textile Mills Corporation (BTMC) All Mills[c]	321.8	335.6	-	-	-	-	-	-
Bangladesh Textile Mills Corporation (TMC)[d]	188.2	201.1	251.2	299.0	372.9	323.6	419.7	472.5
Bangladesh Sugar and Food Industries Corporation (BSFIC)	268.4	307.5	271.2	361.3	138.6	247.2	398.8	370.8
Bangladesh Steel and Engineering Corporation (BSEC)	331.7	278.9	205.5	369.2	430.5	389.2	512.7	597.5
Bangladesh Chemical Industries Corporation (BCIC)	351.3	375.5	470.9	638.6	649.6	742.7	870.4	934.1
Bangladesh Forest Industries Development Corporation (BFIDC)	17.6	18.2	30.5	36.5	42.4	47.8	58.6	63.1
Bangladesh Petroleum Corporation	1,136.2	1,268.5	1,391.7	1,161.5	1,266.7	1,365.6	1,266.8	1,313.6
Total:	3067.3	3,205.1	3,165.5	3,375.8	3,646.7	3,740.1	4,144.6	4,459.2
C. Profit/sales ratio per cent								
Total	1.6	-11.5	4.8	7.0	3.0	1.0	5.8	0.6

Source: Sector Corporations; Ministry of Commerce and Industries; and Ministry of Finance.

a/ Estimate.
b/ Pre-tax profits or losses. Negative sign (-) denotes net losses.
c/ These are the accounts of all the mills, including the ones that were transferred to the private sector in 1982/83.
d/ These are the accounts of the mills that are still in the public sector as of 1982/83.

Private sector response to a series of initiatives launched during the 1982-1985 period was particularly disappointing in the small and cottage industries sub-sectors. Private sector investment was concentrated in the textiles, footwear, transport equipment, metal products, chemicals and fish processing branches. Most public sector manufacturing investment was concentrated in agriculture related industries and industries producing basic needs. Capital goods industries received less than 10 per cent of total public investment during this period.[1/]

Investment allocations within the Third Five-Year Plan (1986-1990) are presented in Table 2.7. The total manufacturing investment was estimated at Tk5.8 billion in 1985 prices ($207 million at the 1985 exchange rate). The private sector was expected to generate 55 per cent of total manufacturing investment and a part[2/] of the public sector investment was reserved to serve as seed money for the establishment of manufacturing joint ventures with the private sector. Fifty-six per cent of total public sector manufacturing investment was allocated for the completion of what are described as "spill over" projects from the Second Plan period. Investments in fertilizers (a large proportion representing allocation to "spill over" project) dominate public sector allocations and sizeable allocations have also been made for cotton textile, cement and sugar projects. Private sector investment is also expected to concentrate in these sectors but also in the basic metals sector which was to account for 14 per cent of total private manufacturing investment.

The mid-term evaluation of the Third Five-Year Plan indicates that implementation of the investment programme had lagged behind expectations even before the disastrous floods of 1987 and 1988. An important cause of this being the slow disbursement rate of allocated concessional assistance. According to the mid-term evaluation, growth achieved during the first three years of the Plan (1985-1988)[3/] manufacturing output growth was less than half the targeted rate of 10.1 per cent. The document indicates problems faced by many of the recently privatized industries leading to closures and resumption of managerial responsibilities within these units by the government.

The aftermath flood disasters will inevitably lead to a further reduction in investment levels within both the public and private sectors. However, the evidence seems to suggest that investment rates remained positive during the Second Plan period - Table 2.8 shows that the fixed assets to gross value of output ratio rose in the case of 18 out of the 26 branches for which data is available for both years. This increase was most pronounced in the case of pottery, transport equipment, leather products, footwear, beverages, other chemicals and probably wearing apparel.[4/] Investment ratios declined in the case of the tobacco, pharmaceuticals, industrial chemicals and electrical machinery branches. The evidence in Table 2.8 ought however to be viewed with caution due to the inability to present constant price estimates of fixed

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1/ The share of the agriculture (including forestry) related branches - fertilizers, sugar, paper, jute, textiles, food products, cotton textiles - amounted to about 60 per cent of public manufacturing investment. The share of fertilizers alone was about 31 per cent.

2/ Not specified in the Third Plan (1986-1990).

3/ Of which 1987-1988 alone was affected by flood disaster.

4/ For wearing apparel fixed asset estimates are not available for 1978/79.

Table 2.7: Manufacturing investment allocations in the Third Plan, 1986-1990
(Taka in Crores)

	Sub-sector	Public sector investment		Private sector investment		Total	
		Amount	Per cent	Amount	Per cent	Amount	Per Cent
1.	Jute textiles	64.0	2.4	25.0	0.8	89.0	1.5
2.	Cotton textiles	285.0	10.9	500.0	15.6	785.0	13.6
3.	Metal working/light engineering including non-electrical, electrical, and electronic machinery and appliances	65.0	2.5	200.0	6.3	265.0	4.6
4.	Transport equipment (including shipbuilding)	45.0	1.7	125.0	3.9	170.0	2.9
5.	Basic metals (iron ans steel)	145.0	5.6	650.0	20.3	795.0	13.7
6.	Fertilizer	1,130.0	43.5	850.0	26.5	1,980.0	34.1
7.	Cement	245.0	9.4	..	..	245.0	4.2
8.	Pulp and paper	75.0	2.9	50.0	1.6	125.0	2.2
9.	Chemicals and pharmaceuticals	25.0	1.0	200.0	6.3	225.0	3.9
10.	Glass, ceramics	15.0	0.6	50.0	1.6	65.0	1.1
11.	Leather and leather products	20.0	0.8	100.0	3.1	120.0	2.1
12.	Sugar	205.0	7.8	25.0	0.8	230.0	4.0
13.	Food and allied products	21.0	0.8	75.0	2.3	96.0	1.7
14.	Mining and minerals based industries	25.0	1.0	..	..	25.0	0.4
15.	Wood, bamboo, cane and coir products	10.0	0.4	100.0	3.1	11.0	1.9
16.	Printing	10.0	0.4	50.0	1.5	60.0	1.0
17.	Agro-supportive small-scale rural industries	65.0	2.5	200.0	6.3	265.0	4.6
18.	Export promotion	25.0	1.0	..	..	25.0	0.4
19.	Small and cottage industries promotion	60.0	2.3	..	..	60.0	1.0
20.	Other industrial promotion	65.0	2.5	..	..	65.0	1.1
	Total:	2,600.0	100.0	3,200.0	100.0	5,800.0	100.0

Source: Government of Bangladesh, Third Five-Year Plan, p.247.

Note: Crore = 10 million.

Table 2.8: Fixed assets as a ratio of gross output, 1978/79 and 1982/83 (percentages)[a/]

	1978/79	1982/83
Food manufacturing	25.03	32.10
Beverages	5.15	10.00
Tobacco	4.16	3.96
Textile	28.50	27.34
Wearing apparel	...	37.69
Leather	4.68	28.00
Footwear	6.74	36.80
Ginning of fibres	11.05	12.34
Wood	31.61	42.04
Furniture	15.09	29.41
Paper	33.28	65.46
Printing	27.48	48.01
Pharmaceutical	12.97	11.78
Industrial chemical	54.82	53.72
Other chemical	5.39	10.11
Petroleum refinery	2.22	2.42
Coal and petrol products	...	8.00
Rubber	21.83	59.71
Plastics	21.62	42.50
Pottery	28.98	129.16
Glass	19.09	25.00
Non-metallic minerals	15.98	20.30
Iron and steel	18.83	25.15
Fabricated metal	17.06	145.68[b/]
Non-electrical machinery	18.95	32.81
Electrical machinery	12.94	12.86
Transport equipment	6.63	22.07
Optical goods	...	20.00
Other manufactures	7.27	7.40
Total	18.89	24.55

Source: BBS, Statistical Yearbook, 1987, pp. 271, 273.

a/ Calculated on the basis of current prices.

b/ This may be considered exceptional due to high output level fluctuations in the metal products industry during this period.

asset value.[1/] It is however interesting to note that the relationship between the ranking of branches by the fixed asset ratio in 1978/79 on the one hand and by the rate of growth of gross output value for the 1978/79 to 1982/83 period is extremely low.[2/] It would appear that the efficiency of capital investment within the manufacturing sector remained low during this period. It is to be stressed that the evidence presented in this Section[3/] relates exclusively to large- and medium-scale enterprises and is further restricted in scope by the fact that the BBS census on which it is based mainly obtains data from State enterprises.

Thus, it is not possible to construct a comprehensive picture of the pattern of investment financing within the manufacturing sector. During the period 1972-1982, the large- and medium-sized sector was dominated by the parastatals which owned about 85 per cent of the total stock of industrial companies. This share had been reduced to about 40 per cent by end-1988 by means of perhaps the most ambitious privatization programme. Private manufacturing investment rose very sharply[4/] during 1982-1985 in a small number of industrial branches (textiles, ready-made garments, food processing) but has declined equally rapidly during 1986-1989 - initial estimates suggest that private manufacturing investment fell at a rate of over 30 per cent during this period.[5/] To some extent therefore the privatization programme has run out of steam and there has been a partial reversal of trends during the 1987-1988 years with the government being forced to take over ex-privatized units which were threatened by closure and financial bankruptcy.

The similarity of the performance of public and private manufacturing enterprise is a cause of some concern because this similarity indicates a uniformly low net profit and reinvestment ratio. It is therefore not surprising to note an increasing reliance on loan capital in industrial finance. Loans from the banking sector to manufacturing enterprises more than doubled over the 1980-1985 period in nominal terms despite an increase in the interest rate and relatively tight money policy. The share of manufacturing sector in total bank advances stood at 40 per cent in 1980 - but had declined to 29 per cent in 1985 (see Annex Table A-4).

Loans to public non-financial parastatals declined very sharply. In nominal terms bank borrowings by parastatals equalled only 44 per cent of their borrowings in 1980. As against this, loan to private sector manufacturing enterprises increased eight-fold in numerical terms. It is interesting to note that even in 1983 when total bank advances to the manufacturing sector declined by about 15 per cent loans to private manufacturing firms rose by 46 per cent.

1/ No relevant price deflators are presented in statistical sources.

2/ Spearman's ratio for the two ranking is 0.02 and the elasticity coefficient in log linear regression estimate is not significantly different from 0.

3/ And in the Chapter generally.

4/ Despite a decline in total investment in Bangladesh during this period.

5/ World Bank, Bangladesh: Adjustment in the Eighties and Short-Term Prospects, Report No. 7105-BD, 1988, p. 55.

Despite the growth in bank advances to manufacturing, industry has complained of a credit squeeze since the early 1980s largely caused by the refusal of international financial institutions to increase the rate of disbursement in the face of a continual low recovery rate. Total loan sanctioned by the major development financing institutions lending to industry declined sharply over the period 1982/83 to 1986/87. Total disbursements in the later years equalled just 11.5 per cent of the 1982/83 disbursement level, which itself was 20 per cent lower than the disbursement level of 1980/81. As Table 2.9 shows the recovery rate has improved but this has so far not been adequately reflected in the disbursement figures.

Table 2.9: Disbursement and recovery of institutional credit to industry, 1982/83 to 1985/86
(Tk lakhs)

	Disbursement	Recovery	Disbursement as per cent of recovery
1982/83	18,170	7,988	43.96
1983/84	22,533	12,379	54.93
1984/85	16,652	8,672	52.07
1985/86	16,651	13,359	80.22

Source: BBS, Statistical Yearbook, 1987, pp. 436-437.

The low rate of disbursement is a particularly serious problem for manufacturing units because of their very heavy dependence on the foreign concessional financing of both imports and investment. The share of disbursed aid in expenditure related to manufacturing projects exceeded 60 per cent during the 1980s. Currently the share of equity financing in manufacturing investment within the large- and medium-scale sector is unlikely to exceed 15 per cent - in the late 1970s it was estimated at about 20 per cent.[1/] Every major industrial project is now crucially dependant on the inflow of both commodity and project aid. The flood disasters of 1987 and 1988 are likely to further increase the dependence of the manufacturing sector on concessional assistance. The ability to generate an investable surplus remains low in both public and private enterprises. Public subsidies and investment outlays are likely to be reduced and the expansion of commercial bank credit is constrained by the conservative macroeconomic strategy currently in vogue. There is therefore a strong need to increase the disbursement rate of concessional aid and to ensure the effective utilization of these funds. There is an equally urgent need to reduce the dependence of the large- and medium-scale manufacturing sector on imported capital, technology and intermediate inputs on the one hand and to enhance its capacity to generate foreign exchange earnings on the other.

1/ R. Sobhan, The Crisis of External Dependence, Dhaka 1982, p. 48.

Table 2.10: Loans sanctioned by development finance institutions, 1980/81-1986/87

	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
A. Bangladesh Shilpa Bank (BSB)							
Loans sanctioned							
Food and allied products	49.5	20.3	0.5	0.4	1.0	0.9	0.1
Specialized textiles and handloom sector[a/]	43.1	41.5	2.5	13.6	48.8	69.9	56.9
Paper, board, printing and publishing[b/]	10.5	4.0	0.0	1.0	0.4	0.4	0.5
Tannery, leather and rubber industries	10.6	1.2	1.2	1.2	4.3	15.2	1.4
Chemicals, pharmaceuticals and allied industries	10.4	9.0	0.1	2.2	0.2	6.5	9.9
Engineering industries	15.6	20.6	2.6	2.9	8.8	2.4	3.3
Non-metallic minerals[c/]	2.3	0.0	1.3	0.1	2.5	1.1	0.2
Miscellaneous industries	0.0	0.6	0.1	0.5	0.0	0.6	0.2
Sub-total:	142.0	97.2	8.3	21.9	66.0	97.0	72.5
Service industries[d/]	16.9	12.1	0.7	0.5	0.3	2.1	2.8
Total sanctions	158.9	109.3	9.0	22.4	66.3	99.1	75.3
Private sector	158.9	109.3	9.0	22.4	66.3	99.1	75.3
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total disbursements	52.4	64.6	62.2	36.9	28.8	12.2	27.9
End-fiscal year resource position							
Foreign currency resources (US$ million)							
Resources available from aid agreements	104.8	94.4	96.8	65.3	49.7	73.6	84.5
(-) Disbursements	15.0	17.8	23.9	11.8	7.7	2.3	7.0
Resources available for disbursement	89.8	76.6	72.9	53.5	42.0	71.3	77.5
(-) Funds committed but not yet disbursed	32.5	40.9	37.1	22.9	16.9	32.7	28.8
Resources available for commitment	57.3	35.7	35.8	30.6	25.1	38.6	48.7
(+) Cancellations & withdrawals	5.5	2.6	2.1	2.5	0.9	5.5	-
(-) Approvals not yet committed	47.9	64.1	31.0	12.1	24.8	32.5	35.6

Table 2.10 (Continued)

	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Foreign currency resources available approval	14.9	-25.7	6.9	21.0	1.2	11.6	13.1
Local currency resources (Tk million)							
Cash on hand/in banks	19.2	11.1	39.7	57.8	74.2	90.9	104.3
(+) Money at call	7.9	11.0	0.0	16.3[e/]	8.0[e/]	6.8[e/]	4.5[e/]
(-) Reserves on deposit	14.2	3.8	4.5	5.7	6.5	6.7	5.3
(-) Commitments & approvals not yet disbursed	36.5	36.5	30.1	35.1	32.0	27.1	33.8
Local currency resources available for disbursement	-23.6	-18.2	5.2	33.3	43.7	63.9	69.7
B. Bangladesh Shilpa Rin Sangstha (BSRS)[f/]							
Loans sanctioned							
Food and allied products	18.8	5.4	0.2	2.7	0.3	1.0	0.2
Specialized textiles and handloom sector[a/]	16.9	0.3	1.1	50.8	0.5	10.3	0.0
Paper, board, printing and publishing[b/]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tannery, leather and rubber industries	0.0	0.4	0.0	0.9	0.0	0.0	0.0
Chemicals, pharmaceuticals and allied industries	7.6	1.8	3.2	1.9	0.8	0.2	0.0
Engineering industries	10.4	0.8	3.5	0.8	0.1	0.0	0.3
Non-metallic minerals[c/]	10.3	0.0	1.5	4.3	0.0	0.8	0.0
Miscellaneous industries	1.3	0.0	1.5	1.0	1.0	0.0	0.2
Sub-total:	65.3	8.7	9.5	61.5	2.8	12.3	0.7
Service industries[d/]	4.5	0.0	4.4	0.2	1.6	0.4	0.0
Total sanctions	69.8	8.7	13.9	61.7	4.4	12.7	0.7
Private sector	67.5	8.7	9.8	60.1	2.8	12.7	0.7
Public sector	2.3	0.0	4.1	1.6	1.6	0.0	0.0
Total disbursements	58.2	33.7	46.9	42.4	19.7	8.9	5.2

Source: BSB & BSRS.

a/ Includes jute and allied fibers.
b/ Includes forestry and wood products.
c/ Includes glass and ceramics.
d/ Includes inland water and road transport, cinemas, hotels and clinics.
e/ Include amount invested in the government securities.
f/ Net of subsequent cancellations and adjustments.

2.3 Manufactured exports and imports

The share of manufactures[1/] in total exports averaged about 70 per cent in the mid-1980s. In recent years there has been a decline of earnings from jute manufactures due largely to a fall in world jute prices. Moreover the future of jute manufactures looks particularly uncertain due to the difficulties surrounding the renewal of the international jute agreement, which is scheduled to expire in June 1989, and the rapid growth of competition. On the other hand, earnings from garment exports have increased by over 500 per cent over 1983-1986, and in 1987 accounted for about 20 per cent of total export earnings (a share second only to earnings from jute exports). Continued growth of garment exports depends crucially upon tariff restraint on the part of importing nations - particularly the United States' quantitative restrictions on garment exports from Bangladesh. Indigenization of the garments industry must thus be to preserve Bangladesh share of a relatively stagnant world market. The other export success story has been processed shrimps and sea food earnings which have more than doubled over the 1983-1987 period. Fish product exports now account for over 13 per cent of total export earnings.

Table 2.11: Exports of principal commodities, 1983/84-1985/86
(Tk million)

Commodities	1983/84	1984/85	1985/86
Total export	20,136	26,225	27,396
1. Frog legs	194	110	358
2. Prawn and shrimps	1,752	2,066	3,003
3. Tea	1,699	1,570	996
4. Spices	11	8	3
5. Hides and skins raw	1	27	32
6. Raw jute	2,730	3,900	3,438
7. Jute yarn	739	936	633
8. Jute manufacturing total	7,972	8,889	8,395
(a) Hessian	3,129	3,222	2,122
(b) Sacking	63	55	71
(c) Carpet backing cloth	1,614	1,669	1,468
(d) Others	3,166	3,943	4,734
9. Leather & leather manufacture	2,198	1,921	2,362
10. Paper,paper board & paper pulp	-2	220	---
(a) Newsprint	1	220	---
(b) Others	1	---	---
11. Ready-made garments	983	3,722	5,401
12. Handicraft	-41	64	77
13. Others	1,814	2,792	2,698

Source: BBS, Statistical Pocketbook of Bangladesh, 1987, Dhaka, 1987, p. 177.

1/ Defined to include prawns and shrimps, jute yarn, total jute manufacturing, leather and leather manufactures, paper products, ready-made garments and handicrafts.

As Table 2.12 shows the expansion of export demand has been a major source of growth in only two branches - wearing apparel and other manufactures. It has also been of very considerable importance in the case of frozen shrimps but this is not reported in Table 2.12 which presents the results of sources of growth computation for the ISIC sub-sectors of manufacturing. In the majority of cases (18 out of the 26 for which the relevant data is available) growth in domestic demand remains the most significant source of growth. Import-substitution is far lower than in neighbouring countries - India, Pakistan and Nepal and remains confined to industrial chemicals and the metal products branches. In general the scope for expanding import-substitution remains substantial.

The growth of both garment and processed fish exports indicate that there exists considerable scope for the development of an agriculture resource-based export strategy. Whereas depressed world prices for traditional agricultural exports such as jute and tea makes concentration on these products unprofitable agro-based manufactures - garments, leather products, processed food stuffs etc. may fetch higher prices and have better growth prospects.

Table 2.12: Source of growth in gross output, 1978 and 1985
(percentage)

	Domestic demand	Export demand	Import substitution
Food products	312.28	4.15	-216.42
Beverages	112.25	-.25	-12.00
Tobacco manufactures	98.83	.00	1.17
Textiles	110.66	-19.58	8.92
Wearing apparel	-968.80	1061.37	7.43
Footwear	94.40	-.20	5.80
Wood and cork products	30.34	18.87	50.79
Furniture and fixtures	109.78	-.37	-9.41
Paper and paper products	159.69	12.01	-71.70
Printing and publishing	61.96	1.15	36.89
Industrial chemicals	68.83	-.42	31.59
Other chemical products	107.73	.02	-7.75
Petroleum refineries	95.02	5.01	-.03
Miscellaneous petroleum and coal products	97.96	.00	2.04
Rubber products	-211.98	-1.09	313.08
Plastic products nec	73.96	.16	25.88
Pottery china	-6.19	.00	106.19
Glass and glass products	107.69	.00	-7.69
Other non-metallic minerals	541.99	-.77	-441.22
Iron and steel	195.40	.00	-95.40
Metal products excluding machinery	1.37	10.44	88.19
Non-electrical machinery	29.79	1.42	68.79
Electrical machinery	-413.33	7.13	506.21
Transport equipment	-124.04	-27.59	251.62
Professional and s. goods	112.53	1.84	-14.38
Other manufactures	793.93	56.00	-749.94

Source: UNIDO data base.

There are two problems associated with this strategy. Most importantly as Table 2.13 shows even in 'normal' years in terms of weather conditions, agricultural production has grown very slowly. Total agricultural crop production in the mid-1980s is not significantly higher than a decade ago. Bangladesh remains strongly dependent on imports of food, particularly food aid. It has been claimed that the level of food aid crucially determines government revenue and aggregate investment within the economy.

Table 2.13: Agricultural production and value added, 1980/81-1986/87

	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Production (million tons unless indicated otherwise)							
Foodgrains	15.02	14.65	15.36	15.75	16.12	16.08	16.50
Rice	13.88	13.63	14.21	14.51	14.62	15.04	15.41
Aus	3.29	3.27	3.06	3.22	2.78	2.83	3.13
Aman	7.96	7.21	7.60	7.93	7.93	8.54	8.27
Boro	2.63	3.15	3.55	3.35	3.90	3.67	4.01
Wheat	1.09	0.96	1.09	1.21	1.46	1.04	1.09
Others	0.05	0.05	0.05	0.03	0.03	0.01	0.01
Jute ('000 bales)	4,943	4,646	4,881	5,216	5,111	8,610	6,753
Cotton ('000 bales)	.10	.55	.58	.46	.29	.29	.22
Pulses	0.22	0.21	0.20	0.19	0.19	0.18	0.17
Oilseeds	0.25	0.26	0.26	0.27	0.27	0.27	0.25
Sugarcane	6.60	7.14	7.48	7.29	7.00	6.64	6.90
Potatoes	1.00	1.08	1.17	1.19	1.18	1.10	1.07
Sweet potatoes	0.70	0.69	0.73	0.72	0.68	0.61	0.55
Tea (thousand tons)	.40	.39	.41	.42	.38	.37	n.a.
Tobacco (thousand tons)	.48	.51	.51	.49	.50	.46	.40
Real growth in value added (per cent)							
Crops	5.9	-0.7	4.9	1.1	1.2	4.4	-0.2
Livestock	2.5	5.8	2.4	1.9	2.3	2.4	2.5
Forestry	7.9	10.5	1.9	9.3	-6.5	6.0	-1.3
Fisheries	0.2	5.8	6.8	0.7	2.3	0.8	1.3
Total agriculture	5.3	0.9	4.6	1.6	0.9	4.0	0.1

Source: Bangladesh Bureau of Statistics; Ministry of Agriculture; World Food Programme, Dhaka, and World Bank, Bangladesh: Adjustment in the Eighties and Short-term Prospects, Report No. 7105-BD, March 1988.

Secondly, Bangladesh grows virtually no cotton and the development of the textile and garment industry requires increasing volumes of cotton imports. In order to ensure supplies - particularly in periods of foreign exchange shortages - it will be necessary to develop long-term arrangements for the supply of cotton from neighbouring countries. The Bangladesh textile industries developed on the basis of assured supplies from the cotton surplus regions of Pakistan. The establishment of faster arrangements guaranteeing the supply of cotton can play an important part in strengthening the long-term viability of the textile and wearing apparel industry in Bangladesh.

Bangladesh's dependence on imports is evident from Annex Table A-6 which gives the import to apparent consumption ratio for a range of manufactured products. For 60 per cent of these products the import to apparent consumption ratio equals 100 per cent. Import substitution has remained confined to a small group of manufacturing branch - food manufacture, textile, wood and paper products, a small number of industrial chemicals and fertilizers.

The manufacturing census for 1982/83 estimated that the share of imported raw material in total manufacturing purchases equalled 29.7 per cent.[1/] This is significantly lower than Sub-Saharan countries (where the ratio of imports to total raw materials used typically exceeds 60 per cent)[2/] but substantially higher than the level of import sourcing in both India and Pakistan. Bangladesh's relative lack of mineral resources makes it unlikely that this import sourcing ratio can be significantly lowered in the medium-run. In the agro-based industries the import content of raw materials used is already quite low - in the food manufacturing, tobacco and beverages it is almost zero. The real challenge for Bangladesh as for other South and South-East Asian economies is to reduce the import content of technology and equipment inputs by the development of an efficient capital goods industry. An important aspect of the industrialization strategy in the 1970s and 1980s is that whereas the former laid some stress on this, investments in capital goods projects have been significantly reduced in both the Second and Third Five-Year Plans.

A principal concern of these policies is to rationalize the structure of protection and to correct the presumed basis against export-oriented manufacturing units. A summary of effective protection rates (EPR) for 1985/86 is presented in Table 2.14.

1/ BBS, Report on Bangladesh Census of Manufacturing Industry, 1982/83, p. 345.

2/ See UNIDO, Industrial Development Review Series: Nigeria, PPD. 100, 1988, p. 77.

Table 2.14: Effective rates of protection in Bangladesh, 1985/86

Range	Products
> -100%	Textile machinery, machine tools
-1% to -99%	Nylon socks (domestic), cotton vests (domestic), paints and varnishes, diesel engines, power-tiller (-1 %), bulbs (-2 %)
+1% to +100%	Nylon socks (exports), cotton vests (exports), trousers (exports), ship-making, bicycles
Over +100%	Sugar manufacturing, cotton yarn, grey cotton, shirting (handloom and powerloom),grey polyester shirting and suiting (handloom and powerloom), sulphuric acid, transformers, assembled TVs
NVA (negative value added)	Bleaching powder, caustic soda, dry-cell, batteries, mild steel billets, plate-(heavy) CGI sheets

Source: A. Rab, Analysis of Assistance Policies for the Sugar Industries, 1985, Management Unit Assistance Policies for the Textile Sector, 1985, T. Hutchessa, Assistance Policies for Chemical and Allied Sectors, 1985, Management Unit Assistance Policies for the Steel and Engineering Industries, 1985. All reports produced by the Trade and Industry Policy Reform Programme, Planning Commission, Dhaka.

Data presented in Table 2.14 ought to be viewed with extreme caution due to the arbitrary nature of the assumptions underlying all EPR estimate.[1/] Moreover there is no particular reason why existing EPR's structure represent a bench mark for future investment strategies - "border" prices of inputs and outputs may change dramatically, natural disasters may have a strong impact on domestic availabilities. Development of this type may mean that EPR/DRC estimates become irrelevant as guides to the development of strategies seeking to foster industrial efficiency or manufactured growth.

The information in Table 2.14 does however provide a picture of the impact of protection. In general there was heavy effective protection of food products, cotton products,[2/] and chemicals. The range of EPRs even within the same branch is very wide, and the development of a trade policy which can significantly reduce this spread will not be an easy task. Nevertheless the concern to stimulate export growth will induce the government to search for effective means to reduce anomalies within the protection system which requires drastic pruning of specific policy instruments designed to promote the sub-sectors manufacturing.

1/ Assumptions relate to 'average' estimates of all input and output costs, impact of domestic subsidies and taxes, border prices of both inputs and outputs. Moreover actual sales price usually deviates from the estimated border price plus the nominal protection rate due to existence of quantitative restrictions and the level of domestic output.

2/ With the exception of cotton vests.

3. PROBLEMS AND PROSPECTS OF SELECTED INDUSTRIAL BRANCHES

3.1 Small-scale and cottage industries

In the early 1980s small-scale and cottage industries (excluding handlooms) accounted for 72 per cent of aggregate manufacturing employment and 32 per cent of MVA (see Annex Table A-7). The Third Plan estimates that if the handloom sector is included the contribution of the small-scale and cottage industries would amount to 49 per cent of MVA in 1984/85.

Over 60 per cent of the MVA generated by small-scale enterprise is in the food manufacturing branch. The main units are being bakeries, rice mills and flour mills. Light engineering roadside workshops account for 3 per cent of gross output within the small-scale sectors, but their share in sub-sector employment is 6 per cent. The rice and flour mills have a high value added to gross output ratio (52 per cent as against 24 per cent for the small-scale textile enterprises) but this reflects that a large proportion of the output represents milling for others against payment. The engineering units also have a high value added to gross output ratio (51 per cent) and this may be taken to represent an indication of enterprise efficiency. In general small-scale enterprises are much less capital intensive than the large- and medium-scale firms and a unit of investment in this sub-sector generates a much larger direct employment impact.

Within the cottage industries group units producing cane, bamboo and wood products account for 16 per cent of gross output and 22 per cent of employment (Table 3.1). Tailoring establishments produce about 7 per cent of cottage sector output and employ 11 per cent of its workers. Other major cottage industrial occupations as shown in Table 3.1 include rice mills, potteries, production of sweet meat and fish processing units. Major growth potential has been identified for tailoring, furniture, cycle repairs and light engineering establishments. In 1981 the repair and engineering firms accounted for only about 4 per cent of the value added and of sales within this sector. Their share in cottage industry employment was however 6 per cent.

Most cottage industries are rural-based and employ non-mechanized production methods. The industry structure is more diversified than that of the small-scale sector. They produce a wide range of simple light processed commodities for the lower-income groups in both town and village. However 12 of the 16 sub-categories identified in Table 3.1 have been classified as "stagnant" - i.e. with limited growth prospects and there is a possibility that particularly in disaster prone areas the rate of closure of cottage enterprises may have increased dramatically since the early 1980s. The cottage industries are likely to be more severely affected by disasters. Rehabilitation may be relatively inexpensive from a donor point of view but raising even very small amounts of capital is probably beyond the means of most cottage industry operators. Cottage industries are less capital intensive than either large- or small-scale enterprises.

Table 3.2 reports data on the relative performance of the three manufacturing groups in Bangladesh. While value added per employee and the fixed assets per employee are significantly higher in the large-scale industries, the value added to fixed assets ratio is higher for the small and cottage industries excluding the food cottage industries than it is for large manufacturing firms. It is thus clear that capital intensity is not much lower in the small-scale sector than it is in the large.

Table 3.1: Major cottage industries in 1981

Industry	Number of units	Total number of persons engaged	Hired workers	Sales (Tk mill.)	Value added (Tk mill.)
Bamboo and cane work	42,200	126,000	3,800	500	263
Tailoring[a/]	45,200	96,500	23,200	668	303
Pottery	16,500	76,000	2,200	367	174
Fish nets	19,600	58,200	1,300	248	109
Rice mills	17,300	43,700	20,800	714	257
Mats and reeds	12,600	40,500	900	144	77
Wood products	13,400	32,400	2,300	421	150
Gur (local sugar) making	8,200	31,400	5,800	183	42
Wood handicrafts	10,100	29,400	500	133	75
Sweet meat	8,100	28,100	9,700	689	251
Wooden furniture[a/]	7,900	26,900	10,800	604	151
Blacksmiths	9,600	23,600	1,700	207	86
Goldsmiths	10,400	21,400	2,400	285	106
Oil mills	8,000	21,100	1,800	399	85
Cycle repair shops[a/]	6,300	12,500	1,900	118	67
Light engineering[a/]	2,500	10,100	6,900	258	72
All cottage industries of which:	299,100	854,800	155,900	9,556	3,192
- 12 large "stagnant" sectors	176,000	531,800	53,200	4,290	1,675
- 4 large expanding sectors[a/]	61,900	146,000	42,800	1,648	593
- 141 remaining sectors	53,200	177,000	59,900	3,618	924

Source: Cottage Industries of Bangladesh: A Survey, Bangladesh Small and Cottage Industries Corporation, Dhaka, October 1983.

a/ Potential growth industries.

Further the quality of goods produced by small and cottage enterprises is poor and demand is restricted to those low-income groups who cannot afford higher priced goods. More needs to be done to improve enterprise efficiency within this sector and to encourage adaptations which permit an upgrading of production technology without a contraction of the level of employment at least within the small and cottage sub-sector as a whole. This is entirely compatible with an increase in the size and a reduction in the number of such an enterprise. The very small size of cottage industries represents a distinct market handicap. Thus, Chowdhury has shown that the imperfection of import market structures seriously impedes the growth of handloom cotton weaving industry.[1/] Studies have estimated that there exists considerable scope for expanding employment opportunities within the cottage and small sector.

1/ N. Chowdhury, "On the Structure of Input and Product Markets in Cotton Weaving Industry of Bangladesh", BDS, Volume IX, No. 2, (1981), pp. 43-74.

Table 3.2: Ratios between employment, value added and fixed assets, 1981/82

Industry group	Value added per employee (Taka)	Value added fixed assets ratio	Fixed assets per employee (Taka)
All industries	7,225	0.83	8,700
of which:			
Large-scale	22,200	0.74	30,000
Small-scale	5,500	0.93	5,800
Cottage	3,730	0.93	4,000
Textile industries	5,415	0.97	5,600
of which:			
Large-scale	13,400	0.84	16,050
Small-scale	4,815	0.98	4,890
Cottage	2,490	1.90	1,315
Handlooms	2,770	1.39	2,000
Food industries	7,890	0.82	9,660
of which:			
Large-scale	31,840	0.95	33,300
Small-scale	4,825	0.99	4,900
Cottage	4,970	0.56	8,900
Wood, bamboo, cane	4,020	1.14	3,530
Metal working	9,570	0.38	24,960
of which:			
Large-scale (unadj.)	21,810	0.23	95,830
Large-scale (adj.)	21,875	0.42	52,405
Chemicals	45,000	1.02	44,300
of which:			
Large-scale	52,270	1.01	51,500

Source: Chr. Michelsen Institute, Bangladesh: Country Study, 1986, p. 282.

A detailed survey of rural industries undertaken by the Bangladesh Institute of Development Studies (BIDS)[1/] during 1982/83 identifies a high potential for employment generation particularly landless and near landless section of the population. However lack of training facilities and the low level of returns on investment inhibit the attraction of entrepreneurial talent to rural industry. This means that production technology remains traditional, and innovations are rare. Factor productivity growth is minimal. Investment levels cannot rise due to severe credit shortages. The low levels of institutional lending have remained a very important barrier to the growth of investment.

1/ As reported in Bangladesh Development Studies, Volume XIII, No. 1-2, 1984.

Internal financing remains the main investment source, and the hold of the traditional money lender has not been broken in the Bangladesh countryside. Internal resources are constrained by the extremely low ratio of return in rural industry. Profits cannot rise principally because of the very low and stagnant level of effective demand for the products of the rural manufacturer. The rate of growth of agricultural productivity is the prime determinant of the profitability of rural industry. Agricultural incomes are one-third below urban ones and the inter-sectoral income gap is growing. The existence of a very small surplus to agricultural workers after meeting food needs means that the demand for the products of rural industry remains weak.

Many policies have been adopted with the specific aims of strengthening small and cottage enterprises. The most important is for redesigning the institutional support system to rapidly increase the level of managerial and technical training facilities available to these enterprises on the one hand and to modify the process of credit distributions on the other. Relatively little concessional assistance has been allocated to programmes aimed at facilitating cottage and small-scale enterprises.

3.2 Textile and wearing apparel

Textiles accounts for one-third of MVA and two-thirds of the total employment in the large-scale manufacturing sector. If handlooms, small-scale and cottage enterprises are also taken into consideration, the textile sector's share of total MVA and total manufacturing employment stands at 37.4 per cent and 50 per cent respectively. About 60 per cent of total textile and wearing sector employment is within the handloom sector. The share of textiles in small-scale and cottage MVA and employment is relatively insignificant.

Cotton and synthetic fabrics

The cotton spinning capacity is about 1.25 million spindles - about 40 per cent of these being owned by the Bangladesh Textile Mills Corporation (BTMC). BTMC's share of national spinning capacity has been significantly reduced since 1976. A number of nationalized mills have been given back to their owners and many State-owned mills have been sold to the private sector. There has been very little addition to spinning capacity made by the private sector during 1982-1987. BTMC established 2 new mills with a total capacity of 37,500 spindles during this period.

Domestic demand for cotton and blended yarn is significantly larger than domestic production. There is therefore considerable room for expansion of the production of cotton and mixed yarn. In the long run it would be quite realistic to expect that an eventual yarn surplus could be exported provided that appropriate export incentives were given. Presently, the efficiency of cotton spinning, especially in BTMC mills, leaves considerable room for improvement. This is needed especially to provide a larger support to handloom weavers and to effectively deal with smuggled illegal imports.

The spinning segment of the textile industry employs some 50,000 persons. It is relatively labour-intensive although less so than other parts of the industry. Cotton spinning has strong forward linkages as a supplier of yarn to weaving units, in particular to the handloom sector which according to recent estimates consists of 260,000 operating looms which produce approximately 500 million yards of cloth. Handloom production provides almost three-quarters of the country's total cloth supply, both domestic and imported. Moreover, handlooms employ some 900,000 persons and are by far the largest single source of employment in the manufacturing sector.

The spinning industry also has actual and potential backward linkages in cotton production and in production of spare and replacement parts of the industry and of probably some machinery equipment. Some 3 to 5 per cent of the cotton used is domestically produced, the quality of which is reported to be good. Production has, however, been erratic. The industry uses and supports considerable production of spare parts for textile machinery. Recently, growth in certain areas of textile production is generating a sizeable market for new machines for both spinning and weaving operations.

Two mills are presently producing viscose rayon and nylon yarn, Karnaphuli Rayon and Chemicals and Pylon Industries. Both mills are in the public sector. A de-nationalized private sector mill has newly started producing polyester-cotton blended yarn, which is also manufactured by another private mill. Rajshahi Silk Factory and Thankurgaon Silk Factory, both public sector concerns, produce silk yarn along with a number of private factories. Small, indigenous reeling establishments in fact account for a significant proportion of total silk yarn output.

Domestic production of specialized yarn falls far short of demand. The demand for synthetic yarn is mostly for imported polyester yarn which is generally superior in quality to domestic yarn. This part of the textile industry is an exception in that the production of rayon, nylon and silk yarn suffers from serious cost disadvantages.

Woven fabrics are mainly produced by the handloom sector. Semi-automatic handlooms are very slowly replacing manual operated ones, at least in the small towns. During the 1960s powerlooms had increased rapidly but there was no increase in the number of powerlooms during 1972-1982. After the liberalization of imports, the number of powerlooms has increased rapidly and textile machinery has become the single most import category. Polyester and blended fabric operations are increasingly powerloom based.

Fabrics produced include saris, lungis, shirtings and suiting cloth. Handlooms continued to account for the bulk of the output as well as the output of linen and mosquito netting. Domestically manufactured textiles are mainly sold on local markets and exports remain small. Very little domestic fabric is used in the export garment sector. Export prospects can be significantly improved by producing better quality product with superior finishing. Modern dyeing and finishing capacity remains limited. Capital obsolescence is a particularly important problem within this sector. There is a dearth of computerized colour matching equipment.

A major sub-sector of the textile industry comprises numerous small-scale and cottage enterprises engaged in producing knitted hosiery fabrics and clothes. Virtually all of the output produced is for the domestic market. Only a trickle of knitwear in the ready-made garment sector is marketed abroad. Even main product groups in this sub-sector: upper undergarments (ganjees), sports and T-shirts, underwear or lower undergarments, brassiers, socks, mufflers and sweaters. Cotton ganjees and underwear dominate the product mix. Other products use larger amounts of synthetic and mixed fabrics or yarn. The industry is labour intensive as the capital requirement involved is quite small.

Production of ready-made garments for exports has grown very rapidly in recent years. Currently there are about 500 units within this sector and exports exceeded Tk3 billion in 1987 (second only to jute and jute products as a foreign exchange earner). The ready-made garments are almost totally dependent on imported fabrics and trim materials - net export earnings are therefore very significantly below gross export receipts. Imposition of quota restrictions by the United States and Canada severely constrained the further growth prospects of this sector. Owners of the export-oriented garments factories are often non-Bangladeshis and these units employ a relatively capital-intensive technology of production. The use of labour-intensive technology has shown to be more efficient- handloom-based operations are seen to generate higher financial returns than powerloom-based operations.1/ There exists some grounds therefore for an "indigenization" of the export garment sector. There is a need for increasing auxiliary support and access to credit of the handloom sector in particular.

Jute goods

Total production of jute goods declined from a peak of 591.4 thousand tonnes in 1983/84 to 502.7 thousand tonnes in 1984/85 and to 434.3 thousand tonnes in 1985/86. There was a significant recovery during 1986/87 (production increasing by about 20 per cent) but the flood disasters of 1987 and 1988 have once again taken a very heavy toll as far as the jute manufacturing industry is concerned.

Jute manufactured goods currently account for about 30 per cent of total export earnings. India is rapidly increasing its share of the world market and is soon likely to replace Bangladesh as a leading exporter of jute. China is the other major competitor. The international jute market is contracting rapidly due to changes in bulk handling procedures and also due to the rapid replacement of jute by synthetic-based products.

Only about 7 per cent of jute products are domestically consumed in Bangladesh - this compares with a corresponding rate of 75 per cent for India and 90 per cent for China. The Bangladesh jute goods industry is seriously constrained by supply shortages and very wide fluctuations of price. During 1986/87 - the last 'normal' year - raw jute prices fell to levels below production costs. In fiscal 1988/89 production is likely to be only about 70 per cent below the peak 1985 level - even in the last 'normal' year 1986/87, production remained well below this level. World prices of jute have also fluctuated very widely.

The jute industry was nationalized in 1973. Since then Bangladesh Jute Mills Corporation (BJMC) monopolized the production of jute goods for a decade. In the face of the government's privatization policy, 33 of BJMC's mills were privatized in 1982/83 although the largest mills have been kept by BJMC, whose capacity currently accounts for about two-thirds of the total installed capacity. Bangladesh Jute Mills Association (BJMA) represents the organization of 36 private sector jute mills. Since de-nationalization, however, the private sector jute mills have been incurring loss and accumulating debt. By August 1988 six private sector jute mills shut down their operation and more mills will be forced to follow suit unless a special rescue fund is established. BJMC has also acquired a large sum of debt.

1/ TIP Document, TIP IIPU.B-5 (1985).

The unfavourable performance of the jute mills is attributed to erratic movements in the international market price of raw jute and an insignificant gap between the international sales price of jute goods and their production cost. While the price of jute goods has tendency to decline due to the shrinking markets, wage rates and energy costs have been increasing. In addition, the lack of infrastructure, in particular, frequent power failures has adversely affected the performance of the jute mills.

The growth prospects of the jute industry is restricted by the limited domestic and world market. Bangladesh could explore the possibilities of an increase in the domestic consumption of jute. In the long run effective means have to be found for a redeployment of capital from jute to more profitable manufacturing branches.

Given the relative importance of the textile sector in terms of its contribution to MVA and manufacturing employment Bangladesh needs a carefully designed multi-tiered textile sectoral strategy. One element (as mentioned in the previous paragraph) is the restructuring of the jute textile sub-sector. This would involve a reorientation of demand pattern - a switch from export to domestic market orientation - and a redeployment of capital and labour to other manufacturing sectors. Cloth represents a basic need of the people and the handloom sector is a relatively efficient provider of significant levels of employment opportunities. Priority must therefore be attached to increasing its access to capital and markets and to technological equipment enabling to export and improve the range of products it is capable of producing.

As far as the export sector is concerned there is a strong need to increase its integration with the domestic-demand-oriented industries. The share of domestic resources in total inputs within this sector must be increased and it must be induced to make a contribution towards an enhancement of technological skills. Without increasing subcontracting linkages garment exporters will not increase net export earnings in the future particularly in view of the increasing severity of quota restrictions.

Finally an effort must be made to increase the backward linkages of the textile sector. There also exists some scope for the domestic production of textile machinery. The large-scale sector can benefit from this. It badly needs investment for replacing obsolete capital stock and machinery and its capacity for product design and quality control. Multilateral assistance can play a useful role in the development and implementation of such a multi-tiered textile sector strategy in Bangladesh.

3.3 Fertilizers

The fertilizer industry in Bangladesh encompasses three urea and two Triple Superphosphate (TSP) plants owned by the Bangladesh Chemical Industries Corporation (BCIC). The Bangladesh Agricultural Development Corporation (BADC) is responsible for the marketing and distribution of fertilizers. Bangladesh is self-sufficient in nitrogenous fertilizers (produced in the form of urea). In normal years about 6 per cent of the output of urea is exported. Bangladesh remains heavily import dependent as far as the supply of phosphatic, pottassic and compound fertilizers is concerned.

Privatization of operations within the fertilizer industry has been concentrated on a decentralization of the distribution system, with BADC relinquishing responsibility to a network of private retailers under a new marketing system. The weak transportation infrastructure and the frequent breakdown due to floods as well as reduction in the river bed level (which makes boating impossible) necessitate a widespread regional/local distribution and stocking network to ensure timely supply of inputs to rain-fed crop producers. A high stock policy is also needed due to the very limited working capital of the farmers. It has been estimated that stocks equivalent to 3-5 months needs of domestically produced fertilizers and 2 months needs of imports should be available at the beginning of cropping seasons.

Fertilizer consumption grew at an annual average rate of about 10 per cent per annum during 1971/72 to 1980/81. Straight fertilizers represents about two-thirds of total use. Despite the rapid growth, use intensity remains among the lowest in the world. Sales figures represent only about 30 per cent of requirements estimated at 5 million tonnes (Table 3.3).

About 80 per cent of the fertilizer used is applied to the rice crop. Jute, wheat and sugarcane account for about 14 per cent. Usage is highly imbalanced[1/] with the result that improvements in yield are modest. In order to increase fertilizer use the government seeks to maintain a uniform price structure. However the level of subsidization has tended to fall sharply during the 1980s. Domestic demand is expected to reach 3,824 thousand tonnes by 1990 requiring total imports of about 1,200 thousand tonnes.

The share of imports in total procurement has declined from 67.9 per cent in 1974/75 to 33.2 per cent in 1984/85. Improving capacity utilization within existing plants can significantly lower imports. Expanding production is facilitated by the existence of sizeable quantities of natural gas which is the basic raw material for nitrogenous fertilizers.

Installed capacity and actual production level of the fertilizer factories for the period 1976/77 to 1983/84 are illustrated in Annex Table A-8. Most of the factories are operating below capacity and there is scope for improvement. Various factors such as unsatisfactory initial construction and installation of plant machinery, poor maintenance, loss of skilled personnel, power failures and poor management have led to this situation. The performances of Zia Fertilizer Company Ltd. (ZPCL) and the Triple Superphosphate (TSP) factories are, in particular, extremely unsatisfactory.

Fertilizers have often been made available through aid-financed programmes. All fertilizer imports are negotiated by the government through BADC. Purchases are made through open competitive bidding, subject to conditions which may be attached to various loans/grants. Some donors supply the product to BADC. Because of dependence on foreign assistance for financing fertilizer purchase, availability of funds has to be carefully timed with import needs. For this, BADC maintains regular contacts with the External Resources Division of the Ministry of Finance and the donor governments/aid-giving agencies. On occasions, fertilizer review meetings are held where all donors interested in the fertilizer sector are invited. Delay in availability of aid-funds or disruption in import schedules have caused stock problems for BADC in some cases in the past.

1/ NPK ratio ranges from 1:33:11 to 1:5:12 as against the recommended optimum ratio of 1:93:66.

Table 3.3: Fertilizer use by crop as compared with average recommendations, 1979/80-1989/90

Season/crop		Average recommendations Kg($N+P_2O_5+K_2O$)/ha			1979/80 Kg($N+P_2O_5+K_2O$)/ha	1979/80 (Percentage of recommended use)	1984/85 (Percentage of recommended use)	1989/90 (Percentage of recommended use)
Boro[a]	HYV[b]	100-65-45	=	210	130	62	66	70
	LV[c]	50-35-35	=	120	8.3	7	14	22
Aus[a]	HYV	75-65-55	=	195	71.8	37	43	50
	LV	50-40-30	=	120	22.1	18	25	31
Aman[a]	HYV	100-65-40	=	205	74.6	36	42	49
	LV	55-40-35	=	130	20.3	16	23	29
Wheat	HYV	95-65-45	=	205	75.5	37	43	50
	LV	50-40-30	=	120	20.3	17	24	30
Pulses		25-50-25	=	100	3.7	4	9	14
Oilseeds		25-50-25	=	100	18.4	18	24	28
Other cereals		40-30-20	=	90	31.3	35	38	41
Sugarcane		130-90-90	=	310	21.2	7	12	16
Jute		45-15-20	=	80	12.9	16	24	33
Tobacco		55-70-40	=	165	75	45	50	56
Vegetables		90-90-90	=	270	60	22	30	38
Spices and condiments		45-45-30	=	120	9.2	8	13	17
Chillies		70-80-50	=	200	25.8	13	22	30
Potatoes		140-90-100	=	330	76.4	23	31	38
Cotton		50-45-35	=	130	125	96	97	98
Fruit crops		40-40-20	=	100	...	...	5	10
Sweet potatoes		20-40-40	=	100	...	...	5	10
Tea		135-53-35	=	223	223	100	100	100

Source: Bangladesh Chemical Industries Corporation.

a/ Rice.
b/ High-yielding varieties.
c/ Local varieties.

Import prices have varied widely depending on sources of supply and conditions of aid (Table 3.4). Prices of fertilizer supplied under aid have generally been substantially higher than world market prices.

Table 3.4: Comparison of free market world prices and prices of fertilizer under tied aid in Bangladesh, July 1983 through September 1984 (US$ per ton)

Fertilizer	Source	C&F price	Spot market C&F price	Difference[a/] (per cent)
Urea	USAID[b/] grant	210.25	185.00	13.65
	SAUDI grant	205.00	185.00	10.81
	USAID[b/] grant	242.34	185.00	31.00
	Cash foreign exchange	183.00	185.00	-1.08
TSP	NORAD grant	198.72	175.00	13.55
	UK grant	199.74	175.00	14.14
	ADB credit	188.74	175.00	7.85
	IFAD credit	192.78	175.00	10.16
	Dutch grant	182.34	175.00	4.19
	Danish grant	203.30	175.00	16.17
	Danish grant	203.30	175.00	16.17
	KFW (German grant)	174.39	175.00	-
	Netherlands grant (bulk)	190.15	175.00	8.66
	Romania barter	192.00	175.00	9.71
	Romania barter	192.00	175.00	9.71
MOP	CIDA grant	141.30	120.00	17.75

Source: Import data from Bangladesh Agricultural Development Corporation. Free market data from World Bank. Commodity Trade and Price Trends (Washington, D.C., World Bank, 1982 and 1983 editions); and recent unpublished information from the World Bank.

a/ Percentage difference is C&F price under tied aid minus free market price divided by free market price times 100.

b/ United States Agency for International Development.

The availability of fertilizers through foreign aid financed programmes has reduced the pressure on the government to increase production. Similarly the low purchasing power of the peasants has restricted the growth of effective demand. An increase in farm income depends upon the provision of substantial increase in fertilizer application rates. It is therefore essential that the government pays serious attention to the task of eliminating excess capacity in existing plants, improving the distribution and storage facilities (providing adequate incentives for the private sector to handle this end of the operation efficiently) and investigate alternative technology spectrums for the production of fertilizers on a small-scale. The

experimental work done in both India and the People's Republic of China can be of great importance in this respect. A regional sharing of experience can go a long way towards expanding the productive base of the Bangladesh fertilizer industry.

3.4 'Country boat' building[1/]

Country boats refer to non-mechanized crafts involved in both commercial and domestic household operations. In 1974 a national survey estimated the total fleet of boats with over 30 maunds[2/] of capacity each as about 63,000 vessels. Annex Table A-9 shows that during 1972/73 water transport accounted for 64 per cent of the tonnage of internal transportation of 9 key commodities - the share of water carriers being highest in the case of coal, jute and jute goods, stones and petroleum products. By 1977/78 the water carrier share of total transportation had dropped to 51 per cent. In 1974/75 country boats accounted for 72 per cent of total water carrier tonnage. Hence although there has been a secular decline in the share of the country boat sector it is clear that they account for well over a third of the total cargo carried within the country. There seems to exist a division of labour between the country boats and mechanized crafts; the former specializing in the carriage of building materials and salt, the latter in the carriage of jute goods and fruits. In general tracks are a much more important source of competition for the country boat sector than mechanized craft.

Country boats may be classified according to sea going and inland water carriers. The latter are more numerous. Most commercial vessels are "big" - capable of carrying loads in excess of 100 tonnes. Construction of country boats is entirely indigenized. Materials involved in construction include wood, bamboo, iron, jute rope, petroleum, paper, oil and tar, cowdung and firewood and cloth. Thus the skills and expertise of a large number of craftsmen are required - woodcutters, bamboo net makers, producers of hardware, blacksmiths and rope-makers. The falling real income of most of these workers has led to a serious depletion of capital stock (a boat carpenter for example needs about Tk3,000 in fixed capital stock in the late 1980s which is a considerable sum) which is paralleled by a corresponding decline in the demand for new boats. Most of the demand is now geared to maintenance and repair work. Moreover there has been a growing tendency towards improvisation and adaptation of boat design to accommodate changing to cargo needs and to growing pressures for mechanization. The rising cost of wood necessitates a consideration of its substitution by other materials (e.g. ferro-cement) but this would generate a substantial employment displacement effect and it is therefore advisable to consider the introduction of wood preservation and conservation techniques. Changes in technology involving substantial investment are ruled out due to very low rates of return and the existence of very fierce competition both among the country boat operators and between them and trucks and cargo launches. Cargo prices charged by boat operators are also constrained by the existence of a network of depending relationship between the operator and the boat owner and local traders - the former is often a "client" of the latter dependent on him for both commercial and political favours.

1/ This section is based on A.J. Dolman (et al), The Country Boats of Bangladesh, Chr. Micheln Institute, 6 volumes, 1986.

2/ A unit of maund is equal to 82.28 pounds.

Country boats carry a relatively restricted range of cargoes. They face a declining import once in the inter-district movement of paddy and rice and in jute. There is deliberate discrimination against country boats in the allocation of jute cargoes by public corporations. Country boats have a strong and persistent comparative advantage in the transportation of sand and a monopoly in the transport of crude salt and are dominant in the transportation of fruit and vegetables as well as timber and firewood. Public assistance for increasing the efficiency of the country boat sector should concentrate on the few commodity transport system in which country boats are seen to have a clear medium-run comparative advantage.

There is a clear case for increasing financial and auxiliary support to the country boat industry. Most important is the very substantial employment effect of investment in this branch. Country boats generate 12 times as much employment per tonne-mile per hour as trucks and 20 times as much employment as cargo launches. Seasonal variations in employment levels are becoming increasingly important. Since independence there has been a rapid increase in part-time and temperory employment on the boats. Wages remain very low and the typical income of a boat man is about half the national per capita income level. Boat men - both crew members and the vast majority of craftsmen employed in the boat-making trade are among the poorest people in Bangladesh.

Rates of return on boat operation are very low and have declined significantly during the 1980s. Country boats continue to remain a virtually important transportation source in rural areas. But without technical developments in boat design, changes in the system for allowing cargo and expanded dredger operations on feeder routes for country boats, efficiency of this sector cannot be improved and rates of return will continue to fall. The cost of constructing country boats in 1983 prices are given in Table 3.5, for four capacity-sizes: 1000, 500, 250 and 125 md boats. Fifty to sixty five per cent of the total cost is accounted for by wood, 5-7 per cent by iron, nails, 1-5 per cent by the mast, 5 per cent by sales and 16-20 per cent by labour. The proportion of wood in the total cost appears to increase as capacity decreases, perhaps because smaller boats require less of other materials and equipment, for example coal-tar, rope and anchor.

There is decreasing cost per maund capacity for increasing size of boat except in the case of the largest-size boats, for which cost per maund capacity actually rises. This may be explained by the fact that higher quality wood is used in a greater proportion for larger boats, and average unit cost is consequently higher. While the per maund capacity costs of inland boats were between Tk23 and Tk35 in 1973, they now range between Tk92 and Tk128. The average cost per maund capacity has increased more than 3.5 times in nominal terms wihin 10 years. This increase does not reflect the real increase in that there has presumably been a simultaneous shift in the quality and, in the cases of smaller boats, of the quantity of wood used. The actual increase in wood prices has been much higher. The price of Chittagong timber went up 4.8 times during a period of 8 years between 1971-1972 and 1979-1980. The price of Sundari wood, most commonly used for inland boats, has at least quintupled during the last 10 years.

The amount of nails used in boat construction also seems to have decreased during the last decades due to the use of lighter nails and staples to compensate for price increases. At the same time, the nails being used at present are of a more inferior quality than formerly. In considering construction costs of boats of the various categories, note has to be made of the fact that big variations can exist between the construction costs of boats of different types in different areas. The figures presented in Table 3.5 are generally representative of construction costs of boats in the Pabna, Dhaka, Mymensingh, and Comilla areas.

Table 3.5: Country boat construction cost, 1985[a/]
(Taka)

Capacity (mds)	Wood			Iron, nails			Mast	Sail	Others[b/]	All materials	Labour	Total cost	Average cost per md. capacity
	Quantity (cft)	Unit cost	Cost	Quantity (mds)	Unit cost	Cost							
1000	350	150	52,500	9	600	5,400	4,700	5,000	19,100	86,700	18,000	1,04,700	105
			(50)			(5)	(4)	(5)	(18)	(83)	(17)	(100)	
500	200	130	26,000	5	600	3,000	2,200	2,500	3,400	37,100	9,000	46,100	92
			(56)			(7)	(5)	(5)	(7)	(80)	(20)	(100)	
250	120	130	15,600	3	600	1,800	800	1,200	1,800	21,200	4,000	25,200	101
			(62)			(7)	(3)	(5)	(7)	(84)	(16)	(100)	
125	80	130	10,400	2	600	1,200	100	800	500	13,000	3,000	16,000	128
			(65)			(7)	(1)	(5)	(3)	(81)	(19)	(100)	

Source: A.J. Dolman (et al), The Country Boats of Bangladesh, 1986, p. 363.

a/ Figures in paretheses show percentages.

b/ Includes coal tar, rope, anchor, rudder, oar, roofing, floor, bamboo, cooking utensils.

Capital cost, scrap value at the end of the boats' lives, and the length of life are given in Table 3.6. Increase in wood prices has induced boat owners and boat-makers to use a greater proportion of cheaper and lower quality wood. This change is not due simply to the usage of relatively cheaper types of wood, but also to the use of less mature timber that is now being cut down. Boats made of cheaper wood are more likely to suffer leakages, perhaps causing damage to cargoes, necessitating that one crewman is engaged in bailing out water. The result is a deterioration in the efficiency of operations. Also, the inferior material reduces the life expectancy of the boats and thereby the size of incomes that can be generated during its life. The higher annual depreciation negatively affects the net income. The negative effect on net returns is heightened by the rise in maintenance costs associated with wood-price rises.

Table 3.6: Capital cost, scrap value and life-span, 1985

Capacity (mds)	Capital cost (Taka)	Scrap value at end of life (Taka)[a/]	Life-span (years)[b/]
800 - 1499	104,700	9,423	45
350 - 799	46,100	3,227	35
200 - 349	25,200	1,764	25
50 - 199	16,000	480	15

Source: A.J. Dolman (et al), The Country Boats of Bangladesh, 1986.

a/ Estimated from the capital cost.

b/ Estimates.

Increasing costs and falling real rates of return (which are often negative when depreciation costs are taken into account) have created a need for credit facilities. The extension of state credit and the acceptance of construction material and related assets as collateral by commercial banks can go some way towards increasing the rate of investment within this sector.

A wide range of measures is required to increase the efficiency of country boat operations. These are necessary because at the end of the present century country boats will continue to provide the single most important transportation form in Bangladesh as far as the inter-district movement of commodities is concerned. It will also continue to provide employment for tens of millions of people. Fresh initiatives must ensure that the technical skills of the traditional boat-makers - carpenters, sail-makers, blacksmiths - are built up and these craftsmen become capable of upgrading their technical abilities.

Several technical improvements are required to increase the efficiency of boat operations. These include improvements to the oars and sails, re-designing of the hull form, improving sealing material etc. in manually operated crafts. Of particular importance is the introduction of an efficient

powerful sailing rig. These improvements can be applied to existing boats and can significantly improve sailing speed. There is also scope for auxiliary mechanization involving the fitting of sailing boats with an engine. Total mechanization is inefficient given the existing loads and rates of return. Competitiveness of existing country boats can be increased by making them more specialized and linking them to the trade of specific commodities.

Technical solutions should be sought to deal with the problem of damages caused to agricultural produce through rainwater, riverwater and heat. This will require that attempts have to be made to economize on the use of wood in boat construction and to introduce new materials and production technologies. Better quality nails, protective coatings and wood preservation chemicals are particularly required. All these technical improvements are beyond the means of existing boat owners due to the very meagre rates of return and the intense competition both on the river and with road and rail which keep financial margins so low. It is, therefore, essential that the government and multi-lateral agencies produce resource for increasing the technical efficiency of the boat building industry in Bangladesh. Commitments of relatively small amounts of financial and technical assistance within the context of a sector-specific strategy could lead to very substantial development gains in the long run.

4. POLICIES, PLANS AND INSTITUTIONS FOR INDUSTRIAL DEVELOPMENT

4.1 Policy objectives

Industrial sector policy objectives have been outlined in a series of national development plans. The first Bangladesh government (1972-1975) had laid strong emphasis on the role of public enterprises and a large-scale nationalization programme had been put into effect during 1972. Private investment was restricted to a small number of manufacturing branches and a ceiling on private investment levels was imposed. This ceiling was raised from Tk250,000 to Tk30 million in mid-1974 and to Tk100 million at the end of 1975. In the 1977 Industrial Policy Statement the number of industrial sub-sectors reserved for the public sector was reduced from 18 to 8. A range of fiscal incentives was announced to stimulate the growth of private investment. The New Industrial Policy (NIP) statement of 1982 marked an important turning point in the development of Bangladesh's industrial strategy.

NIP 1982 decisively shifted the emphasis from public sector-led industrial growth to privatization. Atomic energy, air transport, electricity, telecommunications and mechanized forest extraction were reserved for the public sector. Joint ventures were to be established in 13 industrial categories and a large number of nationalized jute and textile mills were returned to their former Bangladeshi owners.

The main concern of NIP is to foster resource-based industrialization, to enhance export earning capacity and to create new opportunities for industrial employment. In keeping with the emphasis placed on privatization the government also announced its intention to reduce direct intervention through the provision of investments and subsidies and the regulation of input and output price structures. Public sector management is to be accorded greater autonomy and the commercialization of operations is strongly recommended.

The objectives of NIP are reflected in the industrial strategy outlined in the Third Plan (1985-1990)[1/] and the Revised Industrial Policy (RIP) of 1986. As a result the number of "free sectors" now numbers 125 out of 144. Investment within these sectors does not need to be sanctioned by the government. Investment sanctioning procedures have been simplified. RIP seeks to extend the policy liberalization process by encouraging firms to meet their foreign exchange needs through the secondary market known as Wage Earners Schemes (WES). Policy liberalization has also been pursued by revolving responsibility for investment sanctioning from central to district level administrators. RIP also extended the privatization programme from the previous focus on returning nationalized units to their former owners to the development of joint ventures involving the sale of 49 per cent of the stock of selected public enterprises to private entrepreneurs.

All public manufacturing enterprises since 1987 have been subject to commercialization and a comprehensive policy reform package with the objective of developing an integrated planning, budgetary and performance evaluation system is being developed through a UNDP-financed project within the context of RIP. RIP has also significantly reduced the price controls exercised by the government and has attempted to increase the ability of public enterprise management to influence output price structure. Finally, RIP has also been

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1/ Government of Bangladesh, Third Five-Year Plan, 1985-1990, pp. 230-238.

concerned to extend the range of import-liberalization measures - through principally an increase in the share of imports financed through the secondary foreign exchange market - and to stimulate the growth of non-traditional exports.[1/]

It may reasonably be claimed that Bangladesh now has the most open industrial system within the SAARC region. Dismantling of control and a generalized reduction of policy intervention is expected to permit the inherent dynamism of private enterprise to generate growth, reduce urban unemployment, increase foreign exchange earnings and inflows, and correct distributional anomalies. The new policy packages have been developed with the close collaboration of international financial agencies. The Trade and Industry Policy Programme (TIP) partly financed by the World Bank and located in the four key economic ministries (including the Ministry of Industry) has played a crucially important part in the development and articulation of the various liberalization schemes. The industrial reform package is an integral component of the macroeconomic strategy which has sought to meet the policy targets specified in a series of IMF stand-by agreements and Structural Adjustment Loans since 1980.

The objective of policy liberalization is the alleviation of the severe resource shortages and the acceleration of the pace of economic development. Reliance upon market force is usually effective when the physical and institutional infrastructure necessary for the existence of efficient commodity and factor markets already exists. This of course cannot be presumed for Bangladesh which is increasingly wracked by natural disasters and in which market structures are imperfectly linked and are often highly fragmented. In such a socio-economic environment government cannot confine its activities merely to the provision of promotional support. In the field of industrial policy the government has a crucial role to play in supplementing and strengthening market structures - it cannot confine itself to a mere dismantling of controls.

An effective manipulation of a wide range of industrial policy instruments is required to direct the process of industrial development, monitor private sector complaints with policy direction and strengthen the bargaining position of the government in negotiations concerned with the procurement and utilization of foreign concessional assistance. The ultimate success of the policy reform packages adopted in 1982 and 1986 can only be evaluated in terms of their contribution to industrial growth on the one hand and to the reduction of the dependence of the industrial sector (and indeed of the economy as a whole) on foreign concessional sources of investment finance on the other.

4.2 Instruments of industrial policy

a) Implications of macroeconomic policy environment

Bangladesh has been pursuing a conservative macroeconomic strategy since fiscal year 1982/83. Both investment and consumption levels have been reduced to achieve economic stabilization. This has meant that during the 1982-1988 period productive sectors - agriculture and manufacturing - have grown at a rate marginally below the rate of growth of population.

1/ Specific policy changes incorporated under NIP and RIP are discussed in Section 4.2.

An important cause of the fall in investment has been the decline in public development expenditure during 1986 and 1987. Import levels also remained depressed due to declining private and public investment, weak domestic demand and effective import-substitution in fertilizers and energy. Exports, particularly non-traditional exports, grew rapidly during this period.

The government has remained concerned to limit monetary expansion but the domestic inflation rate continues to exceed 10 per cent, which is significantly higher than the current rate of inflation in both India and Pakistan. The cost of credit has been increased significantly over this period.

The government is contemplating increasing the flexibility of monetary control mechanisms. In 1987 modifications were made to increase the flexibility of the credit ceilings systems. The National Commission on Money, Banking and Credit (NCMBC) recommended in that year the development of a less discriminatory system of monetary control and the use of a wide range of monetary instruments by the Bangladesh Central Bank such as more frequent changes in cash revenue and liquidity asset requirements and open market operations. The implementation of these recommendations will probably reduce the accessibility of medium- and small-scale enterprises to credit from both commercial and development financial institutions.

Investment growth within the private sector (which has during 1985-1988 fallen at a much faster rate than public manufacturing investment) has been very seriously constrained by the credit squeeze. There is an urgent need to provide institutional mechanisms for regulating the flow of adequate credit supplies to industrial enterprises seriously affected by the credit squeeze.

The major policy reform with respect to the foreign exchange regime has been the emergence of the secondary foreign exchange which in 1987 was used to finance well over 70 per cent of manufacturing imports. The growth of Wage Earners' Scheme (WES) has led to an accelerated depreciation of the Taka and therefore to a significant increase in the import costs of manufactures. Given the fall in the investment level domestic substitution of imported inputs is extremely difficult and an import consequence of the routing of the majority of import transactions through the WES and of the unification of the official and the free exchange rates has been an increase in the dependence of Bangladesh manufacturing expertise on concessional commodity and project aid. It is hoped that rationalization initiatives could increase the economic efficiency of manufacturing enterprise and make the pace of industrial expansion self-sustaining.

b) Rationalization of public enterprise

Both NIP 1982 and RIP 1986 have placed emphasis on the need to strengthen the commercial operation of public enterprises. Along with the divestment which is entailed by the privatization initiative the government has also developed a programme for the financial restructuring and the physical rehabilitation of public manufacturing enterprises. This has been of particular importance in the case of those privatized firms which could not be profitably managed by the private sector and had to be taken back by the government to prevent closure.

The government has also sought to introduce a system of performance monitoring. Commercialization of public manufacturing enterprises has however proceeded slowly. In 1987, 16 firms had been earmarked for partial divestment

(i.e. invclving the sale of 49 per cent of their shares to the private sector). By end of 1988 however the divestment process had been completed in the case of only 3 of these firms. Divestiture has so far remained confined to only those enterprises which had a successful track record. The low level of transactions on Dhaka Stock Exchange has been a major constraint on the expansion of the government's divestiture programme.

Within the jute and textile sectors the government has sought to restructure the equity base of the public manufacturing enterprise. Public enterprises throughout the manufacturing sector has been reorganized into six corporations. By early 1988, Tk4.5 billion had been converted from debt to equity, Tk480 million from debt to grants and an additional Tk3.86 billion had been provided in the form of equity capital.

The proportion of the public sector subject to a strict regulation of output prices has been significantly reduced since 1982. Upward price revisions have been sanctioned in a wide variety of cases and management have been given greater financial aid marketing autonomy. At present only fertilizer, sugar, paper and newsprint are subject to strict price controls. The extension of management authority for revising price structures provided by the Public Enterprise (Management and Co-ordination) Ordinance of 1986 has been accompanied by the establishment of managerial accountability procedures.

Although most public manufacturing enterprises are now free to raise output prices, the government has retained the right to specify minimum price (in the case of jute for example) and to influence procurement strategies. Pricing anomalies still remain in such areas as fertilizers and sugar production where controls are still retained. Allowing an increase in fertilizer price can have a serious impact on agricultural production but postponing such an increase jeopardizes the financial viability of the state fertilizer corporation. Moreover in present circumstances with the commitments to recropping and rehabilitation programmes on the one hand and the constraint on the expansion of public expenditure on the other, a sizeable increase in government subvention to public enterprises do not appear feasible.

The commercialization and privatization initiatives launched by the government is highly complex recognizing the indispensability of public enterprise in key sectors of the economy - fertilizers, petroleum refineries and steel.

c) Trade policies

The cornerstone of the trade reform package has been the establishment of WES and the gradual alignment of the official and free exchange rate. By early 1988 all exports and all non-aid financial imports were financed through WES. The differential between the official and the free rate has virtually disappeared. It was about 3 per cent at end-1988. In nominal terms the Taka has been devalued by over 30 per cent during 1983-1988. In June 1988 the real effective exchange rate was 25 per cent lower than in 1980.

The decline in the value of Taka has been accompanied by the relaxation of quantitative restrictions on imports and the rationalization and generalized lowering of tariff barriers. In 1986, the system of import allocation was restructured - a "negative" list specifying prohibited/ restricted imports was substituted for a "positive" list which specified

permissible import. The total number of commodity classifications at a four digit level on the negative list has been reduced from 388 in 1986 to 355 in 1988 according to World Bank estimates.[1/]

The number of tariff rates was reduced from 24 to 11 in 1986. The maximum minimum tariff rate[2/] was lowered from over 200 per cent to 125 per cent respectively for most final goods imports in textiles, steel, engineering, chemicals and electronics branches in 1988. Tariffs on raw materials and intermediates were also lowered and sales tax rates were reduced.

Modification of tariff structures has taken place within the context of a three-year reform programme aimed at reducing the presumed anti-export bias of the EPR structure and at providing a competition incentive for stimulating the local import-substitution industry. The stimulative impact of trade policy changes on the level of exports and on competition levels within manufacturing industry is however not yet apparent.[3/] This may however be due to the successive natural disasters experienced in 1987 and 1988.

The government has taken a series of measures to stimulate exports. These include:

- The expansion of the export performance benefit scheme under which all exporters are now permitted to sell their foreign exchange earnings in WES. Originally the scheme was limited to non-traditional exports only but by 1988 practically all exports were covered by it.

- Exports have been given access to imported inputs through bonded in-house facilities. Special permission can also be granted enabling exporters to import restricted commodities.

- Financing is available for purchases of domestic inputs by exporters of non-traditional exports at 9 per cent (reduced from 11.5 per cent earlier); at 7 per cent to selected non-traditional exports (such as engineering and electrical goods); to those who exceeded previous year's performance by more than agreed targets; and working capital at 9 per cent for industries set up in the Export Processing Zone (EPZ) as 100 per cent local investments.

- A Duty Exemption and Drawback Cell has been established, which over time is to develop and implement more efficient systems for duty free imports for exporters.

- The orders determining the role and functions of the Chittagong Export Processing Zone Authority were amended to give the Zone Authority greater autonomy to facilitate investments in the Zone.

1/ World Bank, Bangladesh: Adjustment in the Eighties and Short-term Prospects, 1988, p. 59. This represent about 30 per cent of the total import classification.

2/ Defined to include development surcharge, customs duty and sales tax.

3/ The Chr. Michelsen Institute strongly disputes the World Bank view that the policy liberalization measures since 1982 have had a positive impact on industrial growth, op.cit., pp. 316-319.

- The internal quota allocation system for garment exports has been improved by increasing quota allocations to better performers and by speeding up the process of quota allocations during 1987 and 1988.

- Establishment of export processing zones near the Dhaka Airport and the Chalna Seaport is under consideration.

- Increased trading financing facilities have been provided by two private sector financial institutions - the Islamic Bank of Bangladesh Ltd. (IBBL), and al Baraka Bank a joint Bangladesh-Saudi venture. Both banks specialize in the provision of trade finance on a profit sharing basis (Modaraba) and IBBL has been heavily involved in the financing of the rapidly growing garments export industry.

d) Foreign investment

An explicit aim of both NIP and RIP is to accelerate the flow of direct private foreign investment into Bangladesh. A series of incentives and facilities have been provided. But except for a small number of joint ventures which have been in the country for quite some time, investor interest remains low. An important cause of this has been the impact of the nationalization drive of the early 1970s. A major revival of foreign investment flows requires the establishment of a regional investment corporation framework under the SAARC auspices. Foreign investors are likely to respond seriously if an effective regional investment co-operation programme can be developed. The growth of the textiles and garments industry can be significantly accelerated by regional trade and investment co-operation which can ensure adequate supplies of raw cotton at reasonable prices.

e) Technology policy

An inadequate technology assessment mechanism exists in the country for manufacturing. The public sector plays the dominant role in technological assessment and decision making. However, factors external to the formal governmental decision-making mechanisms play a significant role in the decision-making process since Bangladesh is heavily dependent on foreign assistance for development work. As a result, the whole system cannot be sub-divided into clearly definable sub-systems. Technological decision-making in Bangladesh involves many diverse agencies and institutions like government departments or the ministries concerned, the Planning Commission, External Resources Division of the Finance Ministry, donor agencies, local agents of MNCs (Multi National Corporations), foreign experts stationed here, local investment banks and public sector corporations.

Different agents and ministries produce a wide variety of documents which lack a commonality of approach having been prepared without uniform guidelines to attain the common objective of technological self-reliance.

Technology import in the maufacturing sector does not take place under any overall policy framework. Since all the development projects are now foreign aided projects, technology import is guided by the aid-donors' preference. The actual process of import of particular technology, whether it is in the form of software or hardware, varies. The funding agencies offering a development project have their own procedures, formalities and mechanisms which may or may not find a matching equivalent in the recipient. Smooth implementation of a development programme is often impeded by the absence of equivalent procedures among the two parties.

4.3 Institutional framework

There are three central ministries directly involved in the implementation and co-ordination of industrial policy - the Ministry of Industry, the Ministry of Jute and the Ministry of Textiles. The Ministries of Finance, Planning, Commerce, Fisheries and Livestock, Labour and Manpower and the Central Bank also play an important role in the policy process. The role of Bangladesh Bank has recently been considerably strengthened.

In 1988 the National Council on Industrial Development (NCID), an advisory body, was created to co-ordinate investment sanctioning policy vis-à-vis the private sector. The Board is empowered to give package approval to industrial projects.

With the setting up of the Board of Investment, 10 different department committees will be abolished. They are the Directorate of Industries, Capital Investment Board (CIB), Sub-committee of the CIB, Bangladesh Licensing Board, high powered Industrial Facilities Board, Hard Term Loan Committee, Standing Committee on Appointment of Foreign Consultants, Consultative Group of the NCID, Executive Committee of the NCID and the Standing Committee of the NCID.

Board of Governors of the proposed Board will give approval to industrial projects in the private sector with capital investment of over Taka 30 crore if the equity participation is entirely local. It will give approval to projects with capital investment of over Taka 20 crore with foreign equity participation. The Executive Council of the Board will approve other projects.

Those joint venture projects having foreign equity not more than 49 per cent, total equity not more than Taka 100 million and not included in the list of discouraged industries need not take prior approval for setting up joint venture industries. They will register with the Board of Investment.

The projects which will be approved by commercial banks, BSRS, BSB and other loan giving organizations will be entitled to approve joint venture projects having foreign equity not more than 49 per cent. Bangladesh Licensing Board will be dissolved and its functions will be vested on the Board of Investment. The Executive Council of the Board of Investment will determine conditions for imports of spare parts and raw materials of an industry at the time of its approval and if necessary these will be amended later.

The functions of the existing royalty cell will be vested in the proposed Board of Investment and the Executive Council of the Board will give necessary decisions regarding royalty. The proposed Board of Investment will be able to take decisions regarding utilization of suppliers credits or commercial loans for investment in industry. The Ministry of Finance will frame necessary rules in this regard. Besides, the Board of Investment will exercise the authority for floating company regarding industries and controlling of capital under the respective laws in favour of controller of capital issue. It has also been decided that a Patent Design and Trade Mark Directorate be created within the Ministry of Industry.

Bangladesh also possesses two industrial development financial organizations. The Bangladesh Shelpa Bank (BSB) and the Bangladesh Shelpa Rin Sangastha (BSRS). They are empowered to approve and sanction investment and make loans in most industrial sectors. Recent policy changes stipulate that the BSB and the BSRS while providing loans for the projects financed by them must ensure loans for working capital from commercial banks. Similarly, the industrial projects financed by the nationalized commercial banks must have the provision of working capital at the time of their approval and the same procedure and principle as that of the BSB and the BSRS will be followed for these projects. The bank will inform the decision in respect of the application for working capital within two months and in the case of renewal, it must be renewed before the expiry of the time limit. All the banks will determine the percentage of interest as prescribed in the industrial policy and in no way these can be changed.

The amount of working capital will be determined as per the sector-wise formula or form of Bangladesh Bank. This sector-wise formula will determine the exact amount of working capital. The nationalized commercial banks will provide working capital to projects which are on commercial production without collateral but if necessary they can demand a margin from the entrepreneurs. The margin can be determined on the basis of the existing relations between the banks and the investors which will not be more than 20 per cent in the case of medium- and large-scale industries.

The approval authority of working capital will have to be decentralized at different levels of banks. The sanctioning authority should be enhanced from the existing amount of Taka five lakh to Taka fifty lakh up to the level of Managing Directors.

The authority for necessary inspection and approval before supplying high tension power to industries will be given to the Power Development Board instead of the Power Advisor and Chief Power Inspection Department. The Board of Investment will give approval for power, gas and water connections as a package at the time of approval of industrial projects.

Policy reforms leading to institutional changes with respect to public sector management and financed are explicitly modelled on the structures operated by the East Pakistan Industrial Development Corporation (EPIDC) during the 1960s when an average annual industrial growth rate of over 10 per cent was achieved. The EPIDC invested in potentially profitable projects and divested then to private entrepreneurs after a period of successful operation. It created strong institutional links between private and public sector management. The decision to remould the financial and management institutional structures at the micro level in accordance with the successful experience of the EPIDC is undoubtedly an important step in the right direction. The Pakistan Industrial Development Corporation (PIDC)[1/] continues to operate on broadly similar lines and can provide technical and managerial assistance through a SAARC sponsored programme of investment and management co-operation.

1/ PIDC during the 1960s included EPIDC and WPIDC (West Pakistan Industrial Development Corporation).

Other institutions concerned with industrial policy implementation are listed below:

A. Sector parastatals:

Bangladesh Chemical Industries
Bangladesh Jute Mills
Bangladesh Oil and Gas Corporation
Bangladesh Steel and Engineering Corporation
Bangladesh Food Corporation
Bangladesh Textile Mills
Bangladesh Forest Industries Corporation

B. Institutions concerned with such specific responsibilities as the determination of standards and quality of industrial products:

Bangladesh Standards and Testing Institute
Industrial and Technical Assistance Centre (established to increase technical know-how and provide training and consultancy services)
Jute Goods Inspection - sets up standards for all jute products, carries out pre-shipment inspections and issues quality certificates

C. Industrial research institutions:

Council of Scientific and Industrial Research: under the Ministry of Scientific and Technical Research, promotes and guides research bearing on problems in establishing and developing industries; provides patents and promotes utilization of processes developed in the institutes and laboratories.

Jute Research Institute: engages in agricultural research to increase and promote productivity and in technological research to develop new uses of jute in manufacturing.

Bangladesh Institute for Development Studies

A National Chamber of Commerce and Industry also functions in Dhaka

Institutional reform has been an important concern of the present administration. In order to increase the effectiveness of the policy initiatives outlined within the context of NIP and RIP institutional restructuring is of considerable significance. Appropriate institutional change is required to allow Bangladesh to effectively meet the changes and exploit the opportunities for industrial development during the 1990s.

5. ISSUES AND OPTIONS FOR THE 1990s

5.1 Industry's role in increasing resilience to natural disasters

For the second consecutive year Bangladesh faced a major flood disaster causing damages worth several billion dollars in 1988. Moreover it is feared by meteorological experts that Bangladesh is a principal victim of a long-term change in global climatic conditions. Intermittent flooding in the years ahead is likely due to the rapid deforestation of large areas of Nepal and North East India. With less vegetation to absorb the rains the Bangladesh rivers become highly silted, increasing the risk of flooding. Moreover the country also suffers from drought which usually affects the winter crops. The construction of the Farrakka Barrage in 1971 has led to both an increase in the level of silt in the major Bangladesh rivers and to a serious water shortage in Western Bangladesh during the winter months.

Bangladesh's most urgent need therefore is to create an infrastructure which can eliminate its vulnerability to flood disasters on a permanent basis. Without this continued growth of the industrial sector is inherently unsustainable because frequent disasters are likely to cause considerable damage to both industrial establishments and to the transport and communication infrastructure. What is more important such disasters will inevitably lead to a switching of investment to sources from developmental to recroping and rehabilitation projects leading to serious capital shortages for manufacturing enterprises. Natural disasters will also seriously reduce domestic demand on a periodic basis and depress manufacturing sales and profits.

Several options for increasing the resilience of the Bangladesh economy are under serious consideration. There is a need to construct dams on the Brahmaputra river, storage reservoirs on the Himalayan tributaries (including those in Nepal and Assam) and a network of canals to transfer water from the Brahmaputra to the Ganges in the (dry) winter season. There is also a need to strengthen the river embankments and this would require constant dredging.

This requires both regional co-operation within the context of the SAARC and the development of a major long-term relief operation to provide resources for permanently eliminating Bangladesh's disaster vulnerability. The capital costs of such a project are likely to be high and beyond Bangladesh's capacity but a willingness to develop a co-ordinated regional flood control policy through SAARC can increase the flow of resources committed by both OECD and OAPEC sources for such projects. Periodic international relief operations can thus be made gradually redundant as a consequence of this comprehensive programme for taming Bangladesh's rivers and increasing the country's resilience to natural disasters.

Such an international programme aimed at increasing Bangladesh's resilience to natural disasters could have a strong industry commitment. Many of the inputs to building dams, barrages and associated infrastructural facilities can be locally produced. The construction of dykes and embankments is a labour-intensive activity and requires tools and equipment a significant portion of which can be locally manufactured. This has been the experience in North East Bangladesh where experimental dam construction operations have been under way since 1982.[1/]

1/ Financial Times, 17.8.1988.

Since dredging of rivers and the construction and maintenance of barrages, dams and embankments are continuing operations, it is necessary to survey the capacity of the local building material (particularly cement), iron and steel and engineering industrial branches to produce required inputs for such operations. Both the cement and iron and steel industry have experienced production downturns since 1981 and have low rates of capacity utilization. The country's sole steel mill also suffers from a growing obsolescence of capital equipment. Neither the electrical nor the non-electrical machinery industries possess an output composition which is presently suitable for use as inputs in dam construction and dredging operations. But the SAARC countries - India and Pakistan in particular - and China possess a rich reservoir of experience in this respect.

Bangladesh may seriously explore the possibility of drawing upon this experience to adopt its heavy industries to gradually become capable of producing inputs for flood control and water storage operations. This involves the development of a long-term strategy with participation of public enterprises and ministries within the SAARC region, multilateral financial institutions, international technical assistance agencies and transnational corporations. The aim of such a strategy must be to reduce Bangladesh's dependence on foreign sources of supply and on concessional assistance to sustain its capacity to resist and recover from natural disaster aid to develop an industrial base which can efficiently produce the equipment required to undertake flood control and water storage operations on a permanent basis.[1/] Without such an industrial base Bangladesh dependence on foreign finance and technology in combating natural disasters will not be reduced even if an effective flood control system is developed. It is unlikely that concessional finance can be provided on a permanent basis to maintain and operate a national-wide system of flood control. Bangladesh must in the long-run develop a national industrial capacity to undertake this task.

5.2 Reducing external dependence

Bangladesh's dependence on external finance has increased rapidly during the 1970s and 1980s. Today 86 per cent of the Annual Development Programme is aid financed - in the early 1980s, this ratio was about 60 per cent.[2/] It has been argued that aid "mutilates against any pressure to generate internal resources and to neutralize domestic savings".[3/]

During the 1980s, the development programme had been entirely self-financed and during the 1960s the external resource gap averaged only about 3 per cent whereas the domestic savings GDP ratio was in the region of 8 to 9 per cent. There must be two key elements in any programme for reducing external dependence within the industrial sector. Firstly, there exists an

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1/ The experience of the Netherlands is of particular importance in this context and there is a strong case for the development of a bilateral industrial co-operation programme in this field.

2/ "Given the tendency to conceal components of the current revenue expenditure in the development budget the chances are that aid has probably been financing the entire development budget", Sobhan, op.cit., p. 10.

3/ Ibid., p.8.

urgent need to increase enterprise efficiency. The fact that every major industrial project now depends crucially upon the availability of commodity- and project-related concessional finance ultimately reflects the industrial sector's inability to generate significant levels of investable surplus. The government's intention to commercialize the public sector enterprises is an important step in the right direction. The involvement of foreign equity capital and foreign management expertise in restructuring public and private sector enterprises should also be carefully studied. Secondly, Bangladesh's excessive external dependence reflects its technological weakness and the deficiencies inherent in the technology acquisition and utilization systems.[1/] The crux of the matter is the under-developed state of Bangladesh's capital goods industry[2/] which even in 1985 accounted for less than 4.9 per cent of MVA. Metal products and non-electrical machinery production have experienced wide levels of output fluctuations. Public sector investments in capital sector projects have been reduced in recent years and less than 10 per cent of manufacturing investment under the Third Plan has been allocated to the capital goods branches. This has meant that Bangladesh has not been able to effectively utilize the engineering and technological skills of its skilled and technically trained labour force and her dependence on imported physical capital and technical know-how has increased.

Well equipped factories such as the Bangladesh Machine Tool Factory north of Dhaka and General Electric Manufacturing plant at Chittagong (both government owned) operate at low capacities due to insufficient product and inability to produce the equipment that is required. Foreign expertise to obtain product re-design and for the improvement of management and financial accounting structures can play a useful role in overcoming problems faced by these firms.

There is an urgent need to develop a support system for expanding the product range and technical competence of small workshops producing spare parts and medium sized units. Most metal producers in Bangladesh operate very small units and the government's emphasis on the leading role of the private sector in the industrialization process may go some way towards increasing their access to technical and financial resources. The development of the local capital goods sector has also been partly hampered by the conditions imposed by donors on the utilization of project aid. International financial agencies committed to supporting the government's privatization initiatives should also be concerned to increase the domestic input content of projects funded by concessional flows. An integrated policy initiative to support the domestic manufacture of relatively simple mechanical inputs used in such projects can go a long way towards accelerating the pace of development of the capital goods industries.

1/ These weaknesses have been reviewed in Section 4.2.

2/ The capital goods sector is here defined as metal products, electrical and non-electrical machinery and transport equipment.

5.3 Privati ion

Bangladesh has one of the most comprehensive privatization programmes in the world. In the period 1982-1986 the share of the government in the equity stock of large-scale industrial enterprises has been reduced from 85 to less than 40 per cent. The public sector firms in which the government retains majority control have been extensively restricted with a view to a far reaching commercialization through an increase in management autonomy and financial accountability.

The process of privatization began in 1976 and was originally conceived of as having two parts (a) divestment of the units of the major sector level public corporations; and (b) sale of small factories owned by the Ministry of Industry with assets less than Tk150,000 ($6500 at the 1976 exchange rate). It was expected that the transfer of loss making enterprises from the public to the private sector would lead to a relatively quick improvement in performance and profitability.

A major problem in assessing the extent to which this expectation lies in the absence of any systematically collected data on the performance of the privatized units or indeed on the private corporate sector. This absence of data is most vividly illustrated in the shrinking average of the data set used by the BBS to estimate production indices over the period 1977/78 to 1986/87 - units have simply disappeared from this data set and no attempt has been made to continue to obtain in mation from these units.[1/]

A study conducted by the Bangladesh Institute of Development Studies (BIDS) has attempted to evaluate the performance of the units of public manufacturing corporations that were divested during 1976-1983.[2/] The BIDS samples contain 46 of the 217 units that had been divested during the period 1976-1983.[3/] While 32 per cent of the units divested during 1976-1982 earned profits in the last year before divestment, this ratio rose to 78 per cent in the post 1982 period - the major divestment/de-nationalization programme thus overwhelmingly involved the sale of already profitable public enterprises[4/] to the private sector.

About a half of the BIDS sample of divested units increased production (in volume terms) in the post-divestment period and there was a marked tendency to concentrate on a smaller (presumably profitable) number of production lines. For 24 firms for which data was available, it was found that

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1/ This absence of data on private large-scale manufacturing enterprise contrasts sharply the regular economic and financial monitoring of the public manufacturing enterprises.

2/ Bangladesh Institute of Development Studies, Divestment and Denationalization: Profile and Performance, Dhaka, July 1984.

3/ The BIDS sample is restricted to the units that had been totally divested (i.e. sold off) by the public sector corporations. It therefore excludes both joint ventures (involving sales of a part of government asset holdings) and units formerly owned by the Ministry of Industry.

4/ The 42 divested units for which data is available earned total profits of Tk0.6 million and paid taxes worth Tk1.95 million in the year before divestment. BIDS, op.cit., p. 15.

only eight had succeeded in raising profits, turning losses into profits or cutting down losses. Five profitable enterprises in the pre-divestment period became loss makers, seven increased their losses and three units were closed down.[1/] The profits to sales ratio declined in 15 of the 24 firms in the post-divestment period.[2/] Seventeen of the 31 units for which the relevant data was available reduced employment in the post divestment period. There is also a clear tendency for privatized enterprises to substitute casual labour for regular, full time, unionized workers. If casual labourers are excluded total employment in the privatized units is seen to drop by as much as 25 per cent in the post divestment period.[3/] The serious financial problems faced by the divested enterprises is also reflected in the fact that payment overdues to the government for the purchase of equity stock of the divested units continued to increase over the 1976-1982 period until they were substantially written off within the context of the framework of the new industrial policy.

The empirical base of the BIDS study is extremely weak. Data has been collected for a very small number of privatized enterprises and no attempt has been made to ascertain the representativeness of the sample. Moreover the figures cover only one year of the operation of the major privatization initiative - the New Industrial Policy. It is therefore not possible to draw any firm conclusion about the relative performance of privatized and non-privatized units. It is clear however that many privatized units have faced serious operational and financial problems and this is reflected in their inability to discharge their financial obligations incurred at the time of the purchase of the divested establishment.

If the privatization policy is to be successful it is clearly not sufficient to off-load government industrial assets in the belief that there already exists investable surplus in the hands of the private sector which will be utilized to improve enterprise efficiency. The relationship between the public and private sectors at the initial stages of industrialization is a complex one. It has been much more usual for the public sector to play both a directional and promotional role and to consciously foster and regulate entrepreneurial initiatives within the private sector. The development of a close working relationship between public institutions and enterprises on the one hand and private manufacturing firms on the other remains an important pre-requisite for the success of the privatization initiative in Bangladesh.

5.4 Employment and basic needs

Bangladesh's desperately difficult socio-economic situation has imposed a disproportionately heavy burden on the most seriously disadvantaged sections of society - the rural landless labourer and the urban slum dwellers. The proportion of the rural population below the officially defined "poverty line"[4/] increased from 41.7 per cent in 1966/67 to 60.4 per cent in 1976/77.[5/] Average daily calorie intake *per capita* has deteriorated from

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1/ BIDS, *op.cit.*, Table 3-D.

2/ Ibid., Table 3-E.

3/ Ibid., Table 4-A and 4.B.

4/ Minimum calorie intake of 1,805 per day.

5/ World Bank, *Bangladesh: Development in a Rural Economy*, 1977, p. XIII.

2,300 calories in 1962-1966 to 2,100 calories during 1981-1983.[1/] There are no indications that the situation has improved in recent years - the government's conservative demand management policies and the calamitous natural disasters of 1987 and 1988 are likely to have had a severe impact on the poor particularly in the rural areas.

An important cause of the persistence of dire poverty is the slow growth of adequately remunerative employment opportunities. There are no reliable estimates of the level of unemployment or its growth in agriculture or manufacturing. However the 1983-1984 Labour Force Survey shows that a 30 per cent increase in the employed work force over the period 1973/74 to 1983/84 was marginally in excess of the rate of growth of total population - thus the net activity rate is unlikely to have declined and the level of unemployment unlikely to have risen significantly during this period. The Labour Force Survey also shows that agriculture did not absorb any of the increase in the working population. On the other hand manufacturing accounted for 15 per cent of the additional employed labour force, a share roughly equivalent to that of transportation and services but significantly below that of commerce and business which absorb 40 per cent of the net employment increase. Even within the rural areas commerce, industry and services have absorbed the growth in the labour force while agricultural employment growth has remained stagnant. There has been relatively little migration from the rural areas to the large cities.

Bangladesh is characterized by the existence of a high level of under-employment estimated at 30 per cent of the agricultural labour force in the early 1980s[2/] - but the marginal product of the typical under-employed agricultural worker is positive so that moving him out of agriculture is likely to have a real cost. The total labour force is expected to increase by about two-thirds over 1985-2000. Expanding adequately remunerative employment opportunities is likely to become a challenging task in the 1990s.

Employment in manufacturing has grown from 1.02 million in 1974 to 2.68 million in 1984/85 - its share in total employment has increased from 4.8 per cent to 9.3 per cent over this period.[3/] In 1984/85, about 47 per cent of manufacturing was employed in the textile industry, 28 per cent in food manufacturing and 10 per cent in the non-metallic mineral branch (particularly cement). The size distribution of manufacturing establishments is not reported indicating perhaps a downward bias in the sector level estimate and an under-representation of the smaller manufacturing establishments.

According to UNIDO estimates variations in employment elasticities within the large-scale manufacturing sector are relatively modest. The consumer goods branch, tobacco, paper and textiles, have somewhat higher employment elasticities than capital and intermediate goods. The Chr. Michelsen Institute study also found that the employment generating capacity of cottage and small-scale industry was not significantly different from the large-scale

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1/ Chr. Michelsen Institute, op.cit., p. 62.

2/ BBS, Statistical Yearbook, 1987, p. 103.

3/ Chr. Michelsen Institute, op.cit., Table C6, pp. 282-283.

establishments, particularly in the food and textile sectors. The Chr. Michelsen Institute study found that the relatively high capital intensity of the metal products branch (reflected in the low employment elasticity for this branch estimated by UNIDO) was due to the presence of just two highly capital-intensive plants (the Dhaka and Chittagong machine tool factories). Elimination of these two cases substantially reduces the capital intensity level of the metal products branches.

Increasing employment opportunities is a necessary means for poverty alleviation in Bangladesh. Accelerated employment growth will not occur simply by an encouragement of small and cottage industries paying usually lower than subsistence wages which have to be supplemented by work on the farm. There is a need for strengthening links between small- and large-scale enterprises so that an increasing proportion of intermediate and capital goods used by the major manufacturing establishments is locally produced in Bangladesh. The metal working branches remain of key importance and there is a strong need to reverse the decline in the level of investment within these branches and to strengthen their capacity to develop sub-contracting links with the large manufacturing enterprises. The expansion of employment opportunities can have little impact as a means for alleviating poverty in the absence of an adequate increase in remunerative employment opportunities and elimination of disguised employment. This can be achieved by the improvisation of production technology which is appropriate in terms of Bangladesh's resource endowment.

5.5 The role for multilateral technical assistance

Multilateral technical assistance has an important role to play in supporting industrial development in Bangladesh. The following are the crucial areas to which technical assistance could be directed.

The development of an international emergency plan is of immediate need to identify the role of domestic industry in a national programme designed to reduce the country's vulnerability to natural disasters. Without increasing the country's resilience to natural hazards industrial development will remain perpetually threatened by infrastructural breakdown and the sudden diversion of foreign exchange resources for meeting recroping and rehabilitation expenditures. It is unrealistic to expect that the industrial inputs required to sustain such a programme will be provided on a concessional basis perpetually. Bangladesh must develop a capacity to produce these inputs efficiently in the long run and international technical assistance may be provided to develop this capacity.

The manufacturing sector remains almost totally dependent on commodity or project aid. To reduce this dependence technical assistance can be provided to improve enterprise efficiency on the one hand and to develop a capacity to acquire appropriate technology and adapt and improvise it to serve Bangladesh's needs on the other hand. Assistance may also be given to support the development of a local capital goods industry capable in the first instance of producing the simpler machinery and intermediaries required for industrial production.

The government has sought to increase enterprise efficiency and generate a larger volume of investable surplus within the manufacturing sector through an extensive privatization programme. Assistance may be provided to monitor the performance of the privatized units on a continuing basis and to construct a relationship between public and private enterprises so that the government becomes an effective stimulator of the private sector.

Finally, technical assistance may also play an important role in restructuring small-scale and cottage industries and in developing an effective institutional support system. By raising employment and productivity levels in small-scale enterprises the restructuring process could be attuned towards the creation of a self-sustaining industrial base.

ANNEX A

STATISTICAL TABLES

Table A-1: Macroeconomic balances, 1980/81-1986/87 (selected years)
(percentage)

	1980/81	1981/82	1983/84	1985/86	1986/87
Gross domestic product (GDP)	100.0	100.0	100.0	100.0	100.0
Resource balance	-12.5	-13.9	-10.8	10.0	8.9
Resource availability	112.5	113.9	110.8	110.0	108.9
Consumption	96.6	98.9	98.5	98.2	96.5
Private	...	91.9	91.9	89.5	87.8
Public	...	7.0	6.6	8.7[a/]	8.7
Gross domestic investment (GDI)	15.9	15.0	12.3	11.8	12.4
Private	9.5	8.9	6.7	6.3	6.0
Public	6.5	6.1	5.6	5.5	6.4
Memo items					
Domestic savings/GDP	3.4	1.1	1.5	1.8	3.5
National savings/GNP	5.8	3.4	5.3	4.7	6.7
Foreign savings/[b/]GDP	10.0	11.5	6.8	7.0	5.5
Foreign savings/GDI[c/]	62.9	76.7	55.0	59.2	44.2

Source: Bangladesh Bureau of Statistics; World Bank, Bangladesh: Adjustment in the Eighties and Short-term Prospects, March 10, 1988, Report No. 7105-BD.

a/ Substantial part of the increase reflects wage increases to government employees which would add to private incomes and consumption.

b/ Equals current account balance.

c/ Ratio of foreign savings to domestic investment.

Table A-2: Growth of MVA, employment and productivity by sub-sector of manufacturing, 1975-1985

Description (ISIC)	Growth of value added at 1980 prices	Growth of employment	Growth of value added per employee
	1975-1985	1975-1985	1975-1985
Food products(311)	-1.29	0.72	-1.99
Beverages(313)	4.52	3.34	1.14
Tobacco(314)	2.63	2.59	0.04
Textiles(321)	1.24	3.60	-2.28
Wearing apparel,except footwear(322)	...	17.92	...
Leather products(323)	...	-0.62	...
Footwear,except rubber or plastic(324)	...	3.81	...
Wood products,except furniture(331)	-0.67	19.40	-16.81
Furniture,except metal(332)	...	1.92	...
Paper and products(341)	3.43	0.76	2.65
Printing and publishing(342)	...	6.99	...
Industrial chemicals(351)	11.38	1.15	10.11
Other chemicals(352)	9.33	3.55	5.59
Petroleum refineries(353)	-1.39	2.71	-3.99
Misc. petroleum and coal products(354)	...	3.38	...
Rubber products(355)	-1.12	-1.32	0.20
Plastic products(356)	...	11.37	...
Pottery,china,earthenware(361)	...	7.22	...
Glass and products(362)	6.42	-4.86	11.85
Other non-metallic mineral prod.(369)	0.99	6.38	-5.07
Iron and steel(371)	-2.02	0.43	-2.44
Non-ferrous metals(372)	...	...	...
Fabricated metal products(381)	...	4.84	...
Machinery,except electrical(382)	27.50	10.53	15.35
Machinery electric(383)	11.04	11.27	-0.21
Transport equipment(384)	-3.24	-0.60	-2.66
Professional & scientific equipm.(385)	...	2.02	...
Other manufactured products(390)	-5.53	-0.06	-5.48

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

Table A-3: Indicators of manufacturing performance, 1975 and 1983
(current prices)
(currency = Taka)

Description (ISIC)	Share of value added in gross output (percentage)		Share of gross profit in value added (percentage)	
	1975	1983	1975	1983
Food products (311)	36.9	32.0	80.6	79.0
Beverages (313)	79.7	71.2	92.3	92.2
Tobacco (314)	78.7	68.3	94.2	94.8
Textiles (321)	38.3	42.0	40.6	41.2
Wearing apparel, except footwear (322)	13.8	29.9	41.2	57.6
Leather products (323)	19.0	18.1	75.8	89.5
Footwear, except rubber or plastic (324)	42.9	37.3	63.8	81.5
Wood products, except furniture (331)	21.4	45.8	33.1	67.4
Furniture, except metal (332)	36.3	41.6	43.7	56.7
Paper and products (341)	25.3	25.4	56.7	62.5
Printing and publishing (342)	43.4	38.8	56.0	50.6
Industrial chemicals (351)	58.0	46.5	88.0	81.7
Other chemicals (352)	47.7	46.1	72.1	77.7
Petroleum refineries (353)	1.5	0.6	36.3	21.3
Misc. petroleum and coal products (354)	...	26.9	...	98.9
Rubber products (355)	53.3	40.8	63.8	68.0
Plastic products (356)	39.6	27.8	56.6	58.6
Pottery, china, earthenware (361)	51.0	59.3	58.4	78.9
Glass and products (362)	40.1	48.2	56.4	78.6
Other non metallic mineral products (369)	55.4	33.6	83.3	85.6
Iron and steel (371)	31.8	26.5	83.2	80.0
Non-ferrous metals (372)	...	...	...	...
Fabricated metal products (381)	35.7	28.2	50.0	59.6
Machinery, except electrical (382)	42.5	43.1	48.9	72.1
Machinery electric (383)	53.9	39.6	80.2	77.3
Transport equipment (384)	25.8	35.1	41.7	72.6
Professional and scientific equipment (385)	16.1	20.8	83.4	83.5
Other manufactured products (390)	65.1	50.0	60.5	63.2

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

Note: TOTAL MANUFACTURING is the sum of the reported ISICs and does not necessarily correspond to ISIC 300 total.

Table A-4: Bank advances by main economic purposes, 1980 to 1985
(Tk million)

Economic purpose	1980	1981	1982	1983	1984	1985	1985[a/]
Agriculture, hunting, forestry and fishing	4767.1	6189.2	8494.6	12760.8	18844.0	27327.1	28977.2
Mining and quarrying	299.9	461.1	1528.3	4472.0	1220.0	248.2	278.2
Manufacturing	10264.2	14226.2	18522.9	15806.4	19519.0	18341.9	22987.1
Construction	366.0	578.9	741.9	1062.8	1327.0	2047.9	2333.8
Electricity, gas, water and sanitary services	120.5	164.2	368.4	291.0	344.0	727.0	694.9
Wholesale and retail trade, restaurants hotels	6620.7	7191.5	7445.5	9561.0	14948.0	14201.0	18431.9
Financing, insurance, real estate and services	649.0	862.6	1149.7	1232.7	2044.0	2893.0	3249.8
Transport, storage and communication	997.9	1423.3	1430.6	1475.1	2588.0	2178.3	2209.6
Community, social and personal services	1011.5	1504.9	2049.6	2325.6	3210.0	-	-
Employees and activities not adequately described	2547.8	650.1	644.5	1222.4	1553.0	-	-
TOTAL	25644.4	33252.0	42376.0	50209.8	65597.0	67964.4	79162.5

Source: BBS, Statistical yearbook, 1987, p. 415.

a/ Position as on June 30.

Table A-5: Bank credit by sector, 1980 to 1985
(Tk million)

Sectors	1980	1981	1982	1983	1984	1985	1985[a/]
Public sector	12100.4	14005.6	18544.9	18817.0	16737.0	19896.9	24809.1
Government	1613.2	1423.2	2570.3	2424.0	2179.0	4522.4	3684.1
Non-financial public enterprises	8946.3	11194.6	14895.3	14846.0	11768.0	15234.5	20808.5
(a) Nationalized sector corporations	6000.8	8505.1	12101.9	12154.0	9968.0	10833.5	2680.3
(b) Others n.e.c	2945.5	2689.5	2793.3	2692.0	1800.0	4401.0	8128.2
Autonomous and semi-autonomous bodies	934.6	937.7	431.3	386.0	465.0	56.4	197.5
Financial institutions	12.2	17.4	28.6	41.0	91.0	5.4	61.2
Others	568.2	409.7	592.7	1095.0	2050.0	-	-
Private sector	13544.1	19246.4	23831.1	31393.0	48860.0	69435.0	76679.6
Agriculture, forestry, hunting and fishing	3178.9	4444.0	6202.1	9712.0	13645.0	22917.4	23116.9
Mining and quarrying	1.9	5.5	426.9	60.0	53.0	-	-
Manufacturing	2791.7	3707.1	5001.6	7306.0	11688.0	17902.3	21862.2
Construction companies	173.4	282.5	261.5	340.0	565.0	907.6	450.9
Electricity, gas, water and sanitary services	7.2	12.5	47.6	67.0	139.0	-	-
Commerce	3592.0	4505.9	4324.0	5291.0	9335.5	15624.8	8796.8
Transport, storage and communication	504.2	1073.4	939.4	1056.0	1221.0	1871.2	1970.4
Nonprofit organizations	2.0	7.9	7.9	7.0	24.0	82.8	61.4
Personal	1420.4	2219.6	2934.7	3981.0	6062.0	8414.0	8191.5
Others n.e.c.	1872.4	2988.0	3685.4	3573.0	6121.0	1714.9	1229.4
GRAND TOTAL	25644.5	33252.0	42376.0	50212.0	65597.0	89331.9	101488.7

Source: BBS, Statistical yearbook 1987, p. 415

a/ Position as on June 30.

Table A-6: Average apparent consumption of selected manufactures, 1982-1984

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
			1982-1984	1982-1984	1982-1984	1982-1984	1975-1984
FOOD PRODUCTS							
Raw sugar (311801)		W	2.15	0.0	0.0	206000	10.03
Refined sugar (311804)		W	2.51	28.5	0.0	177000	11.26
Cocoa powder (311907)		W	...	...	...	...	...
Cocoa butter (311910)		W	...	...	...	...	...
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*)		W	1.90	98.4	0.0	3000	5.43
TEXTILES							
Wool yarn, pure and mixed (321103)		W	0.00	99.9	13.0	1	86.73
Cotton yarn, pure and mixed (321109)		W	0.52	10.9	0.1	44638	2.25
Cotton woven fabrics (321128)		S	764.52	0.1	0.2	73333333	-1.78
Woollen woven fabrics (321134)		S	0.20	100.6	0.6	0	21.74
Knitted fabrics (321301)		W	...	...	...	...	...
FOOTWEAR							
Footwear, excluding rubber footwear (324000)	a/	P	42.81	0.0	0.2	4000000	5.45
WOOD AND WOOD PRODUCTS							
Veneer sheets (331110)	a/	V	0.37	0.1	0.0	33999	1.89
Particle board (331122)	b/	V	0.06	0.3	0.0	5300	20.77
PAPER AND PAPER PRODUCTS							
Wood pulp, mechanical (341101)		W	0.20	27.9	0.0	14000	19.63
Pulp of fibres other than wood (341104)	b/	W	0.53	0.0	1.4	50509	11.67
Wood pulp, dissolving grades (341107)		W	0.02	100.0	0.0	0	12.67
Wood pulp, sulphate and soda (341110)	b/	W	0.23	23.6	0.0	16600	6.46
Wood pulp, sulphite (341113)		W	0.13	100.0	0.0	0	52.43
Wood pulp, semi-chemical (341116)		W	0.01	100.0	0.0	0	-2.29
Newsprint (341119)		W	0.28	0.1	17.5	31667	6.91
Other printing and writing paper (341122)	b/	W	0.32	6.3	0.2	28500	5.38
Kraft paper and kraft paperboard (341125)	a/	W	0.05	2.8	0.0	4464	3.47
Other paper and paperboard (341131)	a/	W	0.19	80.8	0.2	7000	8.31
INDUSTRIAL CHEMICALS							
Methanol (methyl alcohol) (351121)		W	0.00	100.0	0.0	0	10.41
Glycerine (glycerol) (351125)		W	...	...	...	...	...
Chlorine (351145)		W	0.04	0.0	0.0	4000	2.31
Sulphuric acid (351147)		W	0.03	1.6	0.0	3000	-4.17
Nitric acid (351149)		W	0.00	100.0	0.0	0	31.88
Zinc oxide (351154)		W	0.00	100.0	0.0	0	9.05
Titanium oxides (351155)		W	0.00	100.0	0.0	0	16.51
Lead oxides (351157)		W	0.01	100.0	0.0	0	23.29
Ammonia (351158)	a/	W	0.00	100.0	0.0	0	15.10
Caustic soda (351159)		W	0.22	71.2	0.0	8000	15.74
Soda ash (351166)		W	...	...	...	...	...
Hydrogen peroxide (351171)		W	0.00	100.0	0.0	0	77.24
Calcium carbide (351173)		W	0.01	100.0	0.0	0	17.81
Dyestuffs, synthetic (351174)		W	0.01	100.1	0.1	0	10.74
Vegetable tanning extracts (351175)		W	0.00	102.0	2.0	0	5.89
Nitrogenous fertilizers (351201)		M	3.57	17.7	6.9	305806	9.71
Phosphatic fertilizers (351204 + 351207)		M	1.63	80.5	0.9	31950	11.50
Potassic fertilizers (351210)		M	0.39	100.0	0.0	0	10.73
Insecticides, fungicides, etc. (351216)		W	...	...	...	...	...
Rubber, synthetic (351301)		W	0.00	101.2	1.2	0	21.03
Non-cellulosic staple and tow (351304)		W	0.11	52.0	0.0	5000	318.73
Regenerated cellulose (351331)		W	...	...	...	...	...

=======> continued

Table A-6 (Continued)

Product grouping and commodity (ISIC)	Unit	Average apparent consumption per 1000 inhabitants	Imports | Exports As percentage of apparent consumption		Average annual production	Growth rate of apparent consumption
		1982-1984	1982-1984	1982-1984	1982-1984	1975-1984
PETROLEUM REFINERIES						
Motor gasolene (353007A)	W	0.41	0.9	0.0	38667	-4.65
Kerosene (353013A)	W	3.60	25.4	0.0	271667	0.49
Distillate fuel oils (353019A)	W	6.24	68.5	0.0	186333	15.35
Residual fuel oils (353022A)	W	4.31	16.5	3.7	360333	3.10
Lubricating oils (353025A)	W	0.93	70.4	0.0	26333	10.27
Liquefied petroleum gas (353037A)	W	...	...	...	...	2.36
GLASS AND CEMENT						
Glass bottles and containers (3620108)	W	...	...	...	...	...
Cement (369204)	W	17.82	82.1	0.0	302000	13.79
IRON AND STEEL						
Pig iron (371007 + 371010)	W	0.58	100.0	0.0	0	11.29
Wire rods (371029)	W	...	...	...	...	...
Angles, shapes and sections (371035)	W	...	...	...	...	...
Plates(heavy), over 4.75 mm. (371040)		...	...	...	...	...
Plates(medium), 3 to 4.75 mm. (371043)		...	...	...	...	...
Plates and sheets, < 3 mm (371046 + 371049 + 371052)	W	0.02	100.8	0.8	0	-19.54
Tinplate (371055)	W	0.22	100.0	0.0	0	20.72
Railway track material (371067)	W	0.13	100.0	0.0	0	54.89
Wire, plain (371070)	W	...	...	...	...	...
Tubes, seamless (371076)	W	0.01	100.0	0.0	0	-15.85
Tubes, welded (371079)	W	...	...	...	...	...
Steel castings in the rough state (371085)	W	...	...	...	...	...
Steel forgings (371088)	W	...	...	...	...	...
NON-FERROUS METALS						
Copper, refined, unwrought (372004)	W	0.00	100.0	0.0	0	1.87
Copper bars, rods, angles, etc. (372010 + 372013)	b/ W	0.02	100.0	0.0	0	28.98
Copper plates, sheets, strip and foil (372016)	W	0.01	100.0	0.0	0	38.82
Copper tubes and pipes (372019)	W	0.00	100.0	0.0	0	14.20
Aluminium, unwrought (372022)	W	0.07	102.9	2.9	0	18.24
Aluminium bars, rods, angles, etc. (372025 + 372028)	W	0.03	100.0	0.0	0	60.82
Aluminium plates, sheets, strip etc. (372031)	W	0.01	100.1	0.1	0	22.14
Aluminium tubes and pipes (372034)	W	...	...	...	...	...
Lead, refined, unwrought (372037)	W	0.00	100.0	0.0	0	20.09
Zinc, unwrought (372043)	W	0.00	100.0	0.0	0	22.24
Zinc plates, sheets, strip and foil (372046)	W	0.00	100.0	0.0	0	41.10
Tin, unwrought (372049)	W	0.00	100.0	0.0	0	-3.84

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 1982 only.
b/ Data for 1984 not available.

W = Metric tons
S = Square Metres
P = Pairs
V = Cubic metres

Table A-7: Share of the small and cottage industries within the Bangladesh manufacturing sector, 1981

	Units (number)		Employment (in thousands)		Gross output (Tk million)		Value added (Tk million)	
		as per cent of total		as per cent of total		as per cent of total		as per cent of total
Small-scale	24,005	7.5	321.9	19.6	5,057	8.1	1,775	11.6
Cottage	291,063	91.1	854.8	52.1	9,556	15.4	3,192	20.1
Total	318,424		1,641.8		62,225		15,294	
Sub-total	315,068	98.6	176.7	71.7	14,613	23.5	4,967	31.7

Source: BBS, Census of manufacturing industry, 1981/82, Bangladesh's Cottage and Small-scale Industries Corporation, Survey of Cottage and Small-scale Industry, 1980. The survey excludes information on the handloom industry which consists of about 15,000 units with a total employment of about one million people.

Table A-8: Domestic production of fertilizer, 1976/77 - 1983/84
('000 tons)

Year	Urea NGFFa/		Urea UFFGb/		Urea ZFCLc/		Urea Total	Chittagong TSPd/	
1976/77	77.4	(67)	208.1	(56)			285.5	38.0	(25)
1977/78	61.4	(53)	151.0	(40)			212.5	41.3	(27)
1978/79	54.6	(47)	236.7	(63)	290.7	62.3	(41)		
1979/80	104.6	(91)	256.6	(69)			361.2	71.1	(47)
1980/81	99.2	(86)	245.5	(66)			344.7	71.2	(47)
1981/82	92.5	(80)	253.0	(68)	62	(12)	407.7	57.9	(38)
1982/83	86.1	(75)	223.3	(59)	118	(22)	426.4	66.5	(44)
1983/84e/	87.0	(75)	263.0	(70)	265	(50)	615.0	76.0	(50)

Source: Bangladesh Chemical Industries Corporation.

a/ Natural Gas Fertilizer Factory, Fenchuganj (NGFF). Production started 13 December 1961. Installed capacity is 115,500 tons per annum of urea.

b/ Urea Fertilizer Factory, Ghorasal (UFFG). Production started in 1972. Installed capacity is 374,000 tons per annum of urea.

c/ Zia Fertilizer Company Ltd. (ZFCL), Ashuganj. Production started 15 December 1981. Installed capacity is 528,000 tons per annum of urea.

d/ Triple Superphosphte (TSP) complex at Chittagong. Production started October 1974. Installed capacity is 152.000 tons per annum.

e/ Provisional figures.

Note: Figures in bracket ( ) show production as per cent of installed capacity.

Table A-9: Main inter-district movements of eight important commodities, estimated actual by mode of transport, 1972/73 - 1977/78
('000 tons per year)

Type of commodity[a/]	Road				Rail				Water				Total			
	1972/73		1977/78		1972/73		1977/78		1972/73		1977/78		1972/73		1977/78	
1. Foodgrain (public sector)	478	(15.7)	156	(11.4)	559	(18.3)	735	(53.5)	2016	(66.0)	482	(35.1)	3,053	(100)	1,373	(100)
2. Fertilizer	55	(18.5)	261	(31.7)	94	(31.6)	290	(35.2)	148	(49.8)	273	(33.1)	297	(100)	824	(33.1)
3. Cement	76	(23.0)	66	(11.1)	49	(14.8)	117	(19.7)	205	(62.1)	411	(69.2)	330	(100)	594	(100)
4. Jute & jute goods (internal)	265	(29.6)	481	(44.5)	245	(27.4)	353	(32.6)	384	(43.0)	248	(22.9)	894	(100)	1,082	(100)
5. Jute & jute goods (export)	6	(1.1)	113	(13.6)	87	(16.7)	51	(6.2)	429	(82.2)	665	(79.0)	522	(100)	829	(100)
6. Coal	8	(5.3)	81	(37.3)	13	(8.6)	83	(38.2)	130	(86.1)	53	(24.4)	151	(100)	217	(100)
7. Iron & steel	62	(50.0)	71	(30.2)	13	(10.5)	69	(29.4)	49	(39.5)	95	(40.4)	124	(100)	235	(100)
8. Stones & boulders	2	(0.5)	32	(7.3)	111	(27.7)	107	(24.3)	288	(71.8)	301	(68.4)	401	(100)	440	(100)
9. Petroleum products	123	(14.3)	5	(0.6)	131	(15.3)	31	(3.8)	604	(70.4)	788	(95.6)	858	(100)	824	(100)
TOTAL	1,075	(16.2)	1,266	(19.8)	1,303	(19.7)	1,836	(28.6)	4,253	(64.1)	3,316	(51.7)	6,630	(100)	6,418	(100)

Source: A.J. Dolman, et al., The Country Boats of Bangladesh, Chr. Michelsen Institute, 6 volumes, 1986.

a/ The percentagewise distribution of each commodity on the three modes of transport is given in brackets.

ANNEX B

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

UNIDO's Completed Technical Co-operation Projects

People's Republic of BANGLADESH
(1)

Backstopping Responsibility	Spec.Act./ All.Acc.Code	Project Number	Project Title
IO/IIS/INFR	31.1.02	TS/BGD/74/001	Assistance to the Bangladesh Standards Institution
IO/IIS/INFR	J12102	DP/BGD/84/066	Assistance to Bangladesh standards and testing institution and central testing laboratories - preparatory assistance
IO/IIS/INFR	31.4.01	RP/BGD/74/003	Promotion of small-scale industry
IO/IIS/INFR	31.4.01	RP/BGD/75/002	Promotion of small-scale industry
IO/IIS/INFR	31.3.D	DP/BGD/73/056	Assistance to small-scale industries
IO/IIS/INFR	J12105	DP/BGD/84/014	Promotion of the hand-knotted woollen carpet industry
IO/IIS/IMR	31.3.01	DP/BGD/73/046	Industrial self-management
IO/IIS/IMR	J12206	DP/BGD/73/043	Jute industry development
IO/IIS/IMR	J12208	DP/BGD/85/127	Assistance to the Investment Advisory Centre of Bangladesh - preparatory assistance
IO/IIS/IMR	31.7.A	UC/BGD/78/175	Assistance to the furniture industry
IO/IIS/PLAN	31.2.A	RP/BGD/79/009	Preparation of the second five-year plan (industry sector)
IO/IIS/PLAN	31.2.A	RP/BGD/80/004	Preparation of the second five-year plan (industry sector)
IO/T/AGRO	30.6.00	IB/BGD/75/005	Industrial sector mission
IO/T/AGRO	31.7.B	IB/BGD/75/001	Co-ordination of activities of the World Bank and UNIDO in the jute and cotton textile industries
IO/T/AGRO	J13102	DP/BGD/73/049	Textile industry development programme
IO/T/AGRO	J13102	DP/BGD/75/013	Jute products research
IO/T/AGRO	J13102	DP/BGD/79/030	Central testing laboratories for jute goods

UNIDO's Completed Technical Co-operation Projects

People's Republic of BANGLADESH
(2)

Backstopping Responsibility	Spec.Act./ All.Acc.Code	Project Number	Project Title
IO/T/AGRO	J13102	DP/BGD/82/006	Textile industry development programme (continuation of DP/BGD/73/049)
IO/T/AGRO	J13102	DP/BGD/82/047	Strengthening of the College of Textile Technology - preparatory assistance
IO/T/AGRO	31.7.C	DP/BGD/80/020	Assistance to Al-Mustafa Industries and Shyampur Sugar Mills
IO/T/AGRO	31.7.C	DP/BGD/75/009	Assistance to Bangladesh Food and Allied Industries Corporation
IO/T/AGRO	31.7.C	SI/BGD/76/807	Commissioning of two boilers for the Bangladesh Food and Allied Industries Corporation
IO/T/AGRO	31.7.C	SI/BGD/77/801	Assistance to cigarette manufacturing factories, Bangladesh Food and Allied Industries Corporation
IO/T/AGRO	31.7.C	UD/BGD/78/003	Feasibility study for the establishment of a rice bran oil extraction plant in Bangladesh
IO/T/AGRO	31.7.C	UF/BGD/78/003	Feasibility study for the establishment of a rice bran oil extraction plant in Bangladesh
IO/T/AGRO	31.7.D	SI/BGD/76/809	Leather industry preparatory mission
IO/T/AGRO	J13106	CD/BGD/81/C03	Establishment of a rice bran oil extraction plant (continued under DP/BGD/85/137)
IO/T/AGRO	J13106	UD/BGD/78/003	The establishment of a rice-bran oil extraction plant in Bangladesh
IO/T/MET	30.2.03	RP/BGD/74/001	Iron and steel production
IO/T/MET	30.2.03	RP/BGD/75/003	Iron and steel production
IO/T/MET	31.8.C	DP/BGD/75/020	Sponge iron technology
IO/T/ENG	31.9.B	DP/BGD/73/058	Metalworking and engineering industry development
IO/T/ENG	31.9.B	DP/BGD/75/002	Linkage studies in engineering industries

UNIDO's Completed Technical Co-operation Projects

People's Republic of BANGLADESH
(3)

Backstopping Responsibility	Spec.Act./ All.Acc.Code	Project Number	Project Title
IO/T/ENG	31.9.B	SM/BGD/77/019	Assistance to selected engineering enterprises
IO/T/ENG	J13312	DP/BGD/79/036	Assistance in operation of Bangladesh Machine Tool Factory
IO/T/CHEM	30.3.01	DA/BGD/73/005	Cement plant feasibility study
IO/T/CHEM	32.1.A	IS/BGD/74/004	Modification and repair of cement factory
IO/T/CHEM	32.1.B	DP/BGD/75/014	Light weight aggregates pilot plant
IO/T/CHEM	32.1.B	DP/BGD/77/005	Ceramics industry development
IO/T/CHEM	J13419	DP/BGD/83/041	Assistance to glass factories, Bangladesh freedom fighters welfare trust
IO/T/CHEM	J13419	DP/BGD/85/006	Analysis of raw materials for non-metallic mineral based industries - preparatory assistance
IO/T/CHEM	J13419	DP/BGD/85/079	Introduction of hand decorated high quality porcelain - preparatory assistance (main part cancelled)
IO/T/CHEM	32.1.H	DP/BGD/72/025	Pilot Plastics Processing and Demonstration Centre
IO/T/CHEM	32.1.H	DP/BGD/73/067	Assistance to Petrobangla
IO/T/CHEM	32.1.H	IS/BGD/74/001	Assistance to the synthetic resin plant Chittagong
IO/T/CHEM	32.1.H	SI/BGD/74/801	Assistance to the synthetic resin plant Chittagong
IO/T/CHEM	32.1.H	SM/BGD/79/032	Assistance to pre-investment studies on basic petrochemical industries
IO/T/CHEM	32.1.C	TF/BGD/82/001	Bangladesh - Appraisal of soda ash and methanol project proposal
IO/T/CHEM	J13420	DP/BGD/77/025	Pilot Plastics Processing, Testing, Training and Information Centre (phase II)
IO/T/CHEM	30.5.01	RP/BGD/74/002	Fertilizers

UNIDO's Completed Technical Co-operation Projects

People's Republic of BANGLADESH
(4)

Backstopping Responsibility	Spec.Act./ All.Acc.Code	Project Number	Project Title
IO/T/CHEM	32.1.F	DP/BGD/75/030	Basic chemical industries development
IO/T/CHEM	32.1.F	SI/BGD/78/801	Assistance to fertilizer industry Bangladesh Chemical Industries Corporation
IO/T/CHEM	J13421	DP/BGD/78/002	Operation and management of fertilizer plants
IO/T/CHEM	32.1.H	DP/BGD/77/006	Gas field management
IO/T/CHEM	32.1.H	SI/BGD/74/822	Utilization of natural gas for synthetic fibre production
IO/T/CHEM	32.1.H	SI/BGD/75/833	Utilization of natural gas for vinyl-chlorid and PVC production
IO/SD/FEAS	31.6.A	RP/BGD/76/002	Assistance in a pre-feasibility study on the establishment of an export processing zone
IO/SD/FEAS	31.6.A	RP/BGD/77/001	Assistance in a pre-feasibility study on the establishment of an export processing zone
IO/SD/FEAS	31.6.A	RP/BGD/78/003	Assistance in a pre-feasibility study on the establishment of an export processing zone
IO/SD/FEAS	31.6.A	RP/BGD/79/008	Assistance to the Ministry of Industry
IO/SD/FEAS	32.3.04	RP/BGD/75/004	In-plant training courses on industrial free zone development and management
IO/SD/FEAS	J14102	TF/BGD/86/001	Associate expert
IO/SD/TRNG	31.5.B	RP/BGD/74/001	Training on practical operations of steel mills
IO/SD/TRNG	31.5.B	RP/BGD/75/003	Training on practical operations of steel mills
IO/SD/TRNG	31.5.B	RP/BGD/76/001	Training on practical operations of steel mills
IO/SD/TRNG	31.5.B	RP/BGD/77/002	Fourth general course on development banking
IO/SD/TRNG	31.5.B	RP/BGD/79/001	Study tour in management and marketing of wood and wood products

UNIDO's Completed Technical Co-operation Projects

People's Republic of BANGLADESH
(5)

Backstopping Responsibility	Spec.Act./ All.Acc.Code	Project Number	Project Title
IO/SD/TRNG	31.5.B	RP/BGD/79/005	Industrial training manager
IO/SD/TRNG	31.5.B	RP/BGD/79/006	Training in investment promotion
IO/SD/TRNG	31.5.B	RP/BGD/80/005	Training in investment promotion
IO/SD/TRNG	31.5.B	RP/BGD/81/001	Training in foundry
IO/SD/TRNG	31.5.B	RP/BGD/84/001	Training on project procurement and contract negotiation
IO/SD/TRNG	31.5.B	RP/BGD/84/002	Familiarization tour concerning UNIDO operations for the External Resources Division officials of Bangladesh
IO/SD/TRNG	J12310	XP/BGD/86/001	Training in investment promotion
IO/SD/TRNG	31.5.C	RP/BGD/76/003	Industrial training (study tour)
IO/SD/TRNG	31.5.C	RP/BGD/79/007	In-plant group training programme in the field of modern foundry technology for Bangladesh to be held in Poland, April/July 1980
IO/SD/TRNG	31.5.C	RP/BGD/80/002	In-plant group training programme in the field of modern foundry technology for Bangladesh to be held in Poland, April/July 1980
IO/SD/TRNG	31.5.C	UD/BGD/79/198	In-plant group training programme in the field of modern foundry technology for Bangladesh to be held in Poland
PPD/AREA/LDC	30.6.Z	RP/BGD/76/005	UNIDO/UNCTAD joint exploratory mission to Bangladesh
PPD/SPA/ECDC	30.9.Z	RP/BGD/80/001	Participation of H.E. Mr. M. Sultan, Ambassador of Bangladesh to the Third UNIDO Conference
PPD/SPA/ECDC	30.9.Z	RP/BGD/80/003	Round-table ministerial meeting for co-operation in the industrial development of the People's Republic of Bangladesh

UNIDO's Completed Technical Co-operation Projects

People's Republic of BANGLADESH
(6)

Backstopping Responsibility	Spec.Act./ All.Acc.Code	Project Number	Project Title
PPD/SPA/ECDC	30.9.Z	UC/BGD/79/217	Round-table ministerial meeting for co-operation in the industrial development of the People's Republic of Bangladesh
IPCT/II	32.2.04	DP/BGD/73/044	Promotion of investment in specific industrial projects
IPCT/II/PIF	G01102	DP/BGD/80/014	Assistance to investment promotion in industries (multifund to SM/BGD/80/014)
IPCT/II/PIF	G01102	SM/BGD/80/014	Assistance to investment promotion in industries (multifund to DP/BGD/80/014)
IPCT/II/PIF	G01102	DP/BGD/85/225	Assistance for the preparation and follow-up of Investor's Forum, 1986
IPCT/II	31.1.D	RP/BGD/80/006	Training in investment promotion
IPCT/II	31.1.C	AR/BGD/78/002	Bangladesh - industrial sector mission
IPCT/DTT/TEC	62.5.Z	UC/BGD/78/273	Workshop on the acquisition, selection and negotiation of technical transfer agreements
IPCT/DTT/INF	62.6.Z	RP/BGD/79/003	Promotion of R+D and technology transfer in Bangladesh
EPL/REL/GOV	70.3.Z	RP/BGD/79/004	Visit of Mr. Jamaluddin Ahamed, Minister of Industries, Bangladesh
EPL/REL/GOV	70.3.Z	RP/BGD/82/002	Visit of H.E. Mr. S.M. Shafi-ul-Azam, Minister of Industries and Commerce, Bangladesh; accompanied by the Director-General of Industries of the Ministry of Industries and Commerce, 12 - 13 October 1982

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

People's Republic of BANGLADESH

Backstopping Responsibility	All.Acc.Code	Project Number	Project Title
IO/IIS/IMR	J12206	DP/BGD/84/018**	Assistance to the Chittagong Dry Docks and Heavy Steel Structure Works
IO/T/AGRO	J13102	DP/BGD/84/051*	Private textile mills - production management system
IO/T/AGRO	J13106	DP/BGD/85/137*	Rice bran oil extraction plant (continuation of CD/BGD/81/003)
IO/T/ENG	J13316	DP/BGD/84/037**	Assistance to the Bangladesh diesel plant
IO/T/ENG	J13319	BF/BGD/88/051**	Emergency rehabilitation programme - Diesel engine-driven pump sets
IO/T/CHEM	J13419	DP/BGD/83/037*	Bangladesh Insulator and Sanitary-Ware Factory Ltd.
IO/T/CHEM	J13419	DP/BGD/83/043*	Upgrading and development of indigenous building materials manufactures (suspended)
IO/T/CHEM	J13420	DP/BGD/81/032*	Pilot plastics processing, testing, training and information centre (phase III)
IO/SD/FEAS	J14102	DP/BGD/80/022*	Assistance to Chittagong export processing zone
IO/SD/FEAS	J14102	DP/BGD/85/015*	Training workshop on identification, preparation, evaluation, promotion and financing of industrial projects

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

ANNEX C

MANUFACTURING PROJECTS SEEKING EXTERNAL ASSISTANCE

INVESTORS' FORUM, DHAKA
19-22 January 1987

BANGLADESH

Sl. No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
		AGRO-BASED INDUSTRIES			
1	BGD/030/V/83-12	Alcohol (Industrial)	9.3	9 million litres	Loans
2	BGD/068/V/84-04	Brewery (Beer Manufacture in Duty Free Zone)	3.6	80,000 hectolitres (i.e.about 1.8 million gallons)	Equity participation, Loans, Technical know-how, Licence, Access to foreign markets, Joint venture.
3	BGD/028/V/83-12	Caffine from Tea Waste	0.2	6,000 Kg.	Loans, Joint venture, Training, Marketing, Sale of technology.
4	BGD/014/V/81-09	Canning of Mangoes, Lychies, Jackfruits, Pineapples etc.	5.2	4,500 tons	Equity, Loans, Equipment on credit, Market, Technology, Training.
5	BGD/021/V/81-09	Cigarette & Bidi Paper (from Jute Cuttings)	9.0	1,500 tons	Equipment on credit, Equity.
6	BGD/057/V/84-03	Citric Acid from Molasses	2.4	3,000 tons	Equity, Loans, Joint venture, Technology.
7	BGD/079/V/84-07	Dextrine from starch	0.3	300 tons	Loans, Equipment on credit.
8	BGD/147/V/86-04	Dextrose from Potato starch	0.5	600 tons of Dextrose by hydrolysis of Potato starch	Loans, Machinery on credit, Technical know-how, Training.
9	BGD/080/V/84-07	Ethanol	0.4	600,000 litres	Marketing, Loans, Sale of technology, Equity, Training.
10		* Feedmeal for cattle and Poultry	3.3	20,000 tons	Joint venture, Loans, Equipment on credit.

Sl. No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
11	BGD/138/V/86-02	Furfural	13.3	Furfural-5000 tons. Acetic Acid-3,300 tons & Formic Acid 300 tons	Joint venture, Loans, Technology, Equipment on credit, Foreign marketing.
12	BGD/034/ /t .-12	Jute Finishing	10.5	15.22 million sq.m.	joint venture, Equity, Loans.
13	BGD/064/V/84-05	Nicotin Sulphate from Tobacco	0.2	350 tons	Loans, Technology, Marketing.
14		✲ Palm Oil Refining	5.0	30,000 tons	Joint venture, Technical know-how.
15	BGD/076/V/84-07	Papain & Pectin from Papaya	0.1	Papain-7.5 tons Pectin-1.5 tons	Loans, Technology, Equipment, Training.
16		✲ Paper Mills/Security Paper Mill	28.0	2,500 tons	Joint venture, Equipment on credit, Technical know-how.
17	BGD/096/V/84-11	Rubberised coir mattress	0.7	300 tons of Rubberised coir mattress.	Equity participation, Loans, Machinery on credit, Training.
18		✲ Sugar Mills	18.6	Sugar 25,500 tons	Joint venture, Loans, Equipment on credit.
19	BGD/041/V/83-12	Wooden Pencils	0.9	150,000 Gross	Joint venture, Equity, Equipment on credit.
20		✲ Yeast Manufacturing	2.3	Compressed Yeast 500 tons Dry Yeast 60 tons	Joint venture, Equipment on credit, Training.

Sl. No	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
		CHEMICAL, PHARMACEUTICAL AND ALLIED INDUSTRIES			
21	BGD/094/V/84-11	Abrasives (Coated)	0.2	Sand Paper 6000 reams Emery Paper 6000 reams	Loans, Technology, Equipment.
22	BGD/134/V/86-02	Alkyd Resin Plant	0.6	6000 tons of fine 605 resin or 1000 tons of resin diluted in solvent	Technology, Training & Loans.
23	BGD/075/V/84-07	Aluminium Chloride from Aluminium Scrap	0.2	350 tons of Aluminium Chloride	Technology, know-how, Training.
24	BGD/129/V/86-01	Aluminium Hydroxide Gel & Magnesium Hydroxide Paste	0.5	600 tons of Aluminium Hydroxide Gel & 500 tons of Magnesium Hydroxide paste	Loans,, Joint venture, Licencing,Technology, Turnkey project, Equipment on credit, Training.
25	BGD/062/V/84-05	Ammonium Chloride	0.3	Ammonium Chloride -1000 tons Sodium Sulphate 1300 tons	Technology, Equipment, Loans.
26	BGD/146/V/86-04	✲ Ammonium Sulphate from Phosphogypsum	28.3	135,000 tons	Joint venture, Technology, Loans, Equipment.
27	BGD/144/V/86-04	✲ Ampicillin	1.1	54 tons	Joint venture, Technology, Loans, Equipment.
28	BGD/163/V/86-04	Benzene Hexa Chloride	1.4	BHC Tech-1050 tons BHC 10% Dust-5000 tons BHC 50% WP-1100 tons	Joint venture, Technology & Loans.
29	BGD/077, V/84-07	Calcium Carbonate (Precipitated)	1.1	1,500 tons	Loans, Joint venture, Equipment, Marketing.

Sl No	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
30	BGD/081/V/84-08	* Caustic Soda Complex	15.6	Caustic Soda - 9000 tons Liquid Chlorine - 6900 tons HCL (100%) 600 tons Sodium Hypochlorite 320 tons	Joint venture, Technology, Equity, Loans.
31	BGD/065/V/84-05	Causticisation Plant	0.8	Caustic Soda - 350 tons	Loans, Technology, Equipment, Training.
32	BGD/072/V/84-07	Cement Plant (Mini)	1.1	9,000 tons	Loans, Technology, Equipment on credit, Training.
33	BGD/160/V/86-04	Copper Oxychloride	0.3	Copper oxychloride Tech. 150 tons Copper oxychloride 50%WP 171 tons	Joint venture, Loans, Technology.
34	BGD/166/V/86-08	Dyes and Pigments	1.7	Sulphur black 150 tons Naphthol Blue black 90 tons Vat blue I 90 tons	Joint venture, Equipment on credit.
35	BGD/078/V/84-07	Ethyl Ether	0.2	330 tons	Loans, Equity, Technology, Marketing.
36	BGD/058/V/84-03	Ferrous Sulphate and Ferric Oxide	1.6	Ferrous Sulphate - 2500 tons Ferric Oxide - 500 tons	Equity, Loans, Joint venture, Technology.
37	BGD/050/V/84-03	Gelatin Capsules	3.4	500 million Capsules	Equity, Equipment, Loans, Technology, Training.

Sl. No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
38	BGD/055/V/84-03	Gelatin from Animal Bones	2.5	300 tons	Equity, Loans, Joint venture, Technology, Training.
39	BGD/056/V/84-03	Glue from hide residuals	0.5	360 tons	Loans, Technology.
40	BGD/130/V/86-01	Insulin	0.6	125 Kg	Joint venture, Technology, Training.
41	BGD/121/V/86-01	Lactose B.P. (2 units)	0.6	600 tons	Technology, Training, Loans.
42	BGD/141/V/86-02	Lubricant oils (Re-Refining of used oil)	6.0	Re-Refined Lub. oil-10,000 tons Greases-800 tons other Products 4,400 tons	Equipment on credit, Licencing, Technology, Finance.
43	BGD/157/V/86-04	Mineral sands in Cox's Bazar (Processing)	n.d.	Ilmenite, Rutile Zircon, Garnet Magnetite - n.d.	Joint venture, Technology, Foreign marketing, Loans.
44	BGD/051/V/84-03	Nickel Sulphate	0.2	180 tons	Loans, Technology, Training.
45	BGD/119/V/86-01	Paracetamol (BP)	0.8	100 tons Paracetamol	Loans, Joint venture, Licencing, Sale of technology, Turnkey project, Equipment supply, Training.
46	BGD/155/V/86-04	Pesticides Production & formulation	5.0	Malathion Technical-400 tons Dichlorovos Technical-200 tons Malathion 57 Ec. - 700 KL Dichlorovos 100 Ec - 200 KL others - 300 KL	Joint venture, Technology, Loans, Equipment.

Sl. No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
47	BGD/063/V/84-05	Phosphogypsum based Products.	4.6	Additive to cement clinker - 19,000 tons Plaster Boards - 500 tons others - 7,500 tons	Equity, Loans, Technology, Training.
48	BGD/061/V/84-05	Plastic cans and Drums for Industrial use.	1.2	120,000 pieces of 200 litres (44 gallon) polyethylene drums and sliver cans.	Loans, Access to foreign markets, Joint venture.
49	BGD/066/V/84-04	PVC adhesive Tape	0.4	2 million sq.m. of tapes.	Equity, Loans, Sale of technology, Equipment on credit, Foreign marketing, Training.
50	BGD/091/V/84-11	* PVC Pipes (Flexible)	0.4	460 tons	Equipment, Technology, Loans.
51	BGD/156/V/86-04	* PVC Resin from VCM (Vinyl Chloride Monomer)	13.4	9,000 tons	Joint venture, Technology, Loans, Equipment.
52	BGD/117/V/86-01	Sand Beneficiation	1.9	31,320 tons	Equipment, Technology, Training.
53	BGD/038/V/83-12	Self-adhesive & reprographic Products	2.9	Self-adhesive 2.5 million dozen, PVC Tapes-1.3 million Paper & other rolls, telex and other reprographic paper 270,000 rolls stencil paper 110 million sheets.	Equity, Loans, Joint venture, Licence, Technology, Equipment on credit.

Sl No	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
54	BGD/143/V/81-09	* Soda Ash	70.8	60,000 tons	Joint venture, Equipment, Loans, Equity.
55	BGD/067/V/84-04	Sodium Sulphate & Hydrochloric acid	0.1	Anhydrous Sodium Sulphate 350 tons Hydrochloric acid 350 tons	Loans, Technology, Equipment, Training.
56	BGD/122/V/86-01	Sorbitol from Dextrose (Basic Pharmaceuticals)	0.9	800 tons	Technology, Training & Loans.
57	BGD/158/V/86-04	Thermosetting Moulding compound	1.9	1,200 tons	Joint venture, Technology, Marketing.
58		* Urea Fertilizer Project	67.3	100,000 tons	Feasibility study, Joint venture.
59	BGD/073/V/84-07	Zinc Chloride from Zinc Scrap	0.1	350 tons	Loans, Technology, Know-how, Equipment on credit, Training.
60	BGD/054/V/84-03	Zinc Oxide Zinc Sulphate	1.4	Zinc Oxide 900 tons or Zinc Sulphate 1,800 tons	Equity, Loans, Joint venture, Technology.
		ELECTRICAL AND ELECTRONIC INDUSTRIES			
61		Calculators (Pocket and Desk)	n.d.	n.d.	Equity participation, Technology, Training, Loans, Foreign marketing.

Sl. No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
62	BGD/092/V/84-11	Electronic kits & Electrical scientific measuring instruments.	0.1	Electronic kits-200 Electrical measuring Instruments-800	Loans, Technology, Foreign marketing, Training.
63	BGD/167/V/86-08	Ferrite Components (Export oriented)	2.0	600 tons	Loans, Joint venture, Licencing, Technology, Equipment on credit, Training.
64	BGD/111/V/85-01	Mini Circuit Breaker (0.5-60 amps)	0.2	200,000 Units	Equipment on credit, Training, Marketing.
65	BGD/152/V/86-04	Mini Circuit Breaker (6-35 amps EZI type)	1.3	120,000 Units	Joint venture, Marketing, Equipment on credit, Training.
66	BGD/120/V/86-01	Motors (Fractional horse power)	0.2	2,750 pieces F.H.P. motors of various sizes as 1/4 hp. 1/3 hp. 1/2 hp. & 3/4 hp.	Joint venture, Loans.
67	BGD/123/V/86-01	Printed Circuit Boards	0.2	600, 000 Units	Technology, Equipment on credit, Training, Marketing.
68	BGD/151/V/86-04	Printed Circuit Boards (Export oriented)	1.7	2,884,000 Units	Equity, Loans, Joint venture, Technology, Equipment on credit, Marketing, Training.

Sl. No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
		ENGINEERING INDUSTRIES			
69	BGD/133/V/86-02	Air Compressors	0.8	1 HP. 1800 3 HP. 300 5 HP. 50	Suppliers credit, Training.
70	BGD/114/V/85-09	Alloy Steel Casting, Aluminium Transmission Line Hardware & Conductor accessories	1.1	M.S.Hot rolled section 2500 tons Alloy steel casting and ingots 300 tons Transmission line hardware & conductor accessories 360 tons	Loans, Joint venture.
71	BGD/116/V/86-01	Alloy Steel Ingots, Casting & Stainless Steel Plates.	0.7	Alloy steel casting etc. 500 tons Stainless steel castings etc. 400 tons Mild steel & carbon steel casting, etc 2000 tons	Loans, Equipment, Technology, Training, Turnkey project.
72	BGD/137/V/86-02	Aluminium Die Cast Piston and Ceiling Fan Cover.	0.3	Piston for Agro-diesel engine 50,000 pcs. (2 MT/Pm) Fan cover for Ceiling Fan 50,000 pcs. (3 MT/Pm)	Equipment on credit, Loans.
73	BGD/125/V/86-01	Aluminium foil for Tea chests Pharmaceuticals & Cigarettes	12.2	1,350 tons	Technology, Equipment on credit, Loans.

Sl. No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sough.
74	BGD/108/V/85-01	Aluminium Furniture	0.1	Aluminium tables,chairs etc. 2,100 Nos.	One Technician for training local personnel, Design catalogues.
75	BGD/112/V/85-09	Bayonet caps and Aluminium caps for fluorescent tubes	0.7	18 Million Nos.	[illegible]ty participation, Loans, Technical know-how and Training.
76	BGD/082/V/84-08	Bicycle Chains	0.5	480,000 Nos.	Loans, Technology, Equipment on credit, Equity.
77	BGD/131/V/86-01	Bicycle Complex	5.6	100, 000 Bicycles & spares	Technology, Equipment on credit, Grant in aid for Tool room.
78	BGD/027/V/83-12	Bicycle & spares for bicycle	1.0	25,000 Cycles	Loans, Licence, Technology, Equity, Equipment on credit.
79		* B P Sheets manufacturing	10.0	125,000 tons	Loans, Technology, Equipment on credit, Equity.
80	BGD/087/V/84-11	Brass sheets from brass scrap	0.6	600 tons of Brass sheets of assorted thickness	Equity participation, Loans, Machinery on credit, Training.
81	BGD/088/V/84-11	Brass wire from brass scrap	0.2	155 tons	Loans, Equipment, Training.

Sl.No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
82	BGD/128/V/86-01	Bright Bars	0.2	1,500 tons	Loans, Technology, Equipment, Training.
83	BGD/085/V/84-08	Clutchfacings & Brakelinings	0.2	Brake linings 60,000 sets Clutch facing 36,000 sets	Equity participation, Loans, Training personnel.
84	BGD/095/V/84-11	Cylinder Liners	0.2	20,000 numbers	Loans, Equity, Joint venture.
85	BGD/135/V/86-02	Dies Making Foundry	0.1	Dies - 60 tons Forging - 30 tons Casting - 30 tons	Loans, Technology, Equipment, Training.
86	BGD/100/V/84-11	Domestic Pressure Cookers	0.2	36,000 numbers	Loans, Machinery on credit, Training.
87	BGD/031/V/83-12	Engineering Workshop	8.1	Various spare parts of textile, jute, railway and agricultural tools & equipment. (Turn over US $ 7 6 million)	Loans, Equipment on credit, Training.
88	BGD/047/V/84-03	G.I/M.S.Pipe Fittings	26.7	1,200 tons	Equity, Loans, Joint venture, Equipment, Training.
89	BGD/024/V/81-09	Hand Tools	5.5	Double gap spanners-840,000 Adjustable spanners-420,000 Combination pliers-84,000 Screwdrivers - 2,100,000	Technology, Equipment, Loans, Equity, Training.

Sl.No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
90	BGD/162/V/86-04	Imitation jewellery	0.4	4 million pcs. assorted items	Joint venture, Technology, Marketing.
91	BGD/083/V/84-04	LPG Cylinders (15 kg)	2.8	600,000 numbers	Joint venture, Technology, Equity, Loans.
92	BGD/165/V/86-04	Machinery & Equipment for Pharmaceuticals and Chemical Industry	0.6	Various items 400 pcs.	Joint venture, Technology, Loans.
93	BGD/053/V/86-04	Machine Tools Milling Machine	0.4	20 units	Loans, Sale of technology, Equipment on credit, Training.
94	BGD/159/V/86-04	Machine Tools (small)	0.1	Lathes 50 no. Shapers 30 no. Bench drills 100 no. Power hacksaws 15 no.	Sale of technology, Equipment on credit.
95	BGD/099/V/84-11	Malleable Iron Casting and Galvanized Pipe fittings from Steel & Zinc scrap	0.3	Various items 237 tons	Loans, Technology, Training.
96	BGD/074/V/84-07	Mathematical Instruments	0.3	700,000 sets	Technology, Equipment on credit Equity, Loans.
97	BGD/164/V/86-04	Mechanical Toys	0.6	Dummy - 64,000 Wind & friction - 125,000 Battery operated - 215,000	Joint venture, Technology, Marketing.

Sl. No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
98	BGD/036/V/83-12	Meters	10.7	Water meter – 50,000 Gas meter – 5,000 Other meters – 5,000 Regulators – 20,000	Equity, Loans, Technology, Training, Equipment on credit, Joint venture.
99	BGD/145/V/86-04	Power Looms Assembly	1.2	900 pcs	Joint venture, Technology, Loans.
100	BGD/103/V/84-11	Radiators	0.5	6,500 numbers	Loans, Equity, Joint venture.
101	BGD/150/V/86-04	Sewing Machines	1.8	20,000 numbers	Technology, Equipment, Loans
102	BGD/126/V/86-01	Shock Absorbers	0.5	Light duty shock absorbers – 8,000 Heavy absorbers – 8,000	Loans, Joint venture.
103	BGD/101/V/84-11	Special rivets & pop rivets	0.2	Steel 34 tons Brass 3 tons Copper 3 tons Hollow, Semi-hollow rivets & pop rivets: Aluminium – 20 tons Brass 3 tons Copper 3 tons Steel 4 tons	Loans, Equipment, Equity participation, Machinery on credit, Training.

Sl. No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
104	BGD/139/V/86-02	Stainless Steel Cutlery	0.7	Teaspoons - 3.84 m.pcs. Forks - 1.92 m.pcs. Knives - 1.92 m.pcs. Tablespoons - 1.92 m.pcs.	Loans, Equipment, Training, Markets.
105	BGD/097/V/84-11	Steel Balls for Bicycles	0.3	2,400,000 gross	Technology, Equipment, Loans.
106	BGD/069/V/84-04	Steel Casting Foundry	1.2	1,000 tons	Loans, Sale of technology, Equipment on credit.
107	BGD/106/V/84-12	Steel Forged items	0.4	370 tons	Loans, Technology, Equipment, Training.
108	BGD/161/V/86-04	Surgical Instruments	0.3	BP blade - 800,000 Scissors - 20,000 Artery forceps - 30,000 Dissecting forceps - 15,000 Needle holders - 12,800	Technology, Equipment, Joint venture, Training.
109		✲ Three Wheeler Passenger Vehicle / Motorized Rickshaw	2.4	10,000 nos.	Joint venture, Feasibility study.
110	BGD/109/V/85-01	Watch cases (Stainless steel)	0.3	150,000 units	Equipment, Technology, Loans.

Sl. No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
111	BGD/110/V/85-01	Watch Dials	0.3	350,000 units	Equipment, Technology, Loans.
112	BGD/113/V/85-09	Wrist Watch Cases	0.1	100,000 cases	Loans, Equipment, Training.
		GLASS CERAMICS AND OTHER NON-METALLIC MINERAL PRODUCTS			
113	BGD/132/V/86-02	Ceramic Glazed Tiles for Export	0.7	Glazed floor tiles 6.10 million Glazed wall tiles 2.04 million	Joint venture, Training, Equipment, Loans, Foreign marketing.
114	BGD/124/V/86-01	Fibre Glass / Glass fibre	1.6	750 tons	Equity, Loans, Technology, Training, Equipment.
115	BGD/105/V/84-12	Graphite Crucibles	0.3	500 tons (Size upto no.500)	Loans, Technology, Equipme .
116	BGD/107/V/85-01	Grinding Wheels	0.2	180 tons	Loans, Training, Technical know-how, Machinery on suppliers credit, Export market.
117	BGD/118/V/86-01	Lampshell & Laboratory Glassware	4.3	Lampshell 33.2 million units. Laboratory glass-ware 576,000 pcs.	Equity, Loans, Technology, Equipment.
118	BGD/136/V/86-02	Optical Lenses & Prisms	2.2	Opthalmic blanks unifocal type - 375,000 Opthalmic blanks bifocal type 1,125,000 Optical Lenses & Prisms 300,000 pcs.	Joint venture, Suppliers credit, Technical know-how, Training.

Sl No	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
119	BGD/154/V/86-04	Sheet and Plate Glass	7.6	9,900 tons	Joint venture, Equipment, Loans.
		LEATHER AND RUBBER PRODUCTS			
120	BGD/032/V/83-12	Leather finishing	2.0	6 million sq.ft. goat skin	Loans, Equipment on credit, Technology, Training.
121	BGD/040/V/83-12	Leather finishing	2.0	3.6 m sq.ft. Cowhides 2.4 m sq.ft. Goat skin	Equity, Loans, Technology, Equipment on credit, Joint venture.
122	BGD/037/V/83-12	Shoe Manufacture (Existing unit rehabilitation)	1.2	Working shoes 180,000 pairs Mens & Ladies' shoes 180,000 pairs Children's shoes 240,000 pairs Shoes upper 150,000 pairs	Loans, Technology, Equipment on credit, Training.
123		✲ Tyres for Trucks, Buses & Cars	n.d.	Radial tyres and tubes 5 million Cross ply tyres & tubes 2 million	Feasibility study, Training, Machinery, Technical know-how, Marketing.

Sl. No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
		TEXTILE PRODUCTS			
124	BGD/039/V/83-12	Synthetic and blended Fabrics (Manufacturing, Printing & Finishing)	7.4	Dyed/ Printed Georgette Sarees: 1,00 million metres. Printed Shirting: 1.70 million m. Designed/Suiting 1.20 million m. Printed Bedsheets/ Covers : 0.10 million m.	Equity participation, Loans, Suppliers credit.
125		Terry Towel	n.d.	n.d.	Joint venture, Equipment on credit, Foreign marketing.
126	BGD/149/V/86-04	Woolen and Acrylic Sweater Industry	0.9	Woolen sweater 20,000 dozen Acrylic sweater 17,500 dozen	Joint venture, Equipment, Foreign marketing, Training.
		UNCLASSIFIED			
127		* Condoms	6.7	40 million	Joint venture, Technical know-how, Machinery on credit, Loans.
128	BGD/033/V/83-12	Fish Meal Plant	1.0	4,000 tons	Loans, Licence & know-how, Access to foreign markets.
129	BGD/084/V/84-08	Microscopes	0.7	5,000 pcs	Technology, Training, Joint venture, Equipment.

Sl. No.	Number	Title	Total Investment US $ Million	Capacity	Foreign Contribution sought
130	BGD/049/V/84-03	Packing Materials	1.8	20,000 sq. m.	Equity, Loans, Joint venture, Equipment, Training.
131	BGD/026/V/81-09	Syringes and needles	21.2	62 million	Technology, Equipment, Loans, Equity, Training, Joint venture.
132	BGD/148/V/86-04	Zippers	0.3	360,000 dozen	Technology, Equipment, Training.
133		Agricultural Machinery	n.d	n.d.	Joint venture, Equity participation, Equipment on credit, Loans, Technology, Marketing.
134		A.K. Khan Dockyard	2.0	Annual turnover US $ 683,000	Technical know-how, Equipment, Training.
135		I.C. Packaging	n.d.	n.d.	Feasibility study, Technical know-how, Joint venture.

n.d. — Not determined.

* Open to Public Sector also.

SELECTED REFERENCES

Ahmed Q.K. and Chowdhury A., "Productivity Trends in the Manufacturing Sector of Bangladesh", Bangladesh Economic Review, (BER) Volume 1, No. 2, 1973.

Alamgir M., "Resources for Development", in E.A.G. Robinson and K. Griffin (ed.) Economic Development of Bangladesh, Macmillan, 1974.

Bakht S. and Osmani S.R., "Comparative Cost Structure - A Study of Selected Manufacturing Industry in Bangladesh", BER Volume II, No. 1, January 1974.

Bangladesh Bureau of Statistics; Ministry of Agriculture; World Food Programme, Dhaka, and World Bank, Bangladesh: Adjustment in the Eighties and Short-term Prospects, Report No. 7105-BD, March 1988.

Bangladesh Institute of Development Studies, Divestment and Denationalization: Profile and Performance, Dhaka, July 1984.

BBS, Report on Bangladesh Census of Manufacturing Industry, 1982/83.

BBS, Statistical Pocketbook of Bangladesh, 1987, Dhaka, 1987.

BBS, Statistical Yearbook, 1987.

Chowdhury N., "On the Structure of Input and Product Markets in Cotton Weaving Industry of Bangladesh", BDS, Volume IX, No. 2, (1981).

Chr. Michelsen Institute, Bangladesh: Country Study and Norwegian Aid Review, Bergen, 1986.

Cottage Industries of Bangladesh: A Survey, Bangladesh Small and Cottage Industries Corporation, Dhaka, October 1983.

Dolman A.J., (et al), The Country Boats of Bangladesh, Chr. Micheln Institute, 6 volumes, 1986.

Financial Times, 17.8.1988.

Fowland J. and Parkinson J.B., Bangladesh: The Test Case for Development, Hurst and Co., London, 1976.

Government of Bangladesh, Third Five-Year Plan, 1985-1990.

Hutchessa T., Assistance Policies for Chemical and Allied Sectors, 1985.

Mondal A.H. and Ahmed S., "Factor Proportions and Factor Productivity Changes in Jute and Cotton Textile Manufacturing Industries in Bangladesh", BDS, Volume 12, No. 3, 1984.

SELECTED REFERENCES

(Continued)

Planning Commission, Economic Review, 1986/87, December 1987.

Rab A., Analysis of Assistance Policies for the Sugar Industries, 1985, Management Unit Assistance Policies for the Textile Sector, 1985.

Rahman A.N.M., "Elasticity of Substitution in Manufacturing Industries in Bangladesh", BER, Volume I, No. 2, 1973.

Rashdi A.A., "Factor Substitutability in the Manufacturing Sector of Bangladesh", Bangladesh Development Study (BDS) Volume X, No. 2, 1982.

Sobhan R., The Crisis of External Dependence, Dhaka 1982.

Stern J. Joseph and Mallon D. Richard, "Foreign Exchange Regimes and Industrial Growth in Bangladesh", World Development, vol. 16, No. 12, 1988.

TIP Document, TIP IIPU.B-5 (1985).

UNIDO, Industrial Development Series Review: Nepal, PPD.79, 1988.

UNIDO, Industrial Development Review Series: Nigeria, PPD. 100, 1988.

UNIDO, Industry in a Changing World, New York, 1983.

World Bank, Bangladesh: Adjustment in the Eighties and Short-term Prospects, Report No. 7105-BD, 1988.

World Bank, Bangladesh: Development in a Rural Economy, 1977.

World Bank, Manufacturing Output and the Industrial Production Index (revised), Dhaka, 1985 (unpublished).

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