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The World Bank

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Report No. 2889-BD

BANGLADESH

STAFF APPRAISAL REPORT

JUTE INDUSTRY REHABILITATION PROJECT

May 7, 1980

South Asia Projects
Industrial Development & Finance Division

CURRENCY EQUIVALENTS

The value of the Bangladesh Taka (Tk) is officially set relative to the Pound Sterling. The Pound is floating relative to the US dollar and consequently the Taka-US Dollar rate is subject to change. The exchange rate used in preparing the data for this report is Tk 15.5 = US$1.

PRINCIPAL ABBREVIATIONS USED

ADP	-	Annual Development Program
BJMC	-	Bangladesh Jute Mills Corporation
BMR	-	Balancing, Modernization and Replacement
BSB	-	Bangladesh Shilpa Bank
BSRS	-	Bangladesh Shilpa Rin Sangstha
CBC	-	Carpet Backing Cloth
CIDA	-	Canadian International Development Authority
ECL/PA	-	Economic Consultants Limited/PA Consultants, UK
GOB	-	Government of Bangladesh
MIS	-	Management Information System
ODA	-	Overseas Development Administration, UK
PAS	-	Process Accounting System
UNDP	-	United Nations Development Program
UNIDO	-	United Nations Industrial Development Organization

FISCAL YEAR (FY)

July 1 - June 30

LOCAL QUANTITIES AND WEIGHTS

1 crore	=	10 million
1 lakh	=	100,000
1 maund (md) = 40 seers	=	82.29 lbs.
1 (pucca) bale	=	400 lbs.
1 long ton	=	2,240 lbs.
1 metric ton	=	2,200 lbs.

JUTE INDUSTRY REHABILITATION PROJECT

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This report was prepared by a mission consisting of Messrs. W.M. Schaefer (mission leader), J. Franz, and G.K. Robertson (consultant). The preappraisal mission visited Bangladesh from August 27 to September 8, 1979; the appraisal mission, from December 3 to December 17, 1979. Mr. Imtiazuddin Ahmed assisted the appraisal mission in the field.

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INTRODUCTION

(i) The Government of Bangladesh has requested IDA financing of a jute industry rehabilitation project including spare parts needed for maintenance. The proposed US$20 million IDA Credit would be made to the Government of Bangladesh, which would (a) onlend US$9.9 million for mill rehabilitation to individual mills through the Bangladesh Jute Mills Corporation (BJMC), and onlend S$0.5 million for consultants services and training to BJMC and (b) provide US$9.6 million of foreign exchange to individual mills for purchase of maintenance spares. The proposed U$$10.4 million to be provided for mill rehabilitation, consultants services, and training would finance 75% of the rehabilitation cost excluding duties and taxes. The US$9.6 million would finance about half of the imported spares and equipment over the next three years. The other half would be financed from bilateral sources. The Eighth Imports Program Credit (which the Board approved in February 1980) excluded financing of spares for the jute industry in view of this Project. Further monitoring of the jute action programs undertaken under previous import program credits would be executed under this proposed Credit.

(ii) The jute industry is Bangladesh's most important industry, employs about 205,000 workers, and accounts for about 30% of the value added in the organized manufacturing sector and about 50% of total exports. The Project would focus on the improved maintenance and rehabilitation of the machinery of 66 jute mills and on further upgrading of the organization, procedures and finances of the industry. Thus the Project would help the industry to stay competitive with producers of polypropylene fabrics and other producers of jute goods and help assure continued earnings of foreign exchange and continued employment.

(iii) IDA has been involved over the past five years in assisting the Bangladesh jute industry by: (a) providing foreign exchange for import of maintenance spares in the Fourth through Seventh Imports Program Credits; (b) drawing up action programs for the improvement of marketing, production planning, maintenance, organization, management and finances; and (c) providing technical assistance credits to improve jute factory maintenance and to develop a model plant to test the production of cloth from a blend of jute and cotton fibres (jutton). Jute growing has also benefitted from a Jute Development Project (Credit 765-BD) which is expected to reduce the cost of raw jute supplies to the industry. The proposed Project would continue IDA's involvement in Bangladesh's jute industry over the next three years.

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APPRAISAL OF THE JUTE INDUSTRY REHABILITATION PROJECT

I. THE INDUSTRIAL SECTOR 1/

Structure of the Industrial Sector

1.01 The industrial sector is an important element in the Bangladesh economy. It produces basic consumer goods, provides agriculture with key inputs, accounts for about 60% of export earnings, and employs some 2 million workers, although it accounts for only 8% of GDP. Industrial performance has a critical bearing on resource mobilization and is potentially an important source of rapid economic growth. A large number of industrial units in Bangladesh were originally established to supply the two wings that comprised Pakistan. The separation of these markets, consequent upon the independence of Bangladesh in 1971, substantially reduced capacity utilization in the industrial sector. This was compounded by a shortage of foreign exchange to purchase raw materials and spares, inexperienced management, and labor unrest, especially in the years immediately succeeding independence.

1.02 As a result of nationalization of many of the country's industries following independence, most of the large and medium scale enterprises are in the public sector and consist of approximately 275 units organized under the administrative control of 7 corporations (namely jute, textiles, chemicals, steel and engineering, food, cement and forestry). The public sector now accounts for 65% of the value-added in industry, 85% of manufactured exports, and 25% of the industrial labor force. Although the listing of industrial activities open to private investment has been expanded, the public sector corporations continue to dominate basic industries. To date, denationalization/ disinvestment of industries in the public sector has been on a minor scale.

1.03 The public industrial sector includes the country's largest export oriented industry (jute) and import substitution industries (textiles, chemicals, pulp and paper). The jute manufacturing and cotton textile industries constitute close to half of the industrial capacity in Bangladesh and have essential links to the agricultural, rural, and cottage industry sectors of the economy. In FY79 the jute industry contributed about 30% of the value added in the organized manufacturing sector and about 50% of total exports, and employed 205,000 workers. The cotton textile industry, the second largest industry in Bangladesh, accounts for about 15% of value added in the manufacturing sector, employs 76,000 workers, and produces about 60% of the country's total yarn requirements.

1/ For a detailed analysis of the industrial sector see Report No. 2191-BD, Bangladesh - Issues and Prospects for Industrial Development, December 5, 1978.

Production and Capacity Utilization

1.04 Production in the industrial sector has improved, though slowly, particularly since FY74, due to the improved availability of raw materials, intermediate goods and spare parts, and a higher domestic demand for manufactured products.

Table 1-1: PRODUCTION INDEX
(FY70 = 100)

	FY73	FY74	FY75	FY76	FY77	FY78	FY79
Jute	80.3	90.5	78.6	86.2	88.4	97.7	90.6
Textiles	79.5	92.9	94.0	89.1	83.1	93.4	98.5
Pulp and Paper	62.9	64.1	76.6	52.6	59.8	79.1	83.8
Chemicals	139.8	82.5	81.7	208.6	217.4	173.4	217.5
Steel	90.5	90.0	83.5	77.3	95.3	120.5	146.7
Cement	58.8	98.4	239.0	296.2	580.5	642.4	599.9
General Index (Weighted on value added)	80.9	94.7	86.0	93.9	99.7	106.5	108.3

1.05 Despite improvement in production, many enterprises suffer from low capacity utilization. While average capacity utilization was about 65% in FY79, it was particularly low in chemicals (50%), engineering (50%), steel (49%), and foods (40%) for various reasons. Common factors include: (i) irregular and insufficient raw materials supply; (ii) equipment breakdown and poor maintenance; (iii) insufficient labor training and migration to the Middle East; (iv) administrative delays linked to excessive centralization; (v) frequent power cuts; (vi) inadequate transportation; (vii) lack of spare parts and components linked to foreign exchange shortage; and (viii) insufficient working capital, which prevents adequate procurement of spares and components and, in some cases, insufficient raw materials. Thus, low capacity utilization is only a symptom of many serious problems affecting production efficiency. Under the Fourth to the Seventh Imports Program Credits, specific action programs were developed with GOB to help rectify these problems, particularly in the jute, textile, and pulp and paper industries.

Investment

1.06 Since 1973, GOB's general policy on industrial investment has gradually shifted towards encouraging private sector activity. In FY79, limits on private sector investment were waived and private sector investment was permitted in 10 sectors previously reserved to public firms. The net impact of these policy changes is reflected in the tentative allocation of resources during the current Two-Year Plan and in the rising levels of term lending finance to the private sector. In the Two-Year Plan (FY79-FY80), Tk 8.2 billion was targeted for industrial investment, with about Tk 2.5 billion (or 25% more than in FY78) allocated for private sector investment. In FY79, loans sanctioned by DFCs increased from Tk 1.1 billion in FY78 to Tk 1.3 billion (or by about 3% in real terms assum ing an inflation rate of 15%). All public sector investments are compiled under the Annual Development

Program (ADP) which is prepared by the Planning Commission and approved by the Executive Committee of the National Economic Council--of which the President is the Chairman. To remove administrative obstacles and to facilitate implementation of public and private projects, GOB recently established a "High-Powered Board" within the Ministry of Industries with a mandate and power to resolve administrative difficulties.

Export Performance and Prospects

1.07 From FY77 to FY79, Bangladesh's manufactured exports have risen from US$219.7 million to US$375.3 million, or by 71%, (Table 1-2) with significant growth rates for timber products (363%), handicrafts (198%) and leather (197%) which, however, started from a very small base. These growth rates have been offset to a great extent by the stagnation, in real terms, of jute goods exports. Other factors that have influenced the rate of growth have been the dominant orientation of Bangladesh's industrial development toward import substitution and the low profitability in some areas of export industry.

Table 1-2: MANUFACTURED EXPORTS
($ Million)

Commodities	Average FY73-FY77	FY78	FY79
Jute Goods	186.1	240.9	267.7
Leather	25.0	43.9	74.7
Timber Products	3.2	7.3	14.8
Special Jute Goods	0.5	1.0	1.5
Handicrafts	0.4	1.7	2.5
POL	3.7	11.3	9.0
Others	0.8	9.1	5.1
	219.7	315.2	375.3

Strategy for Industrialization

1.08 The Government's strategy for industrialization focusses on private sector promotion, export development, and increased efficiencies of public enterprises. The Eighth Imports Program Credit focussed on the development of a comprehensive export policy/strategy, including removal of supply constraints for non-traditional exports, increasing effectiveness of export incentives, and improvement of data collection and analysis necessary to monitor export performance. Public sector units are being given more autonomy to help improve their operational and financial performance and to remove constraints affecting their performance. Moreover, the Government is attempting to rationalize the industrial base with emphasis on efficiency in capacity utilization and domestic resource use, and reorganization and consolidation of the structure of existing public sector units. The Project is an example of these attempts concerning the jute industry subsector.

II. HISTORY OF THE BANGLADESH JUTE GOODS INDUSTRY

Historical Background

2.01 Jute has been grown in the Ganges delta for centuries because Bangladesh has some of the best jute growing lands in the world. While over 30 varieties exist, only two--Corchorus capsularis (white jute) and Corchorus olitorius (tossa jute)--are widely grown. Both cultivation and processing of jute are labor intensive. Fiber from the plant is obtained by retting (steeping) the stems in water and then separating the fiber from the bark by hand.

2.02 The first woven jute fabric was produced in a handloom mill at Serampore in India around 1840. It was soon recognized as a strong packaging medium in the form of sacks, and increasing demand led to the opening of the first power driven mill at Barnagore near Calcutta in 1856. By this time, the major technical difficulties encountered in spinning had been overcome and it became possible to produce finer fabrics (i.e., hessian) for packaging of finer commodities (e.g., sugar) as opposed to coarse sacking for packaging coarser commodities (e.g., foodgrains).

2.03 In Scotland in the mid-nineteenth century, Dundee--having had a long history of flax spinning and weaving--began manufacturing jute goods in power driven mills. By 1920, Dundee operated about 30 mills and was second only to India as a supplier to world markets. Also, other European countries set up their own industries, although they were much smaller with only limited exports. Rapid escalation of labor costs during the twentieth century forced a steady reduction in the number of European jute mills. Now only few mills remain that produce mainly specialized products.

2.04 After World War II, the first serious long-term difficulties developed for the jute trade world-wide because of unreliability of supply and unstable prices. Demand was strong, but transport difficulties and coal shortages in India limited supplies. Consumption was restricted to about 80% of pre-War levels. These difficulties accelerated the search for jute substitutes and gave impetus to efforts to improve techniques for bulk handling of commodities.

1947-1960

2.05 The partition of India in 1947 had a major impact on world jute trade. Prior to partition, India accounted for over 96% of raw jute production, most raw jute exports, 57% of world jute production capacity, and 85% of world jute goods exports. After partition, all 108 mills were located in India, while 71% of the jute growing areas (including the best lands) were in East Pakistan. Most marketing and financial resources were also in India. Therefore, India expanded its raw jute production to replace the raw jute supplies from Pakistan. In 1948-49, India launched a "grow more jute" campaign which--among other things--distributed seeds at subsidized rates, established seed farms, supplied fertilizers, and promoted line-sowing (which is more productive than traditional broadcast sowing).

2.06 On its part, Pakistan decided to establish its own jute manufacturing industry and developed its manufacturing, marketing, and financial capabilities. It gave full support to the jute industry in the Six-Year Development Program (1951-57) and extended to it a package of incentives including--among other things--preferential access to capital, tax concessions, and export incentives. In 1951, the first jute mill, Bawa Jute Mill (privately owned), was established in East Pakistan. In the same year construction started on Adamjee Jute Mill which was, and still is, the largest jute mill in the world with 2,083 hessian and 940 sacking looms in 1979. The industry expanded rapidly; by 1960, 15 mills--with a total of 9,272 looms--were operating. At that time, Pakistan processed 1 million bales of raw jute annually, or less than 20% of its total raw jute output.

1961-1970

2.07 During 1961-70, the U.S. tufted carpet industry expanded rapidly and demand for carpetbacking cloth (CBC) increased substantially. Indian mills were quick to equip themselves to capture this new market and by 1966 had installed and put into production 2,850 broad looms for the manufacture of CBC.

2.08 In East Pakistan during 1961-70, 33 new mills were opened, old mills were extended as fast as the supply of new machinery allowed, and the total number of narrow looms installed more than doubled to 22,250. The first broad loom plant at Adamjee did not come into operation until 1964. However, by 1970 a total of 2,233 broad looms were installed--partly in new broad loom mills and partly in composite mills (having narrow and broad looms).

Effects of the Export Bonus Scheme

2.09 In 1959 Pakistan instituted an export bonus scheme to alleviate its foreign exchange difficulties. A multiple exchange rate system was used to avoid outright devaluation. Under the export bonus scheme, some exports continued to receive the rupee equivalent of export receipts at the official rate; however, for specified items, exporters were given--in addition--bonus vouchers equivalent to a certain percentage of export value. These vouchers could be used to finance imports or sold to others. While the price of vouchers fluctuated, the effective exchange rate for exports was substantially higher than the official rate. Exporters were in effect being subsidized by the consumers of imports financed by the vouchers. The export bonus scheme was used to discriminate against raw jute exports for a decade. Jute goods exporters received bonus vouchers from FY60 on, while raw jute exporters received bonus vouchers only in FY71. Even then, raw jute exporters were entitled to bonus vouchers worth 10% of their export earnings, while exporters of jute manufacturers were entitled to 40%.

2.10 The results of the such discrimination were many. Farmers' incomes were reduced, while jute manufacturers were given a high level of protection. As most manufacturing was controlled by non-Bengalis, profits (estimated at about 10-15% of sales value) were largely remitted to the West Wing. Profit levels apparently remained high, even in periods (e.g., 1968) when value added was negative. There were few incentives to manage mills efficiently.

Production per loom declined from 31.7 tons in FY61 to 27.5 tons per year in FY70, compared to a feasible output level in excess of 55 tons per year. This was in an industry with no material shortage problems.

2.11 On the positive side, the establishment of the jute industry created jobs in an area where employment opportunities were scarce. By the end of the 1960's, the jute industry employed about 150,000 people, and Pakistan's share in manufactured jute exports had risen from negligible amounts to 44%.

1970 - 1980

2.12 The civil unrest that immediately preceded the birth of Bangladesh in 1971 caused complete stoppage in mill production. Non-Bengali mill owners, managers, and supervisory personnel left the country and were replaced by inexperienced management. Moreover, civil disturbances and neglect of maintenance--partly due to lack of spares--resulted in substantial deterioration of the machinery, particularly the more sophisticated spinning frames and backprocessing machines. In 1972, the basic structure of the industry also changed when the Government labeled "abandoned property" 44 of the 77 mills--including some of the largest and best run--and nationalized them. Subsequently, as part of the Government's program to nationalize all medium and large-scale industry, the remaining 33 mills (owned by Bengalis) were nationalized. A holding company, the Bangladesh Jute Mills Corporation (BJMC), was created to run the mills.

2.13 In the years following independence, BJMC's operations deteriorated substantially. Jute mills produced items that raised the least number of problems in manufacturing, rather than those that could be sold. The mills lacked working capital, and their losses and interest burden increased. Subsequently, BJMC, GOB, and foreign aid agencies developed programs to halt any further deterioration and to help bring about improvements.

2.14 Past Investment Programs. In the 1970's, BJMC executed three investment programs. First, BJMC completed programs in 8 mills (i.e., Mymensingh, Dacca, Rajshahi, Sonar Bangla, Nawab Askari, Ashraf, Karnafuli, Delta), which had started prior to independence, but were interrupted in 1971. Completion of these programs cost Tk 140 million (US$9 million) and was necessary to make the previous investments productive. Second, in 1975 BJMC started executing a Balancing, Modernization, and Replacement Scheme for 9 jute mills (i.e., Adamjee, Nishat, Carpeting, M. Rahman, Pubali, Peoples, Daulatpur, W. Rahman, Anowara), which cost Tk 160 million (US$10 million). Since BJMC developed this investment program without an industry wide survey, it is questionable whether it was the least cost solution for the industry (intermill transfer of machinery was not considered) and to what extent the investment was economically and financially viable. Both programs were financed by loans from the government (ADP) through BJMC to the individual mills at 9% for 25 years with a five-year grace period. These two programs are relatively small compared to BJMC's gross fixed assets of Tk 3.2 billion (US$205 million) in FY79 at historical values. Third, BJMC established a plant (Gulfra Habib) for manufacturing spare parts, one trial plant for manufacture of jute plastics, and is in the process of creating two jute carpet factories. These new investments total Tk 104 million (US$6.7 million).

2.15 Foreign Assistance. In the mid-70's, several foreign aid agencies designed complementary assistance programs for the jute industry. From 1974 to 1978, the U.K. (ODA) financed (a) assistance to Adamjee Jute Mills covering organizational matters, process and quality control, material utilization, plant productivity, personnel policies and procedures, training and cost accounting; (b) marketing assistance to BJMC; (c) execution of a mill-by-mill survey to assess the balancing, modernization, and replacement requirements of individual mills; and (d) execution of a jute marketing study which concentrated on raw jute pricing policies. The latter two programs were in conjunction with IDA's assistance (para 2.16). From 1976 to 1980, the Canadian International Development Agency (CIDA) provided technical assistance and machinery for local manufacture of spare parts (Gulfra Habib, para 2.14). From 1975 to 1980, UNIDO/UNDP provided technical assistance through a project manager, who reviewed raw jute purchase and other organizational aspects, a quality control advisor, and a productivity team.

2.16 IDA has been involved in Bangladesh's jute industry since 1975, when it conducted a study that was the basis for the jute industry action program of the Fourth and Fifth Imports Program Credits. These programs focussed on the most urgent problems at that time, i.e., marketing, production planning, and maintenance work. In 1977, sufficient progress had been made to tackle more directly the problems of mill efficiency and profitability. This was the major focus of the action program under the Sixth Imports Program Credit, which broadened the scope of previous efforts and introduced measures to strengthen the organization, management, and financial aspects of BJMC. The Seventh Imports Program Credit focussed on the implementation of pending actions agreed under the previous Credits and introduced a new focus on export development. The impact of the action programs was positive. Since FY75, the jute industry has made substantial progress in strengthening its operating position. Annex 1 shows the present status of the action programs, focussing on the areas of marketing, maintenance, organization and financial management, operational and financial performance.

III. DEMAND AND MARKET ASPECTS

Past and Present World Export Market

3.01 World Consumption of Jute Goods. From the mid-50's to the mid-60's world consumption (excluding China) of jute goods expanded by an average of 4.1% per annum to about 3 million tons. Thereafter, it declined by an average of 1.3% per annum to an estimated 2.7 million tons in 1976 (Table 3-1).

Table 3-1: WORLD CONSUMPTION OF JUTE GOODS
(excluding China)

	Consumption ('000 tons)		Consumption (%)	
	1967-69 Average	1976	1967-69 Average	1976
Developed Countries	1,425	865	49	32
Centrally Planned Countries	230	260	8	10
Developing Countries other than Producer Countries	625	660	21	25
Major Producer Countries (India, Bangladesh, Brazil, and Thailand)	630	880	22	33
Grand Total	2,910	2,665	100	100

This decline reflects a sharp drop of consumption in the developed countries from 1.4 million tons of jute during 1967-69 to .87 million tons in 1976--about a 7% annual decline. The share of developed countries in world consumption declined from 49% to 32%. This decline was mainly due to changes in consumer preferences to prepackaged food, technical innovations in transportation, and handling of agricultural produce, all of which negatively affected the utilization of jute wrapping and sacking materials. High and unstable prices for raw jute and jute goods, uncertain supply and qualities following independence of Bangladesh, and major strikes in India in 1974 were other factors that also led to the use of synthetic substitutes. Textile polyolefins-polypropylene and polyethylene began making significant in-roads into all the major end uses of jute--sacks, bags, industrial cloths, and carpetbacking.

3.02 Consumption in the centrally planned countries increased slightly from 230,000 tons to 260,000 tons, representing 10% of the market. In non-producing developing countries, consumption increased slightly from 625,000 tons in 1967-69 to 660,000 tons in 1976, representing 25% of the market. In producer countries (India, Bangladesh, Brazil, and Thailand), consumption increased substantially from 630,000 tons to 880,000 tons. Thus, the share of producer countries in world consumption increased from 22% to 33%.

3.03 World Trade of Jute Goods. The volume of trade of 1 million tons in 1978 represented 45% of world consumption of jute goods. Trade declined by about 4% annually from 1967-69, faster than the volume of world consumption. This was mainly due to the sharp decline of imports by developed countries from 887,000 tons in 1967-69 to 568,000 tons in 1978. However, the United States remains the major importer of jute goods (mainly carpetbacking), accounting for 28% of all imports in 1978. The share of imports of centrally planned countries declined in absolute terms but remained at around 10% of total world imports. Imports of developing countries also declined slightly in absolute terms, but given the shrinkage of the total world imports, their percentage increased from 26% in 1967-69 to 35% in 1978:

Table 3-2: TOTAL WORLD IMPORTS OF JUTE GOODS BY REGION

	Imports ('000 tons)		Imports (%)	
	1967-69	1978	1967-69	1978
	Average		Average	
Developed Countries	887	568	63	55
Centr. Planned Countries	155	107	11	10
Developing Countries	372	354	26	35
Total	1,414	1,029	100	100

The product mix of exports has not changed substantially over the last six years. In FY74, hessian accounted for 33% of world exports by volume, sacking for 33%, carpetbacking for 20%, and other jute products for 14%. In comparison, in FY79 hessian increased only marginally to 38%, sacking to 35%, carpetbacking to 22%; whereas, other jute products declined to 5%.

3.04 Synthetics. On the other hand, world consumption of polypropylene, which is an important substitute for jute, increased by 20% per annum during 1966-76. Although it has certain technical disadvantages against jute (e.g., has low melting temperatures, is difficult to dye and print, is slippery--which affects handling, stacking, and its utility for secondary carpetbacking--and has less appeal to taste in decorative applications), polypropylene also has certain advantages (e.g., is tougher, water resistant, lightweight, and contours easily). Since technological developments are likely to overcome the technical disadvantages, price competitiveness and reliability of supply will be the key factors in future demand for jute goods. Technological research on jute and development of improved products will also be important.

3.05 Prices. In the past, prices for all major jute goods had been basically in line with those of competing polypropylene fabrics, except from 1971 to 1974 and in the second half of 1979. Due to power shortages and strikes in India and Bangladesh, there was a shortage of jute goods, and their prices were substantially higher than those of competing polypropylene fabrics. As of December 1979, hessian and carpetbacking prices had almost doubled, and sacking prices increased by about one-third as compared to the average of FY79. Since the price of polypropylene did not increase substantially, its competitive advantage improved considerably. For example, in the fourth quarter of 1979, the price for 6-ounce jute secondary carpetbacking was 33¢/square yard (delivered), or 57% above the comparable price of polypropylene fabric, which was 21¢/square yard (delivered). Similarly, for 40", 10-ounce hessian, the price was 34.8¢/square yard, or 81% above the comparable price of polypropylene, which was 19.3¢/square yard:

Table 3-3: PRICE COMPARISON BETWEEN JUTE AND POLYPROPYLENE FABRICS

	actual						projected
	¢/sq. yard						
	1978	1979				1980	1984
		1Q	2Q	3Q	4Q	1Q	(constant ¢)
Secondary CBC (6 oz.) jute (delivered)	15.4	16.4	17.4	24.5	33.0	24.0	24
Comparable polypropylene fabric	16.0	16.8	16.8	18.5	20.6	20.0	25
Hessian -- 40"/10 oz. (Spot NY)	19.9	24.1	25.4	30.7	34.8	34.6	24
Comparable polypropylene fabric	16.7	16.8	17.5	17.5	19.3	19.5	22

However, in 1980 the jute goods supply situation began to improve, reducing jute goods prices substantially.

Past Trends in Bangladesh's Exports

3.06 In FY70, Bangladesh's exports reached a record level of 564,000 tons, representing 44% of the world export market in that year, but fell to a low of 369,000 tons in FY75 (35% of world market). However, in FY76, Bangladesh recaptured part of the market and, thereafter, became the major exporter of jute goods and held about 47% of the world export market. About 85% of Bangladesh's exports are in three markets: sacking, to the developing countries; hessian, to the developed and developing countries; and carpet-backing, to the developed countries, particularly the U.S.A. India is the only other major exporter of jute goods, but has decreased its exports in view of sharply increasing domestic consumption in recent years.

Table 3-4: BANGLADESH SHARE IN WORLD EXPORT MARKET FOR JUTE GOODS
(in '000 metric tons)

	FY70	FY75	FY77	FY79
World Exports	1,147	1,041	963	993
Bangladesh Exports	506	369	464	453
Bangladesh Share (%)	44	35	48	46

3.07 During FY79, BJMC could not take full advantage of a buoyant hessian and carpetbacking market because of production constraints--such as power shortages 1/ and labor unrest--which resulted in exports of only 453,000 tons as compared to 522,000 tons in FY78, a fall of 13%. However, a 28% average price increase raised export earnings from jute goods from US$250 million in

1/ The impact of power shortages could be mitigated by installation of captive power in individual mills. However, GOB considers the scarce foreign exchange to be better spent on improvement of the overall power system.

FY78 to US$268 million in FY79. 1/ As compared to FY78, the product composition in FY79 showed a decline in sacking from 47% to 43% and in "other products" from 3% to 2% (particularly cotton bagging), with an increase in hessian from 35% to 38% and maintenance of the share of carpetbacking at 16%. This demand shift from sacking to hessian is different from previous years, which showed a shift from hessian to carpetbacking, with sacking maintaining its share. Also, since 1969, Bangladesh has been producing lighter fabrics to meet the shift in demand. However, during FY78 and FY79, the product mix between heavy and light cloth remained about the same as in FY77.

Future World Export Market

3.08 Prices. The high jute goods prices prevailing in early 1980 enabled BJMC to make profits for the first time in its history (para. 9.08). While these high prices may enable BJMC to take short-term profits, they may result in long-term losses. Jute might lose part of its market permanently if prices for jute goods remain substantially above those for polypropylene. This would encourage polypropylene producers to invest in additional production capacities. A similar situation existed in 1974 when prices of jute goods increased sharply due to supply constraints, and when jute lost permanently market shares to the polypropylene competition, particularly in primary carpetbacking. A similar danger of permanent market loss also exists for sacking, secondary carpetbacking, and hessian, although these jute fabrics cannot be substituted by synthetics as easily as primary carpetbacking. BJMC and GOB are aware of the delicacy of the situation and were trying to reduce the high prices in early 1980, particularly for hessian and carpetbacking. Although Bangladesh controls about half of the market, lower prices for its own products did not bring the prices down given the shortage. The most effective measure to decrease prices was increased production. Although this was difficult because power shortages and labor strikes are beyond the control of BJMC, BJMC and the Government made attempts to increase production through additional shifts and improved handling of labor disputes. High priority must also be given to improving the reliability of the power system. By April 1980, slightly increased production and a slack in demand due to the upcoming recession in the US have reduced prices for jute carpetbacking slightly below those of comparable polypropylene, but prices for hessian remained at the high level prevailing at the beginning of 1980.

3.09 An FAO study of October 1979 expects polypropylene prices to rise only marginally, although oil prices increased substantially from an average of US$12.7/barrel in the first three quarters of 1978 to US$18/barrel in July 1979 and US$24/barrel in December 1979. Polypropylene prices are not highly sensitive to increases in crude oil prices. A 10% increase in crude oil price would require only about a 2% increase in polypropylene prices to offset the higher cost. Since crude oil prices increased by about 50% from mid-1978 to July 1979, one would theoretically expect a 10% price increase for polypropylene during this period. However, since polypropylene is a basic commodity, its price is subject to wide fluctuations depending on demand and supply

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1/ Calculated in Taka, which includes an 11% appreciation of the £ against the Taka from FY78 to FY79. Export prices are quoted in UK £.

and even varies widely between Europe and North America. In Europe the price increased from US$541/metric ton in the third quarter of 1978 to about US$1,045/ metric ton in September 1979, an increase of 93%. In the U.S., the price increased over the same period of time from US$595/metric ton to about US$639/ metric ton, an increase of 7%. In spite of these wide fluctuations, certain trends can be projected.

3.10 The FAO study points out that polypropylene capacity utilization is well below the desired level of 85% and is expected to remain at that level in the future, since considerable capacity is under construction. Moreover, producers often can absorb cost increases because propylene monomer is produced in an integrated process with another coproduct (ethylene) to which producers can allocate part of the crude oil cost increases. In conclusion, polypropylene prices are projected to increase more slowly than increases in costs of production might indicate.

3.11 Prices for hessian must decrease substantially to compete with synthetics prices effectively. Further easing of supply constraints are expected to decrease all jute goods prices to competitive levels by the middle of 1980. BJMC and IDA project the following average prices for jute goods for FY81 and thereafter:

	Tk per ton		
	Actual	Projected	(%)
	December 1979	Average for FY81 to FY84	Decrease
CBC	25,900	14,000	46
Hessian	19,300	13,000	33
Sacking	10,700	8,000	16

These prices would be low enough to compete with prices of comparable polypropylene fabrics (para 3.05, Table 3-3), yet high enough to enable the Bangladesh jute industry to make adequate profits. 1/

3.12 Quantities. Even assuming competitive prices for jute goods with polypropylene fabrics, the world market for jute goods is expected to increase only by about 2% annually over the next five years because of competition from synthetics and technological changes in handling prepackaged foods. The demand for hessian is expected to increase by about 2% annually, and the demand for sacking is projected to stay at about the 1980 level. The decreasing demand for jute primary carpetbacking is expected to be overcompensated by increasing demand for secondary carpetbacking, resulting in a projected overall annual increase of 2%. Consumption of jute goods in developed countries is projected to decline marginally, which would be counterbalanced by an increase in the consumption of jute goods in developing countries.

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3.13 BJMC's Export and Production Plan. BJMC projects jute goods prices to drop sharply in FY81 (para 3.11), but to remain at the FY81 level until FY84.

1/ Particularly after capital restructuring, which eliminates large interest payments.

At the same time BJMC expects to increase its export volume by 3% p.a., thus increasing its market share from 46% in FY79 (453,000 tons) to 51% in FY84 (566,000 tons). This is reasonable given the high quality of Bangladesh's jute, its relatively cheap labor, and the improved quality of its jute goods. India is expected to continue to sell more jute goods on its internal market, thus limiting exports. European producers are projected to decrease their production in view of rising labor costs.

Table 3-5: PROJECTED BANGLADESH SHARE IN WORLD EXPORT MARKET FOR JUTE GOODS (in '000 metric tons)

	FY80	FY81	FY82	FY83	FY84
World Exports	1,075	1,088	1,105	1,105	1,105
Bangladesh Exports	460	506	529	545	566
Bangladesh Share (%)	43	47	48	49	51
Bangladesh Production	525	550	575	592	615

3.14 Exports of 566,000 tons in FY84 imply total production of 615,000 tons to allow for domestic sales. This is the maximum production BJMC is expected to achieve in FY84, assuming increased production efficiencies partly from rehabilitation, but also continued power shortages and labor strikes. 1/ BJMC's export and production plan appears basically sound in view of historic trends and the present situation. Below is an attempt to assess whether the proposed strategy is close to the optimum.

3.15 Optimal Export/Production Levels. Bangladesh's optimal level of production is mainly a function of (i) the raw jute prices, (ii) the conversion costs, (iii) the sales prices for jute goods, and (iv) the rate of change of these parameters at varying levels of exports (elasticities). In FY79, most mills made financial losses. The level of production maintained in FY79 minimized short-term financial losses, since virtually all mills covered their short-term variable costs. However, from an economic point of view, all mills made profits in FY79 2/. Economic costs of production--which excludes interest, depreciation and half of the wages (shadow wage rates of 0.5)--are substantially lower than the financial costs of production. Moreover, by assuming a shadow exchange rate of 1.25 (Tk 19.4=US$1), economic revenues are 25% higher than financial revenues, though economic raw jute costs are slightly higher than financial costs. By applying the price elasticities -1.2 for hessian,

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1/ In FY84, production capacity would be 736,000 tons. Assuming 84% capacity utilization (similar to that achieved in FY79), BJMC's total production would be 615,000 tons.

2/ Economic profit per ton in the weakest mill for each product was Tk 2,098 for hessian (Meghna), Tk 971 for sacking (Anowara), and Tk 2,094 for carpetbacking (Ashraf). This economic profit is about 15% of sales prices, compared to about 50% financial loss on sales prices of these mills.

-1.1 for sacking, and -1.6 for carpetbacking suggested by ECL consultants (para 6.04), BJMC's economically optimal exports in FY79 would have been 520,000 tons (Annex 2) and optimal production 560,000 tons. At that level the average economic cost of production of the marginal (highest cost) mill would be equal to the marginal economic revenue in hessian, sacking, and carpetbacking based on FY79 costs and prices. In comparison, BJMC's actual exports were only 453,000 tons and actual production only 501,000 tons.

3.16 From FY80 through FY84, the economic and financial parameters are expected to be more favorable than those of FY79. The optimal export level is estimated at 646,000 tons in FY80 and 730,000 tons in FY84 (Annex 2), which is substantially higher than the export targets. During this time, even the highest cost mills are expected to be economically viable in all three product lines. If prices drop substantially more than projected and/or costs rise faster than projected, the highest cost mills may become uneconomic and the question of closure of mills would be considered.

3.17 Optimal Product Mix. BJMC has little flexibility in determining its product mix. First, the structure of the existing machinery limits the product mix. Carpetbacking looms can basically only produce carpetbacking, although Indian manufacturers have succeeded at times to produce hessian cloth on carpetbacking looms, though under additional costs. Conversion of sacking looms into hessian looms is feasible, although certain losses in efficiency result. Such conversion has to be linked to conversion of heavy yarn spinning frames into light yarn (required for hessian) spinning frames, which is feasible but costly. Second, a certain minimum production of sacking (estimated at 25% to 40% of total production) is necessary for utilization of jute wastage and low quality jute. Third, the existing market limits flexibility in product mix. Continuity of supply is essential for maintaining the market. For example, should BJMC stop producing carpetbacking cloth if prices were to drop temporarily below economic costs of production, BJMC is likely to lose that market permanently. In conclusion, BJMC has only little room for determining its product mix strategy. However, BJMC is adapting its product mix periodically within existing flexibility to maximize financial and economic profits. While in the past five years sacking made the least financial losses and carpetbacking had the best growth chances, BJMC projects hessian to bring highest profits in FY84 (Tk 1421/ton) and to have the best growth potential (8% p.a.) based on strong demand in early FY80. BJMC would also attempt to increase its exports of carpetbacking from 75,000 tons in FY79 to 99,000 tons in FY84, about 6% per annum, since expected profits for carpetbacking are Tk 730/ton in FY84. BJMC would maintain its production of sacking with a projected loss of Tk 355/ton in FY84. BJMC more than covers its variable costs on sacking, which justifies continued production. Should the slump in demand for sacking during FY80 turn out to be only temporary, BJMC would make profits also in this line in the future. In any case, the projected exports are below the projected optimum level in each product line (Annex 2). BJMC would continue to review its strategy and seek for measures to make all product lines profitable. The proposed product mix appears reasonable under the circumstances and involves only minor adjustment costs for the structure of the machinery, by converting some sacking looms to hessian.

Table 3-6: PAST AND PROJECTED BANGLADESH EXPORT SALES
tons ('000)

	Actual			Projected				
	FY77	FY78	FY79	FY80	FY81	FY82	FY83	FY84
Hessian	156	185	172	184	197	218	230	247
Sacking	214	244	197	182	213	213	213	213
CBC	72	76	75	85	89	91	95	99
Others	22	17	9	9	7	7	7	7
Total	464	522	453	460	506	529	545	566

3.18 The optimal product mix and the optimal export/production level are very sensitive to changes in raw jute prices, conversion costs and sales prices, which fluctuate widely. GOB and BJMC have a certain influence on these parameters, given that (i) BJMC consumes about one-half of the raw jute crop of Bangladesh; (ii) Bangladesh's export of raw jute constitutes about 80% of world exports; and (iii) BJMC holds about half of the world export market of jute goods. Therefore, a half-yearly review and the elaboration of a strategy for optimal product mix, export levels, and pricing of raw jute and jute goods is essential.

3.19 At present, the Ministry of Jute and BJMC are closely monitoring historic prices and exports of raw jute and jute goods. A price advisory committee decides on policy measures concerning raw jute such as the Statutory Minimum Price, the level of export tax, and the Minimum Export Price. A different price advisory committee that meets quarterly determines the jute goods export prices and desired production levels. However, these decisions are mainly based on past developments and not on an in-depth analysis of likely future developments resulting from alternative policy measures. Therefore, GOB has agreed to create by December 1980 in the Ministry of Jute (Chart 1) a special cell that would attempt to develop, and update half-yearly, a medium-term optimal price and export plan for raw jute and jute goods, taking into account the interdependence of quantities of raw jute and jute goods exports from Bangladesh, their relative price elasticities, the level of the raw jute export tax, etc. The staffing and functions of such a cell have been discussed and agreed with GOB.

3.20 Research and Development. To expand the limited world market for jute goods, Bangladesh should continue to develop new fields of application for jute goods and make further efforts in research and development. Some promising developments have occurred in the cultivation and processing of jute. Advances--as supported under the jute project (Appraisal Report No. 1587-BD of December 29, 1977)--have been made towards high yielding varieties and towards better retting procedures. Moreover, UNDP finances an advisor to the Jute Research Institute in Bangladesh. BJMC is investigating the feasibility of jute plastics production in a pilot plant. An application of jute for clothing by merging it with cotton (jutton) is presently being studied under an IDA-financed technical assistance project. BJMC has invested in two new mills that are to produce jute carpets, a relatively new product. Two additional units are considered to be set up in the private sector. Strengthening of

marketing and promotion efforts is also underway with technical assistance from ODA/UK. BJMC has taken steps to increase the number of overseas sales offices and the staff.

IV. RAW MATERIAL SUPPLIES AND PRICES

4.01 BJMC's major raw material is jute, which represents 50%-65% of the total production cost. In FY80, the 525,000 tons of jute goods projected to be produced by BJMC will require about 3 million bales of raw jute 1/ which is about half of Bangladesh's annual jute crop (5 million to 7 million bales, depending on weather conditions and the acreage sown). Virtually all the other raw jute is exported. Over the past six years the raw jute exports ranged from 1.7 million bales (FY78) to 2.3 million bales (FY76), and stock-keeping in Bangladesh ranged from .2 million bales (FY78) to 2 million bales (FY76).

Table 4-1: BANGLADESH: RAW JUTE PRODUCTION, SALES, STOCKS /a
(million bales)

	FY76	FY77	FY78	FY79	1980 /d
Total Supplies	6.0	5.7	5.7	7.4	7.8
Stocks (beginning period)	2.0	1.0	.2	.7	2.3
Production	4.0	4.7	5.5	6.7	5.5
Total Distribution	5.2	5.5	5.0	5.1	5.6
Exports	2.3	2.3	1.7	2.0	2.3
Mills consumption	2.7	2.9	3.1	2.8	3.0
Other /b	.2	.3	.2	.3	.3
Stocks (end-period)	.8	.2	.7	2.3	2.2
Mills	.5	.1	.5	.8	1.0
Other /c	.3	.1	.2	1.5	1.2

/a Estimates.
/b Growers consumption and losses.
/c Public trade corporations, private traders and producers (residual includes errors).
/d Provisional.

4.02 FY80 projections, based on sowing reports, indicate a jute growing area of 1.8 million acres (including 300,000 acres affected by drought) with a projected crop of about 5.5 million bales which would be 20% less than last year's crop. In spite of the low production, the raw jute price remained sluggish in the first half of FY80, mainly on account of a large carryover

1/ Three million bales are 536,000 tons. Thus eleven thousand (11,000) tons would be wastage.

of 2.0 million bales in July 1979, of which BJMC held 0.8 million bales, and the public and private traders the rest. As a result of the drought and insufficient retting water, a large part of the crop was low quality jute which sent the price to Tk 40/maund in October 1979, less than half the statutory minimum price of Tk 115/maund. However, the price for high quality jute (Tossa) remained high at about Tk 190/maund, so that BJMC's average stockholding price was Tk 133/maund. Given an anticipated carryover of 1.7 million bales, average raw jute prices are projected for FY81 to remain at about the FY80 level (para 9.11).

4.03 In the past, the mills had three major problems--which have since been eliminated--in raw jute procurement. First, in FY77 the mills were unable to buy sufficient quantities of raw jute directly from the jute growing areas due to shortage of working capital. Upon GOB instructions, the commercial banks now provide timely credit to mills so that they can build up their stocks in December to a level equal to six month's production, which is adequate. Second, prior to 1977, the mills' raw jute purchases were completely decentralized. Some mills would compete with each other (in addition to competition with private traders), and in some cases, the mills were not able to buy sufficient raw jute. Therefore, in 1977, BJMC appointed a director of raw jute purchase, who created 200 purchasing agencies in jute growing areas. BJMC now centrally monitors the jute purchases by the mills, who are now able to compete effectively with private traders. Third, during FY78, GOB interfered in the purchasing policy of the mills and asked them to adhere to a maximum purchasing price, which private traders ignored. As a result, the mills could not buy sufficient amounts of raw jute, but had to buy more later from private traders at substantially higher prices.

4.04 In an attempt to develop an acceptable pricing structure for raw jute and to arrive at a realistic allocation of raw jute between the mills and exports, Economic Consultants Limited (ECL) did a study on raw jute marketing and pricing mechanisms for GOB. ECL's recommendations, submitted to GOB in February 1979, included proposals for reorganization of raw jute marketing and the development of an export strategy and optimal pricing structure. Many of the proposals have been discussed and agreed upon with GOB and the proposed cell within the Ministry of Jute (para 3.19) would monitor implementation and further improve policy measures towards raw jute pricing, production and exports.

V. ORGANIZATION AND PROCEDURES

Background

5.01 The Project would focus on the rehabilitation of jute mills and on institutional upgrading of the organization and procedures of the jute industry. At present there are 66 jute mills, 2 manufacturing units (accessories and spares for jute machinery), a jute plastics plant, and 2 additional jute carpet mills (to come on stream in 1980), all of which are fully owned by GOB and supervised by the Bangladesh Jute Mills Corporation (BJMC) which was established in 1972 (para 2.12). BJMC is a Government corporation under the authority of the Ministry of Jute. Six specialized jute mills have been disinvested in the past, but there are no proposals currently under discussion for further disinvestment of jute mills.

Management

5.02 A Board of Directors, appointed by GOB, manages BJMC. The Chairman of the Board is the chief executive of BJMC. The other Board members are the 6 operational directors of BJMC. The present chairman was appointed in early 1979 and is expected to remain in his post for at least 3 years. GOB's new policy to view the chairman's position as a medium term appointment allows the chairman to play a more effective management role. Up to 1976 BJMC's chairmen remained on average less than 1 year. With the exception of the finance director, who was appointed in September 1979, and of the marketing director who was appointed in early 1980, BJMC's directors have been in their positions either since the establishment of BJMC or since creation of their respective departments within BJMC, so that there is sufficient continuity in BJMC's management.

5.03 The competence and qualifications of BJMC's management are adequate. Its effectiveness will be further improved in the wider context of the project. The proposed reorganization (para 5.05) would relieve BJMC's management from too much detail and would enable it to concentrate on the broader issues. Moreover, a management information system (para 5.26) for effective data collection, processing, and a systematic review of mill performance is being implemented.

Organization

5.04 Chart 2 shows the present organizational structure of BJMC, which has six departments at headquarters that provide the central administration to all mills. Each department is headed by one director. Also, BJMC has four zonal offices--two in Dacca, one in Khulna, and one in Chittagong, each headed by a general manager. Each zonal office has on average 17 mills, which is too many for effective supervision. Zonal offices have only an advisory function: their main activity is data collection and serving as a contact point between the mills and the head office. Each mill has a board of directors, which supervises its activities. However, the mill boards supervise mills inadequately, since they have met on average only every three months. Each mill board has one of BJMC's directors as a member. Given that

there are 6 BJMC directors for 66 mill boards, it was not practical for them to meet more often. The membership of BJMC's directors on the mill boards has added to their already heavy workload.

5.05 To eliminate these shortcomings ECL/PA consultants made a proposal in the framework of their jute sector study (para 6.04) for BJMC's and the mills reorganization. In June 1979, a GOB Study Group somewhat modified the proposal, which now consists mainly in (i) increasing the number of zonal offices from 4 to 9 thus reducing the average number of mills in each zone to 8; (ii) giving to zonal general managers full responsibility for the performance and supervision of the mills and direct line authority over mill managers; (iii) streamlining the organization of BJMC's head office. The regrouping of jute mills is shown in the Map and the proposed organization of BJMC's head office in Chart 3.

5.06 The new zonal general managers will visit, inspect and review each mill at least once every two weeks. In order to minimize travelling time, the zonal headquarters are located as close to the geographical center of each zone as possible. Each zone will have six experienced deputy general managers responsible for all operational aspects except for exports which are centrally controlled by the marketing division of BJMC. They are to assist the zonal general manager but will not have authority over mill management. The proposed basic line responsibility of the zonal general manager would be to the chairman of BJMC, but BJMC's directors will continue to exercise supervisory control within their functional responsibilities.

5.07 The mill boards will be replaced by an Executive Committee which will be chaired by the zonal general manager and will include the mill manager (who also acts as secretary of the committee), the zonal chief of the accounts department, the mill production manager, and the mill technical manager. Conceptually, the mill manager is to be the chief executive of the mill with all the necessary powers and authority.

5.08 Within the BJMC Head office, the directorate of research and quality control and the directorate of production planning will be merged into a directorate of planning and research, and a directorate of production and quality control. BJMC's chairman will be relieved from supervising the now unwieldy chairman's department, whose functions will be divided between a new directorate of administration and the secretary of BJMC. Internal audit will be allocated to the director of finance. Vigilance and the inspection team will remain directly under the chairman.

5.09 The proposed reorganization of BJMC and the mills is sound. It would delegate authority to zonal general managers, thus relieving BJMC directors from day-to-day mill affairs and ensuring proper supervision of mills. The proposal has been approved by BJMC's Board and is likely to be approved by a GOB interministerial committee in mid-1980. While the proposal clearly spells out the major features of the reorganization, the detailed implementation, including staff transfer from headquarters to zonal offices, and a review of functions, procedures, and staffing of headquarter offices, needs to be prepared. BJMC agreed to employ a management consultant for

preparing the detailed implementation of the reorganization by September 30, 1980 and to have the new organization in place by September 30, 1981. Terms of reference are attached in Annex 3.

Staff

5.10 At the end of FY 1979, BJMC's staff was 1,067 of which 864 were working at the headoffice, 96 in the branch offices in Chittagong and Khulna, and 107 in the 4 zonal offices (Dacca I, Dacca II, Chittagong, Khulna).

Table 5-1: SUMMARIZED POSITION OF EXISTING PERSONNEL IN BJMC

	Existing			Sanctioned		
	Officers	Other	Total	Officers	Other	Total
A. Head office						
Chairman's Department /a	122	225	347	61	206	267
Finance Department	61	73	134	148	169	317
Technical Department	41	80	121	73	198	271
Marketing Department	75	78	153	79	90	169
Production Planning Department	27	40	67	16	26	42
Research and Quality Control Department	8	15	23	6	11	17
Jute Purchase Department	6	13	19	5	18	23
Total	340	524	864	388	718	1,106
B. Branch Offices /b	16	80	96	-	-	-
C. Zonal Offices	68	39	107	80	140	220
GRAND TOTAL	424	643	1,067	468	858	1,326

/a Includes the audit division (129 staff) which will be transferred to the Finance Department.
/b Under authority of the Technical Department.

The jute mills employ 23,260 staff of which 4,490 are officers.

5.11 BJMC is on the whole properly staffed. However, there are weaknesses in the cost and budget section in the finance department (paras 5.23 and 5.24). The major problem is staff quality rather than quantity. Compared with the private sector and employment opportunities abroad, particularly in the Middle East, BJMC's salaries (set by GOB) are low and make it difficult to attract and retain qualified personnel (particularly engineers and accountants), although a recent 30% increase of the salary scales for all public sector employees improved BJMC's competitiveness as an employer. The proposed reorganization would not require additional staff, since functions and staff from headquarters would be delegated to the increased number of zonal offices.

Workers

5.12 BJMC's jute mills employ approximately 205,000 workers of which 143,000 regular workers, 61,000 badlis 1/ and 1,000 temporaries. The workers are rated in four skill categories, which determine the basic wage.

Table 5-2: SKILL AND WAGE CATEGORIES OF JUTE MILL WORKERS

Skill Category	Number of Workers	Basic Wage Taka/Month
Highly skilled	3,000	370
Skilled	86,000	335
Semi-skilled	32,000	285
Unskilled	22,000	270
	143,000	

62% of the workers are either skilled or highly skilled, 22% semi-skilled and 16% unskilled. The total wage differential due to skill is 37% and the steepest increase between individual categories is 18% from the semi-skilled to the skilled workers. In addition to basic wages, workers receive fringe benefits, such as housing, medical and conveyance allowances, festival bonus (one additional monthly salary), 14 days sick leave, 10 days casual leave, and one day annual leave for each 18 working days. In total, monetary fringe benefits amount to about 50% of basic wages. Also,the mills provide low cost housing, often on the mill site, for about 10% of the workers. The number of workers employed decreased from 153,000 in 1972 to 132,000 in 1975, remained constant until 1977 and increased to 135,000 in 1978 and 143,000 in 1979. The recent increases became necessary because (i) increasingly frequent power failures require additional personnel to make up for production losses (40,000 tons in FY79; 15,000 tons from July-October 1979) in extra shifts; and (ii) higher production targets and lighter fabrics require the activation of additional weaving looms (about 2,100 from 1977-79).

5.13 Several active and influential unions represent the jute mill workers in their dealings with management. Labor unrest is common, but generally focusses on issues related to individual mills. BJMC estimates that production losses due to labor unrest in FY79 were of the order of 20,000 tons. Wages in the public sector, which are reviewed by a wage commission, were raised in November 1978 and May 1979 by a total of 44% based on the pay level of 1974 and payable retroactive from July 1, 1977. The increase represents an average annual increase of 8.8% during the five years from 1974-79 compared to an annual inflation of about 7% for the same period.

5.14 Absenteeism of workers, which reaches up to 30% during the harvest season, is a minor problem. It is basically dealt with by the system of

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1/ Badlis are stand-by workers, appearing every morning at the mill site and ready to fill temporary vacancies due to leave, sickness, and absenteeism. Their level of skill and experience is comparable to that of the regular workers.

having temporary workers (badlis) fill the vacancies (para 5.12 footnote). Moreover, BJMC intends to increase its social facilities, i.e., mill-site housing, schools and medical facilities, in order to settle more workers and their families in the immediate neighborhood of their work-place. Progress will be slow because absenteeism is a structural problem of Bangladesh's economy, given that more than 50% of the workers continue to have a stake in agriculture and leave mills during the agricultural peak seasons.

Incentive Systems

5.15 In FY78, BJMC designed three incentive systems to reduce absenteeism and increase productivity: an attendance bonus scheme, and two other schemes designed to improve production. These schemes were not particularly effective and they are being reviewed at present, to bring about appropriate changes.

5.16 BJMC has a piece wage rate, for its weavers and finishers, who account for about 60% of all workers in the mill. A substantial wage increase in FY79 (para 5.13) has increased the productivity and lowered absenteeism. However, workers in the spinning and preparing departments, who are key workers in the production line, are paid a flat daily rate. As a result, there is no incentive for them to increase production or to improve their attendance record, particularly since the average wage of a spinner is lower than that of a weaver. As part of the proposed project, BJMC would install scales for weighing spinning production (para 6.09). This would enable implementation of an incentive scheme for spinners to reward individual productive efforts (and calculation of accurate spinning efficiencies, which at present are not available in any mill). An incentive scheme for back processing personnel would be linked to spinning production by paying them the average spinning bonus earned in their appropriate section, i.e., light yarn spinning or heavy yarn spinning. BJMC agreed to employ a consultant by September 30, 1980 to review and prepare a production incentive scheme particularly for workers in the spinning and back processing departments. After review of the consultants' report GOB/BJMC would adopt such scheme by January 1, 1982.

Training

5.17 Past Training. In 1973 BJMC started several training programs which included training of in-mill supervisors, managers and BJMC staff in Bangladesh and abroad. Up to 1977, BJMC trained only 1,159 employees. However, in connection with the Action Program under the Sixth Imports Program Credit, BJMC englarged and diversified its training programs and trained 2,846 employees from 1977 to August 1979. These training programs were well received by BJMC's staff and were successful to upgrade their skills. However, they were still rather limited in scope, particularly concerning workers and their supervisors.

5.18 Proposed Training Centers. In 1979, BJMC again reviewed its training needs in the light of a proposal made by ECL/PA consultants in the framework of the jute sector study (para 6.08) and proposed to set up nine training centers, one in each of the proposed nine zones for on-the-job training of

supervisors, process workers and mechanical personnel. Three of the training centers would also concentrate on training management personnel, thus supplementing existing training of BJMC personnel at management institutes in Dacca and abroad. The centers would be set up in existing facilities like schools, clubs, etc., which would require a minimum of additional construction. Only two training centers would be located in completely new facilities. The proposed location would permit easy daily travel for attendants from surrounding mills, except in one zone where dormitory facilities will be constructed. The training centers would be equipped with surplus machines from the mills.

5.19 At headquarters, BJMC would set up a separate training division to concentrate on design and administration of courses. It would be manned by a general manager, manager, training officer, and six subsidiary employees. Training departments at the zonal offices, staffed by a manager, training officer, and three office personnel, would be in charge of executing and administering the actual training in the training centers. Trainers would be selected mainly from experienced mill officers and supervisors. At the mill level, a senior member of the mill's management would implement and administer the training program for the mill in addition to his normal duties, and he would receive extra payment for it.

Internal Audit

5.20 After years of understaffing, BJMC's audit is adequately staffed. Sixteen audit teams (for 72 units) execute two rounds of account audit and one round of inventory audit per year and mill. The audit division also audits the head office account. With increased staff the internal audit division was able to almost catch up with current financial statements of mills. As of the end of 1979, the internal audit of FY78 is practically complete and for FY79 all inventories and about half the accounts have been audited and completion is expected in June 1980. Under the proposed reorganization (para 5.08), the audit division will be transferred from the chairman's department to the finance directorate. This is acceptable, because most of the audit work is related to individual mills, so that there is no conflict of interest within the directorate of finance.

External Audit

5.21 External auditing of the jute mills and the head office, although improved, continues to be behind schedule, mainly because of a general shortage of external (private) auditors. The audits of FY76 and FY77 are now virtually complete. For FY78, 48 final reports (out of 72) have been issued. BJMC agreed to gradually reduce the backlog of audits according to an agreed schedule, so that its own accounts and those of each individual mill are audited within six months of the end of each fiscal year starting with FY81.

Cost Accounting

5.22 While the present system shows the total cost of each product (i.e. hessian, sacking, and carpetbacking), it does not provide for actual and standard costs of the products at various stages of processing. Thus

it is not an adequate tool for cost control. The action program of the Fifth Imports Program Credit initiated the development of a Process Accounting System (PAS), which was designed by EWP consultants of Dacca under an ODA grant. The PAS has created four production cost centers (back processing and spinning, winding, weaving, and finishing), and a number of auxiliary cost centers, (power house, mill workshop, etc.), for the overhead. With PAS, the actual cost for each product (fabric costing) is compared with the standard, and variations need to be explained by the head of the cost center. BJMC is currently testing PAS in two mills (Bangladesh Jute Mills and Jessore Jute Mills) to allow, if necessary, for appropriate modification. Reception of PAS at the mill floor level has been cool. This is not surprising, since PAS introduces tighter control than the existing system. Although PAS may require slightly more staff, the improved cost control is expected to justify the additional expenditures. BJMC agreed to implement PAS in all mills starting July 1, 1981 (the beginning of the fiscal year).

Consolidation of Accounts and Financial Planning

5.23 Consolidation of the mills' accounts and BJMC's financial planning could be improved substantially. Presently, BJMC's accounts and the consolidated mills' accounts for the past 4 years are provisional. Wage increases retroactive to 1976, disinvestment of units often involving legal claims, and the final allocation of GOB subsidies to the mills make the accounting unusually difficult. However, in spite of these difficulties, BJMC should be able to provide consistent, comprehensive consolidated financial statements three months after closing of books.

5.24 Also, BJMC's budgetary process needs to be improved. Individual mills prepare annual budgets along guidelines established by BJMC, which eventually has to approve the budget. The budget has three elements, i.e., the cash budget, the revenue budget, and the capital expenditure budget. BJMC's head office consolidates the budgets in part to determine the total foreign exchange requirement for capital expenditures, (development budget), and spares as well as materials procured abroad, (non development budget). Often the approved budgets underestimate costs and overestimate revenues with no adjustments during the year, in most cases. Further, mills compare actual monthly performance with the budget by dividing the latter by 12, which makes the control process meaningless, since it does not take account of seasonal variations. Moreover, BJMC and the mills do virtually no medium term financial planning. To improve the consolidation of BJMC's and the mills' accounts, and BJMC's financial planning, BJMC agreed to employ a professional accountants firm for a two year period by December 31, 1980. Terms of Reference are in Annex 4.

Management Information

5.25 The present management information system does not provide an adequate basis for management control. At headquarters, data collected is often insufficiently focussed on relevant aspects and data are not processed adequately, partly because data is incongruent and overly voluminous. At the

mill level, not all the information generated periodically is presented to the mill managers in time and in an orderly fashion to allow identification of problems and corrective action. Moreover, the requests for increased data from headquarters puts an increasing burden on the mills.

5.26 Under the action program for the Sixth Imports Program Credit, EWP consultants developed a Management Information System (MIS). It reduces and standardizes the information flow from the mills to BJMC. The number of proformas has been reduced from about 200 to about 60. The MIS has been tested in 4 mills, where it has been well received. BJMC has formally decided to implement the MIS.

5.27 At present, MIS does not provide for (i) aggregation and analysis of the mills' production information, (ii) consolidation of the production information with raw materials purchase, and sales information, and (iii) standardization of information flow within BJMC, including monthly reporting to the Board. The MIS should be extended to cover these areas, (initial steps in this direction have already been taken, para 5.28), and EWP consultants could carry out this work. BJMC agreed to hire a consultant by September 30, 1980 to extend the proposed MIS to also cover information flows at headquarters. Financing for the management study (para 5.09), the production incentive consultant (para 5.16), the professional accountants firm (para 5.24), and the MIS consultant is provided under the proposed credit.

5.28 BJMC has started a system of monthly operational reviews, which are discussed by the Board of Directors. They monitor mill performance concerning production, loom output per hour, wastage, production costs, (including jute cost), export sales rates, and profitability. Annexes to the reviews include consolidated cumulative income statements from the beginning of the financial year up to the reporting month and the cumulative profit or loss of each mill. Each monitoring category lists the worst and the best performer. Also, target figures are compared with actual performance, although only on a consolidated basis. After evaluation, the Board decides on follow-up actions with respect to the worst mills. The monthly operational reviews are an excellent start for effective monitoring of mill performance and for taking corrective steps. Once the new zonal offices are operable, with their general managers in place, the zones would execute such reviews.

VI. THE PROJECT

Project Origin and Evolution

6.01 One major objective of the action programs under the Fourth to Seventh Imports Programs Credits (para 2.16 and Annex 1) and of the Project is to increase the production efficiency of the industry, which is estimated to have considerable potential for improvement. Some principal causes of low production efficiency are: (i) the poor state of equipment, (ii) unbalanced capacity; (iii) shortages of skilled labor and management--which is closely related to the first problem; and (iv) large scale absenteeism, power shortages, and labor unrest. While production efficiencies have improved (e.g.,

weaving from 43% in FY76 to 53.6% in FY79 1/), further improvements are possible and necessary.

6.02 The poor state of equipment, which was observed during a survey initiated by IDA in 1975, prompted BJMC to organize maintenance task forces (MTF) to improve maintenance and spare parts utilization. As a result, standards of routine maintenance throughout the industry have improved over the past three years. Also, availability of foreign spare parts--financed from the Import Program Credits--and of local spare parts has improved considerably. However, large scale and intensive rehabilitation, particularly of mill side machinery, 2/ is important to improve production efficiency further.

6.03 The major bottleneck for increased production and for more efficient use of the existing weaving equipment is that the spinning departments of the mills have not been able to produce yarn in sufficient volume and quality to permit looms to operate efficiently. One reason is that there was a continuing shift to lighter fabrics for market reasons. While this shift slowed down in FY79, the imbalances created during the previous years are still a serious problem. Lighter yarns require more spinning time than heavy yarns; as a result, the relationship between spinning equipment and weaving equipment has changed, requiring more spinning equipment to keep a fixed number of looms operating. Another reason is that two of the three makes of spinning frames installed in Bangladesh are relatively inefficient and need modification in order to increase their output (these frames are no longer marketed).

6.04 Economic Consultants Limited (ECL)--as part of the Sixth Imports Program Credit action program and paid by ODA/UK--executed a mill-by-mill survey (Jute Sector Study) to assess balancing, modernization and replacement (BMR) requirements of the jute industry. They submitted their report in December 1978. A GOB interministerial study group reviewed the report and submitted papers with a modified proposal in June 1979. The proposals, embodied in the Project, aim at minimizing investment in view of the marginal financial viability of the industry, the high cost of new machines, and low labor cost in Bangladesh. The Project concept is based on the following principles:

(a) balancing of machinery on an industry wide basis (instead of by individual mills); intermill transfer of machine surpluses in some mills would, to a certain degree, offset deficiencies in others, thus saving considerable investment;

(b) three-shift working of the spinning and backprocessing departments would increase spinning capacities sufficiently to avoid purchase of new machines and allow utilization of the most

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1/ Spinning efficiencies have also improved, but figures are not available since spinning production is not weighed at present. BJMC has agreed to install an adequate number of scales to enable weighment.

2/ Winding, spinning and back processing machines as opposed to looms.

efficient machines (Mackies), thus avoiding major rehabilitation of the most inefficient machines (FLCB and FLTM); at the same time, major intermill transfer of machinery would be avoided;

(c) utilization of domestic spares for rehabilitation to the extent possible, given the high cost of foreign spares.

6.05 Thus the Project aims at making best use of existing equipment in Bangladesh, thus reducing to a minimum investment requirements. The intermill transfer of machinery should not pose any problems, since BJMC has transferred some machines in the past. Also, three-shift operation of the spinning and backprocessing departments would not pose any problems. At present, BJMC operates satisfactorily three shifts of spinning and back processing in all CBC mills and in 12 narrow loom mills, and should meet no major difficulties in doing so in the remaining 40 mills. Moreover, local production of spares has improved in the past years, and BJMC can save valuable foreign exchange and provide domestic employment by purchasing domestic spares to the extent feasible.

Project Objectives

6.06 The objectives of the project are to (i) increase the technical production efficiency through rehabilitation and maintenance, and balancing of existing production facilities; (ii) continue to improve the organization, management, and finances of the jute industry through reorganization, incentive systems, and training programs.

Project Description

6.07 The proposed credit would be for two purposes: (A) financing of a rehabilitation project consisting of (i) rehabilitation of light yarn (i.e., hessian warp, hessian weft, and sacking warp), winding, spinning and back processing machinery, coupled with the introduction of a third shift (from existing two-shift operation) in these departments of 40 narrow loom mills; (ii) intermill transfer of 41 machines from mills with surplus machines to those with deficiencies; (iii) provision for precision dial-type scales for weighing spinning production in each mill; (iv) establishment of training centers; (v) reorganization of the industry; and (vi) introduction of a management information system and a new accounting system; and (B) financing spares for regular and preventive maintenance of all machinery.

VII. PROJECT COST AND FINANCING

Project Cost for Rehabilitation

7.01 The cost estimate for rehabilitation is based on a detailed mill-by-mill survey executed from 1976-79 by the Maintenance Task Force (MTF) by stripping down machinery in each mill and assessing which parts need replacement. The MTF recorded for each mill: (a) the type of machines installed

listed by maker, type, and age; (b) the number of machines of that type in each group ; (c) an itemized list of spares for that machine type; (d) the source of supply--local or foreign; (e) the numbers required of each spare item; and (f) the cost in taka or dollars according to source. A mill may have up to 25 different machine groups, each requiring approximately 200 separate spare items ranging from tens to thousands of units. The cost of required spares, which the MTF assessed at 1977 prices, was increased by 31.5% to cover price increases from 1977 to 1981, when last delivery is expected. This is in line with past and expected inflation for this period of time at an average of 7%. The import component of the required spares for rehabilitation is estimated at 62%, with the other 38% produced domestically. The c.i.f. cost for the weighing scales is estimated at 1980 prices since procurement is expected in 1980. The cost for training centers is based on detailed cost estimates on civil works. Completely new facilities will be constructed in two zones, and a dormitory facility for trainees will be built in one zone. The other zones would use existing facilities like schools and clubs with a minimum of additional construction.

7.02 The total rehabilitation cost is estimated at Tk 262.9 million (US$16.98 million):

Table 7-1: TOTAL REHABILITATION COSTS

	Taka Millions			US$ Millions		
	Foreign	Local	Total	Foreign	Local	Total
Spares	127.0	78.0	205.0	8.20	5.00	13.20
Scales	3.9	0	3.9	0.25	0	0.25
Training	0	2.0	2.0	0	0.13	0.13
Consultants	5.4	.8	6.2	0.35	0.05	0.40
Sub-total	136.3	80.8	217.1	8.80	5.18	13.98
Taxes, duties, etc. calculated at 35% of foreign cost (except consultants cost)	0	45.8	45.8	0	3.00	3.00
TOTAL	136.3	126.6	262.9	8.80	8.18	16.98

Annex 5 shows that the estimated rehabilitation cost for individual mills range from Tk 24 million (US$ 15,600) for Eastern Jute Mill to 43.5 million (US$2.8 million) for Adamjee Jute Mills (which consists of five individual mills). The cost of the proposed rehabilitation is relatively small, representing only about 4% of the mills' total assets of Tk 5.9 billion. BJMC presently is not considering any other major investment programs, except normal improvements of civil works at the mills and two new jute carpet mills totalling about Tk 300 million (US$19.4 million). The proposed relatively small investment program is reasonable given that the industry has limited growth potential. The total rehabilitation cost minus taxes and duties is estimated at Tk 217.1 million, or US$13.98 million. The proposed credit for rehabilitation would amount to US$10.4 million, or 75% of total project cost excluding taxes.

Financing of Maintenance

7.03 The maintenance requirements for spare parts for the jute mills has been about Tk 300 million (US$20 million) annually over the past two years. About 40% of the total supply has been met from imports; and the balance of 60% from local sources.

7.04 BJMC estimates the spare parts requirements for the next five years at Tk 350 million annually. BJMC projects that the percentage of locally produced spares will gradually increase from 63% in FY81 to 77% in FY85 (Table 7-2) as a result of increased and improved domestic production of spare parts.

Table 7-2: ACTUAL AND PROJECTED UTILIZATION OF LOCAL AND FOREIGN SPARES FOR MAINTENANCE

Period		Local Spares	Imported Spares	Total	% of Total Local	% of Total Imported
		(In Taka million)				
FY77)	actual	143	127	270	53	47
FY78)		202	117	319	63	37
FY81)		220	130	350	63	37
FY82)		240	110	350	69	31
FY83)	projected	260	90	350	74	26
FY84)		270	80	350	77	23
FY85)		270	80	350	77	23

The average imports of spares would amount to Tk 110 million per annum (US$7 million). Over a three-year period, total imports would be around US$21 million. The proposed credit would include US$9.6 million to finance about half of the imported spares and equipment for regular and preventive maintenance over the next three years. The other half is likely to be financed from bilateral sources, as in the past. This would allow continued IDA financing for part of the imported maintenance spares, which had been financed by previous imports program credits but had been excluded from the Eight Imports Program Credit in anticipation of the inclusion of these funds in this proposed credit.

Financing Arrangements

7.05 IDA would make the proposed credit of US$20 million to the Government of Bangladesh. However, the onlending arrangements for rehabilitation would be different from those for maintenance. For rehabilitation, GOB would make loans to individual mills (for spares and scales) and to BJMC (for training and consultants) totalling up to US$10.4 million at 12% interest per annum for ten years including a three year grace period. 1/

1/ The expected life of rehabilitation is 7 years, and the maximum implementation time 3 years.

Individual mills would finance the other US$6.6 million equivalent of the project cost, including duties and taxes from cash which jute mills are expected to generate partly as a result of lower interest burdens due to the agreed capital restructuring (paras 9.14 to 9.16). For maintenance, GOB would provide the foreign exchange up to US$9.6.million which individual mills would buy from GOB through the Bangladesh Bank with cash from their working capital. The same procedure is used under the Sixth and Seventh Imports Program Credits.

VIII. PROJECT IMPLEMENTATION

Project Management

8.01 BJMC's technical directorate will exercise overall control and supervise coordination of the project through zonal offices. Mill managers will be responsible for implementation of rehabilitation and maintenance in their own mills. Maintenance has improved substantially over the past three years and mills would be capable to execute the rehabilitation adequately. As quickly as receipt of necessary spares allows, mill engineering squads would rehabilitate groups of inter-linked machines in the back processing chain to maximize benefits accruing from rehabilitation and to enable measurement of these benefits. Zonal engineers will monitor progress and report back to BJMC. They and the MTFs will ensure proper utilization of spares, keep check on methods and techniques employed in rehabilitation work and assist in solving problems should any arise. They will ensure that the numbers of engineering squads employed on the project and their capabilities meet the mills needs. At present, each mill employs for rehabilitation an engineering squad the size of which varies according to mill size. Each mill has on average 32 men working on rehabilitation. This number of engineers is over and above the mill's normal engineering complement who are employed on day-to-day regular and preventive maintenance programs. At present, the rehabilitation squads are executing some rehabilitation, which is limited due to the lack of rehabilitation spares. Rehabilitation work will be extended to desired levels on receipt of spares supplied under the proposed project. The size of the work force would then be increased for full scale rehabilitation. Qualified local personnel is available.

Procurement

8.02 Since 1977, spares procurement in BJMC was decentralized to individual mills. The decentralized system proved beneficial in reducing time delays and supply problems. However, mills still have the option to combine their procurement in the most advantageous group to order parts common to them all, thereby increasing the bulk and possibly getting a better price. Spare parts for the project will be procured under the same system.

8.03 Procurement procedures of BJMC are basically satisfactory and in line with Bank Group guidelines. Invitations to tender will be published in the local press. This ensures sufficient coverage, since all foreign spare parts manufacturers are locally represented. For the supply of foreign spares for this project, basically only four foreign manufacturers produce spares for the machines manufactured by them: James Mackie for winding, jute spinning

and preparing machinery; 1/ Douglas Fraser for winding, carding and certain types of batching equipment; Sweitzer for their own type of cop winder; and Leesona Holt for their own roll winding, pre-beaming, and dressing machine. Some spares for these machines are produced locally, but others are proprietary items. Accordingly, three types of procurement procedures would be followed for equipment, spares and materials under the proposed project: (i) international competitive bidding would be used for contracts above $50,000 equivalent for domestic and foreign spares while allowing standard IDA local suppliers preference criteria; (ii) for proprietary items, contracts would be allotted after negotiations or competitive bidding among licensed manufacturers; and (iii) for contracts below $50,000 equivalent, the mills/BJMC may procure through international shopping in accordance with agreed procedures. Civil works contracts for the training component would be awarded on the basis of local bidding. For contracts above $50,000 IDA would review the mill's procurement decisions after contracts have been signed and prior to submission of the first withdrawal application to IDA. Thus, disbursement of about 30% of the credit amount would be subject to IDA's post award review.

Disbursements

8.04 For equipment and spares (other than for the training component), IDA would disburse against 100% of the foreign cost or against 100% of local cost ex-factory in cases where local engineering companies won contracts in competition with foreign companies, on the basis of withdrawal applications forwarded to IDA. For the training component, IDA would finance 100% of the foreign cost and 90% of the local cost. For consultants' services, IDA would finance 100% of costs. The proposed Credit is expected to be fully disbursed within 36 months, i.e., by July 1983.

Implementation

8.05 Preparation of tenders, tendering, and delivery of spares are expected to be completed within 10 months after Board approval of the credit. However, some mills could start rehabilitation prior to delivery of rehabilitation spares, provided the mill manager and zonal engineer consider that the existing spares stock is sufficient for rehabilitation without harming day-to-day and preventive maintenance. Such spares taken from the maintenance stock, but used for rehabilitation, would be replaced on receipt of rehabilitation spares.

8.06 The present arrangements for spares ordering, stocking and utilization are satisfactory. Each mill has its own spares stock, which is normally maintained at a level sufficient to enable regular and preventive maintenance. Whenever the number of spares falls below a minimum, more spares are ordered. The minimum is calculated on the basis of the speed of utilization, the supply time, and the shipping cost per order. All spares entering and leaving the stock are recorded, and at the end of the fiscal year books are reconciled

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1/ A unit for the manufacture of spares under license of James Mackie was set up in India in the early sixties to supply the Indian Jute Industry. This unit could be another potential supplier.

with actual stocks. The spares for rehabilitation would be kept in the spares stock of each mill, but accounted for separately.

8.07 The time needed to complete rehabilitation in all 66 mills will depend on the extent of required rehabilitation in individual mills and timely delivery of all rehabilitation spares. However, the majority of mills should be completed by the end of the second year after commencement. Rehabilitation of larger mills like Adamjee, Peoples, and Platinum, and those requiring extensive rehabilitation, may continue into the third year.

8.08 Detailed plans for introduction of third shifts, intermill transfer of machinery, implementation of the reorganization, the production incentive scheme, and training have been discussed and agreed with BJMC.

Project Monitoring

8.09 BJMC would submit quarterly operational statistics similar to monthly operational reviews (para 5.28) and half yearly progress reports on (i) utilization of the funds for maintenance and rehabilitation broken down by individual mills and (ii) implementation of the organisation, management information system, process cost accounting, training centers and incentive scheme, intermill transfer of machine units, and introduction of third shifts. BJMC's internal and external audit would check proper utilization of the spares to be purchased under the proposed loan.

IX. FINANCIAL SITUATION AND PROSPECTS

BJMC's Finances

9.01 BJMC and the jute mills are separate financial entities. GOB owns directly the share capital of the jute mills and that of BJMC. As supervisory and coordinating agency, BJMC charges its administrative expenses to the mills to recover its operating costs. The share that each mill has to pay depends on its number of looms relative to the industry's total. BJMC's operating costs, which include expenditures of headquarters and the zonal offices, have been reasonable, but increasing from .52% of total sales in FY78 to .58% in FY79, mainly due to increase in headquarter staff and a shortfall of anticipated exports:

Table 9-1: BJMC ANNUAL OPERATING COSTS

	FY76	FY77	FY78	FY79
BJMC's Operating Costs (million taka)	14.6	15.3	21.1	26.0
% of Total Jute Mills' Sales	.50	.52	.52	.58

9.02 BJMC's assets (Annex 6) normally consist only of its office equipment at headquarters and zonal offices valued at Tk 20 million. However, in the past BJMC also had the function of maintaining the liquidity of the jute

mills in view of their continued financial losses. Thus, BJMC was in charge of allocating GOB cash subsidies and loans to individual jute mills and providing some cash for them through commercial bank debentures and overdrafts (para 9.15). BJMC disbursed on a provisional basis to jute mills about three-fourths of the funds obtained (Tk 1.0 billion in FY79) and kept the other fourth (Tk .29 billion) in its cash account to help mills which are short of cash.

9.03 With the proposed capital restructuring (paras 9.14 to 9.16) and the anticipated profits (para 9.17) the need for continued subsidies will be eliminated, and BJMC's role in maintaining the mills' liquidity will be reduced substantially.

Consolidated Mills' Finances

9.04 Past Financial Performance. Between FY73 and FY79, the jute mills made losses totalling Tk 3,290 million (US$212 million), of which Tk 280 million in FY76; Tk 530 million in FY77; Tk 950 million in FY78; and Tk 610 million in FY79 (Annex 7). The per ton income statements (Annexes 8 through 12) show that, with the exception of FY78, sales prices fully covered raw material and conversion cost, while depreciation, administrative expenses, and interest charges were only partially recovered.

9.05 In absolute terms, hessian made the largest losses and sacking the smallest, as shown below:

Table 9-2: DISTRIBUTION OF LOSSES (PROFITS) AND PRODUCTION (IN TONS) PER PRODUCT LINE

Share of	FY76		FY77		FY78		FY79	
	Production	Loss	Production	Loss	Production	Loss	Production	Loss
	----------	----------	----------	----------	----------	----------	----------	----------
	%		%		%		%	
Hessian	34	72	34	44	33	47	35	41
Sacking	46	(5)	46	25	49	25	46	23
Carpet-backing	15	25	15	25	14	23	15	34
Other	5	8	5	6	4	5	4	2
Total	100	100	100	100	100	100	100	100

Compared to the respective share in production, carpetbacking shows the largest losses and sacking the smallest.

9.06 Financial performance varied among the 66 mills. In FY79, 6 hessian and 12 sacking mills made profits, but carpetbacking mills did not. Table 9-3 shows the variation between the mills on a taka per ton basis:

Table 9-3: VARIATION OF MILL PERFORMANCE IN FY79
(Taka per ton)

	Hessian		Sacking		CBC	
	Best 3 Mills	Worst 3 Mills	Best 3 Mills	Worst 3 Mills	Best 3 Mills	Worst 3 Mills
Sales	10,764	10,439	7,771	7,453	10,626	10,650
Raw Materials	4,818	5,642	4,102	5,092	5,613	6,357
Conversion Cost	4,234	6,024	2,454	2,912	3,949	5,385
- of which Factory Wages	2,590	3,606	1,579	1,930	2,122	2,928
Depreciation	358	909	136	373	522	1,266
Inventory Adjustment	(128)	(318)	(167)	(146)	(68)	(115)
Cost of Goods Sold	9,282	12,257	6,525	8,231	10,016	12,893
Gross Profit (Loss)	1,482	(1,818)	1,246	(778)	610	(2,243)
Interest	736	2,115	392	807	948	2,746
Administrative and Selling Expenses	417	489	241	298	331	610
Financial Net Profit (Loss)	329	(4,422)	613	(1,883)	(669)	(5,599)

The sales prices differed by 4% due to quality premiums and sale of more sophisticated fabrics by the best mills. The cost of goods sold in the best mills was between 26% and 32% lower than that in the worst mills. Generally, the major reasons for differentials are more efficient purchase and use of raw jute, higher spinning and weaving efficiencies, and better mill management. However, the performance of some mills was worse than others due to factors outside the influence of mill managers, such as power failures, higher absenteeism, and older machinery that operates at slower speeds and has more frequent breakdowns than newer machinery. Depreciation varied up to 174% between the best and the worst mills, reflecting different age, cost, and capacity utilizations of plant and machinery. Interest charges per ton of production in the worst mills, which in FY79 were up to 189% higher than in the best mills, point out the urgency of the capital restructuring proposed by GOB (paras 9.14 to 9.16).

9.07 While it is necessary to improve the operating performance of the jute industry as a whole, the variations within the industry show that it is also important to raise the performance level of the worse mills. The monthly review system (para 5.28) and the proposed reorganization (paras 5.05 to 5.09) should promote this.

9.08 FY80 Finances. During the first four months of FY80, the jute mills made profits of Tk 191 million, due to sharply increased sales prices (36% over FY79) and lower raw materials cost (9% below FY79). Between July and October 1979, 52 units showed profits totalling Tk 392 million, and 14 units made losses of Tk 201 million. For FY80, total profits before taxes are projected at Tk 850 million (US$54.8 million), and the financial projections (para 9.17 to 9.19) show continued profitability (on a consolidated basis) over the next five years.

Factors Affecting the Financial Performance of the Jute Mills

9.09 The major factors affecting the operating performance of the jute mills are (i) sales prices, (ii) raw material costs, (iii) factory wages, and (iv) interest charges on short and long-term loans. In FY79, raw material costs amounted to about 50% of total cost, factory wages to 25%, and interest charges to 8%. Table 9-4 below shows that price increases of 54% between FY76 and FY79 were surpassed by a 59% increase in raw material costs, a 129% increase in factory wages, and almost matched by a 48% increase in interest charges. Losses peaked in FY78 when raw material costs increased by 32% and factory wages by 70%, while sales prices increased by only 21%.

Table 9-4: EVOLUTION OF SALES PRICE AND SELECTED COST ELEMENTS
(per ton, FY76 = 100)

	FY76	FY77	FY78	FY79	July-Nov 1979
Sales Price	100	100	121	154	209
Raw Materials Cost	100	114	151	159	148
Factory Wages	100	104	178	229	229
Interest Charges	100	110	115	148	147

9.10 Sales Price. Sales prices for jute goods have more than doubled (109%) since FY76. The price boom began in the second half of FY79 and peaked in the middle of FY80. Sales prices for average jute goods are expected to stabilize in FY81 at Tk 10,925 per ton, which would be 85% above the FY76 sales price. Hessian has profited most from the price increases (129%), followed by sacking (98%) and carpetbacking (73%). At present, all product lines make profits: hessian, Tk 2,530 per ton; sacking, Tk 1,631 per ton; and carpetbacking, Tk 85 per ton.

9.11 Raw Materials Cost. Expenses for the procurement of raw jute are the single most important cost element. Raw jute costs per ton increased 59% from FY76 to FY79. However, due to a large crop of bad quality jute and, in part, due to better raw jute procurement (para 4.04), raw jute costs dropped by 9% in early FY80. In FY81 raw jute costs are expected to drop another 1% (para 4.02).

9.12 Factory Wages. Wages per ton of jute goods have increased by 129% since FY76. Contributing factors were (i) a 44% public sector wage increase in FY79, retroactive from July 1, 1977 (FY78); (ii) the policy of reimbursing 75% of wages lost because of power failures introduced in FY79; (iii) an increase of fringe benefits paid by the mills; and (iv) higher piecework rates in production. This total benefit package has increased productivity of workers and has reduced absenteeism. However, it appears that any further substantial wage increases would only increase production costs without further improving production efficiencies.

9.13 Interest Charges. Interest charges per ton have increased by 48% since FY76 and now represent 8% of total cost and 6.6% of the sales price. Continuous losses have consumed the equity base, and mills have to carry an

interest burden of up to 26% of sales revenues. Although in FY80 the financial situation of many mills has improved, the interest burden of many mills is so heavy that they continue to make losses and cannot establish a sound equity base. Therefore, GOB has proposed to restructure their capital to debt/equity ratio of 60:40 (para 9.14). This and the expected profits will reduce the interest per ton from Tk 828 in FY79 to Tk 309 in FY84.

Capital Restructuring of Jute Mills

9.14 The consolidated balance sheets of the jute mills (Annex 13) show the deteriorating trend in the financial position of the jute mills from FY76 to FY79. Total assets in FY79 were Tk 5,950 million, while long-term debt and current liabilities accounted for Tk 7,710 million (130% of total assets, implying a negative equity base of Tk 1,760 million (US$113.5 million) caused by the continued losses since FY73.

9.15 Financial assistance by GOB, new bank borrowings in the form of debentures, and the accumulation of arrears have kept the jute mills liquid during the past years. GOB assisted with Tk 820 million of export subsidies in FY78 and FY79, loss subsidies of Tk 784 million between FY74 and FY79, an interest free loan of Tk 500 million in FY75, and equity infusions of Tk 300 million in FY78 and FY79, altogether totalling Tk 2,404 million (US$155.1 million). Janata Bank and Bangladesh Bank subscribed to Tk 200 million of debentures issued by BJMC in FY74 on behalf of the mills, and the mills themselves issued debentures of Tk 300 million to Janata Bank and six commercial banks in FY74. Arrears of principal and interest on long-term loans from Bangladesh Shilpa Bank (BSB) totalled Tk 160 million at the end of FY79, and from Bangladesh Shilpa Rin Sangstha (BSRS) Tk 200 million. Most of the assistance was channelled through the BJMC Head Office, which released funds to the mills according to need.

9.16 During negotiations for the Eighth Imports Program Credit, GOB agreed to establish for each mill by not later than December 31, 1983, a long-term debt/equity ratio of 60:40, by (i) conversion of GOB loans into equity amounting to Tk 880 million in FY80; (ii) cash infusions by GOB to repay Tk 477 million of debentures; (iii) cash infusions by GOB to repay Tk 1,698 million of long-term debt to BSB and BSRS; and (iv) additional cash infusions by GOB of Tk 525 million. This amount would be reduced by any profit which the jute industry would make from FY80 to FY83. To monitor the impact of the capital restructuring at the mill level BJMC has worked out five-year financial projections, which show satisfactory debt equity ratios for each mill.

Projected Financial Performance of Jute Mills

9.17 The financial projections for the consolidated finances of the jute mills are in Annexes 7 through 15 and the underlying assumptions in Annex 16. The salient financial indicators are summarized below:

Table 9-5: SUMMARY OF FINANCIAL PROJECTIONS

	FY80	FY81	FY82	FY83	FY84
Sales Volume (tpy):	500	550	575	592	615
Sales Prices (taka/ton)	12,378	10,925	11,019	11,083	11,161
(a) Hessian	14,841	13,000	13,000	13,000	13,000
(b) Sacking	9,903	8,000	8,000	8,000	8,000
(c) Carpetbacking	14,018	14,000	14,000	14,000	14,000
	(in billions of constant 1979 Taka)				
Sales Revenue	6.19	6.01	6.34	6.56	6.86
Net Profit Before Taxes	.85	.33	.35	.34	.35
Current Liabilities	3.51	3.21	2.91	2.56	2.17
Long-Term Debt	1.73	1.75	1.51	1.36	1.21
Equity	.63	1.17	1.65	2.13	2.55
Ratios:					
Net Profit Before Tax					
- as % of sales	13.7	5.5	5.5	5.6	5.1
- as % of assets	14.5	5.4	5.8	6.1	5.9
- as % of equity /a	134.9	28.2	12.2	17.4	13.7
Current Ratio	1.17:1	1.28:1	1.42:1	1.61:1	1.90:1
LTD/Equity Ratio	71:29	60:40	48:52	39:61	32:68

/a Sharp decline is result of rapid equity build up due to proposed capital restructuring.

These projections take into account the capital restructuring and the resulting interest savings. From FY81-FY84 the jute industry is projected to make annual profits of about Tk 33 billion (US$21 million). These profits would represent about 5% of total sales and also 5% of total assets. The equity would be built up substantially from Tk 1.76 billion in FY79 to Tk 2.53 billion in FY84.

9.18 Projected profits for hessian (Annex 9) are the highest, varying between Tk 2,530 and Tk 1,104 per ton. Sacking (Annex 10) is expected to make profits of Tk 1,631 per ton in FY80 and Tk 49 per ton in FY81, but moderate losses thereafter because of a lower sales price. However, sacking revenues would continue to cover fully production costs, most of the administrative and selling expenses, and part of the interest. Carpetbacking (Annex 11) is projected to make a small profit of Tk 85 in FY80 and moderate profits thereafter, varying between Tk 673 and Tk 792 per ton. BJMC's product mix strategy is based on these financial results (para 3.17).

9.19 The projections show that the financial profitability of the jute industry is highly sensitive to changes in sales prices and production costs. During FY81 to FY84, any one of the following events would reduce the profits to roughly zero: a 5% drop of the average sales price, a 12% increase of raw materials cost, a 22% increase of factory wages, or a 13% increase of conversion cost. Given the limited influence on sales prices, strict cost control is imperative if profitability is to be maintained after FY80.

Financial Rate of Return of the Proposed Rehabilitation Project

9.20 Financial benefits from the proposed rehabilitation project accrue from (i) profits on additional production, due to the increased spinning and weaving efficiencies of the jute industry, and (ii) lowering of conversion costs due to rehabilitation of the spinning machinery, as compared to increasing conversion costs without rehabilitation. The financial rate of return (before tax) of rehabilitation in constant 1979 Taka is estimated at 26%, which is satisfactory (Annex 17). This is based on the following assumptions: (i) 30% of the hessian production above the FY80 level is due to the rehabilitation, 50% for sacking production, and 20% for carpetbacking. The other production increases are assumed to be due to better management, better utilization of raw jute, better maintenance etc.; (ii) the level of conversion costs without the project would be 0.5% higher in FY82 (the first year of project impact) and would increase annually by 0.5% up to 4.5% in FY90 (the last year of project impact). Assuming that lower sales prices would reduce the net financial profit of additional production to zero (i.e., only benefits from (ii) would accrue), the financial rate of return would be 17%, which is still acceptable.

X. BENEFITS AND RISKS

Benefits of the Project

10.01 Costs for the proposed maintenance are current expenditures, which are financed from current revenues. Any benefits from maintenance are expected to accrue during the same year by maintaining the existing production levels. Thus, a rate of return was not calculated for maintenance expenditures. The economic rate of return (ERR) (para 10.02) has been calculated only for machine rehabilitation, which is assumed to enable about 30% of the projected production increases (para 9.20). Benefits from institutional improvements, which are assumed to account for the other 70% of the production increases, have not been included in the ERR calculation. Apart from these quantifiable benefits, the Project is expected to have also qualitative benefits by increasing valuable foreign exchanges earnings from US$268 million in FY79 to US$443 million in FY84 and maintaining employment for 205,000 mill workers and for about 15% of Bangladesh's farmers who grow jute.

Economic Rate of Return

10.02 The economic rate of return has been calculated at 44%, which is fully satisfactory (Annex 18). Such a relatively high rate of return can be expected from a rehabilitation project where, normally, a marginal investment enables substantial production increases. The cost stream consists of the rehabilitation investment over three years. The benefit stream over ten years consists of (i) the economic profits of additional production attributed to the rehabilitation investment and (ii) savings of conversion costs which are assumed to increase without the project. Thus, the costs and benefits are similar to those used in calculating the financial rate of return (para 9.20), but were adjusted using the following assumptions:

(a) a shadow wage rate of .5; this reduces economic costs compared to financial costs by about 12.5%, given that wages account for about 25% of costs;

(b) a shadow exchange rate of 1.25 (US$1=Tk 19.4); this increases the economic revenues by 25% compared with financial revenues; costs increase only marginally (for foreign spares and supplies and for 25% of the raw jute cost which is assumed to be exportable);

(c) economic cost of raw jute equal to 110% of the domestic price, in view of the raw jute export tax;

(d) omission of depreciation and interest on assets existing prior to the project.

Assuming that lower sales prices reduce the net financial profit of additional production to zero and economic prices are adjusted respectively, the economic rate of return would be 34%, which is still fully satisfactory.

Risks

10.03 The risks concerning the project are minimal, since the proposed investment has been kept at a minimum to keep the industry in good operating condition with most emphasis put on operational improvements.

10.04 The risks concerning the industry as a whole are acceptable. On the one hand, strong competition from synthetics and supply disruptions due to power failures and labor unrest will continue to be a major risk for the jute goods market, and adverse price movements of raw jute and jute goods may cause substantial financial losses. On the other hand, recent oil price increases and a trend to natural fibers have given jute goods somewhat better prospects. Given the low labor cost and the backward linkages of the jute industry to the agricultural sector, Bangladesh has a comparative advantage towards producers of other jute and polypropylene fabrics. Thus, revitalization of the industry is fully justified.

XI. SUMMARY OF AGREEMENTS REACHED

11.01 The action programs concerning the jute industry agreed under the Fifth to Eighth Imports Program Credits would be monitored under the proposed Credit. For the audit of individual mill accounts and for BJMC's accounts, a new plan has been agreed (Annex I, Attachment 2(viii)).

11.02 BJMC agreed to:

(a) employ a management consultant by September 30, 1980 for preparing the detailed implementation of the reorganization; the objective is to have the new organization in place by September 30, 1981 (para 5.09);

(b) employ a consultant by September 30, 1980 to review and prepare a production incentive scheme for workers with particular emphasis on incentives for workers in the spinning and back processing departments. After review of the consultants' report GOB/BJMC would adopt such scheme by January 1, 1982 (para 5.16);

(c) to gradually reduce the backlog of audits according to an agreed schedule, so that its own accounts and those of each individual mill are audited within six months of the end of each fiscal year starting with FY81 (para 5.21);

(d) implement a process accounting system by July 1, 1981 (para 5.22);

(e) employ a professional accountants firm for a two-year period by December 31, 1980 (para 5.24);

(vi) hire a consultant by September 30, 1980 to extend the proposed management information system to information flows at headquarters (para 5.27).

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JUTE INDUSTRY REHABILITATION PROJECT

PRESENT STATUS OF THE ACTION PROGRAMS
UNDER THE FOURTH TO SEVENTH IMPORTS PROGRAM CREDITS

1. Impact of the Action Programs. Since 1975, the jute industry has made substantial progress in strengthening its operating position.

2. Marketing and production planning have improved substantially as a result of several measures taken by BJMC. Prior to 1975, many mill managers had chosen to produce those items which raised fewest problems in manufacturing, rather than those which could be sold. The net result was an inventory accumulation of goods with limited sales potential and shortages of items in relatively better demand. These shortcomings have since been eliminated. Following the preparation of a diagnosis report prepared by a marketing advisor financed by the United Kingdom Overseas Development Administration (ODA), BJMC established an appropriate organization and procedures for marketing. Other recommendations for a training program, establishment of marketing research and a market information system are now under implementation by a marketing consultant (financed by ODA) who joined BJMC in January 1979 for two years. In addition, BJMC has strengthened its sales efforts by establishing three overseas sales offices. With the assistance of a UNIDO expert who started work in January 1977, BJMC improved its quality control which was reflected in a substantial reduction of claims for substandard material. Under the action program of the Fifth Imports Program Credit, the Ministry of Jute has established an export inspection service. These measures have helped in a relative improvement of the market position of Bangladesh's jute goods, vis-a-vis her other major competitors, and the quality of Bangladesh's jute goods now seem to be equal to those of India. However, notwithstanding these improvements, substantial increases in research and development are necessary to find new uses for traditional products as well as new end uses for jute in order to achieve the longer term objective of recapturing at least part of the world market previously lost to synthetic fabrics. UNDP is providing assistance to Bangladesh on research and development for the jute industry, and efforts to develop jutton (a blend of jute and cotton fibers) continue under IDA technical assistance.

3. There is also a marked improvement in maintenance since 1975. Maintenance Task Forces (MTFs), originally consisting of expatriate consultants, and subsequently of their local engineering counterparts, have drawn up and are implementing specific maintenance programs for each mill. Maintenance standards have improved substantially. Purchasing procedures for spare parts have been streamlined and local production of spare parts under CIDA technical assistance started in mid-1979.

4. Organization and Management. In 1977, BJMC established unit boards, chaired mostly by its six directors, for each of its 77 mills. However, it was discovered that this span of control was excessive and led to inadequate supervision of mill operations. In line with ECL's and IDA's recommendations, BJMC now proposes to reduce the burden upon the directors by grouping mills into nine zones, each under a general manager who would control not more than nine mills. Such groupings would reduce the span of control of directors to nine officers and will permit better use of scarce management skills and facilitate the tapping of economies of scale by gradually integrating the operations of adjacent mills. In particular, BJMC will establish training units in selected mills within each group. BJMC has also established an incentive scheme, designed to reward both management and worker performance. This system is presently under review, and appropriate changes are likely to be implemented by early 1980. Finally, in connection with the Sixth Imports Program Credit, Bangladesh consultants (EWP) financed by ODA/UK, have designed a management information system. BJMC is currently preparing the system for implementation. The same consultant has devised a process accounting system for the mills that would give better control on wastage and better data for decision-taking. The system is being tested and will be implemented in some mills in early 1980.

5. The measures implemented under the action programs have already resulted in an improvement in the operational performance of BJMC's mills and have helped to contain a deterioration of the financial performance. Weaving efficiencies ov overall installed weaving capacity improved from 43% in FY75 to 53% in FY79, and production increased by 15% over the same period rising from 432,000 tons to 494,000 tons despite a shift to lighter fabrics. However, the full benefits of this improvement were offset by rising raw jute costs and increased conversion costs. Poor weather conditions decreased jute yields and raised raw jute prices by about 84%, while conversion costs were significantly affected by an average 30% wage rate increase in FY78. Higher losses were averted by an 82% increase in selling prices, by careful monitoring of the mix of production, and by containing the rate of increase in conversion costs vis-a-vis the rate of inflation. Overall, BJMC's operating losses were held to Tk 608 million in FY79, considerably below the Tk 790 projected (Table 6).

6. The table below shows key indicators of BJMC's performance compared to previous years and targets agreed for FY79 as part of the Seventh Import Program Credit (additional indicators and other details are given in the attachments). For monitoring purposes, targets and costs are expressed in constant FY79 values:

Table 6: PERFORMANCE TARGETS AND OTHER INDICATORS

	FY75	FY77	FY79	FY79	FY80
	----------Actuals---------			---Targets---	
Production ('000 long tons)	432	481	494	569	525
Export ('000 long tons)	369	464	453	525	460
Spinning Efficiency (%)	60	65	65	65	66
Weaving Efficiency (lbs/operating loom Hr)					
Hessian	6.1	6.1	6.3	6.2	6.3
Sacking	16.7	17.6	17.7	18.6	17.7
Carpet backing	14.8	14.2	13.3	14.8	13.5
Raw Jute Consumption Ratio	1.09	1.20	1.22	1.15	1.10
Wastage %	4.1	8.0	7.1	7.1	6.8
Selling Price (Tk/ton)	5000	5928	9137	6176	12378
Conversion Cost (Tk/ton)	2106	2328	3959	3173	4342
Profit/(Loss) before Interest (Tk/ton)	(176)	(134)	200	(515)	2529
Profit/(Loss) Tk/ton Sold /a	(588)	(1053)	(1260)	(1390)	1698
Profit/(Loss) Tk million /a	(254)	(515)	(608)	(790)	849

/a Profit/(Loss) per ton sold is computed on the basis of (i) valuation of unsold inventories at cost or market price whichever is the lower and (ii) inclusion of interest and general financing charges.

7. On the basis of firm export orders and adequate stockholdings of raw jute to meet these orders, BJMC projects operating profits of Tk 849 million. As of December 1979, operating profits were about Tk 450 million for FY80, thus reversing the trend of losses from FY75 to FY79. For the medium term, i.e. until 1985, the return to profitability is expected to be maintained. However, the level of profitability would be significantly influenced by changing patterns in product mix demand over which BJMC has limited control and by the impact of mill rehabilitation and financial restructuring. The effect of these and other variables would be monitored every six months during the course of supervision of the ongoing Imports Program Credit. During these missions, operating projections would be updated and corrective action recommended to maintain current levels of profitability.

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Status of Action Programs for Jute Industry

Required Action (Fourth and Fifth Credit) 1/	Agreed Completion Date	Status
i) Marketing Consultants to be hired to study requirements of marketing directorate, organize training programs, market studies and promotion programs overseas.	April 30, 1977	Phase I of assignment completed and recommendations implemented. Phase II report containing recommendations on training, market research and market information systems under consideration by MOH/BJMC. Consultants from PA (financed by ODA) commenced 24-man month assignment in January 1979 to implement recommendations.
ii) Consultants to advise on spare parts production of Galfra Habib to be recruited.	June 30, 1977	Consultants (3) financed by CIDA commenced assignment December 1978. Spare parts manufacturing program implemented with capacity utilisation as of September 1979 estimated at 70%.
iii) BJMC to prepare reconstructed balance sheet for each mill and recommendation of adjustments required to achieve appropriate debt/equity ratio.	June 30, 1977	BJMC has completed asset revaluation. GOB has agreed, in the framework of the Eighth Imports Program Credit, to a detailed plan to achieve a debt/equity ratio of 60:40 for individual mills by 1983.
iv) GOB to establish an adequately staffed export inspection service in the Jute Ministry.	March 31, 1977	As of September 1979, four of seven proposed inspection offices operational. Balance to be operational by December 31, 1979.
Required Action (Sixth Credit)		
A. Rehabilitation/Profitability Improvement		
i) BJMC to carry out a survey of each mill to identify the need for rehabilitation and to determine (a) the necessary investment required; (b) anticipated operational improvements; (c) incremental benefits resulting from the improvements; and (d) financial and economic rates of return.	February 28, 1978	Survey completed by ECL/PA in December 1978. Proposals not accepted by GOB. In June 1979 GOB submitted proposals for rehabilitation prepared by a Jute Sector Study Group. Project now under appraisal.
ii) On the basis of the mill-by-mill survey, and taking into account projected levels of demand, GOB will submit to IDA with comments, BJMC's recommendations on mills selected for investment and actions to be taken with respect to uneconomic units.	March 31, 1978	Proposals submitted by GOB (A(i) above) in June 1979 and accepted as basis for proposed jute rehabilitation project.
iii) BJMC shall continue to (a) carry out its program aimed at appraising the preventive maintenance systems of its mills, make recommendations for their improvement and implementing such recommendations; (b) furnish to GOB and IDA its report on the program and, if necessary, employ consultants to improve the implementation of its program.	i) Completion of Report - March 31, 1978. ii) Appointment (if necessary) of Consultants, July 1, 1978.	Maintenance programs still under implementation with maintenance task forces staffed at full strength.
iv) GOB/BJMC to carry out a study of raw jute supply, including the review of the present pricing policies of raw jute and the optimal mix between raw jute and jute goods exports.	December 31, 1978	GOB comments on ECL report submitted June 1979. Agreement reached on most major issues. Actions to be taken to establish mechanism/procedures for development of optimal pricing structure/export strategy were discussed with GOB by Jute Rehabilitation mission, and subsequently during course of negotiations for Eighth Imports Program Credit.
B. Operational Targets		
BJMC to prepare operational targets for each mill and consolidated "Corporation" target for items such as production, spinning and weaving efficiency, conversion costs per ton, raw jute purchasing efficiency, wastage and profits.	October 1, 1978	BJMC has submitted consolidated projections for FY80-FY81 incorporating rehabilitation improvements. Individual mill targets to be submitted before negotiations.

1/ Under the action program of the IV Program Credit, BJMC was required to (i) carry out a world market study on jute products; (ii) complete an inventory of production capacity and to create a Production Planning Directorate; (iii) employ consultants to develop and implement a program of planned maintenance; and (iv) prepare financial projections for FY76 and for FY76-FY80. All these actions have been satisfactorily completed. Under the Action Program of the V Program Credit, BJMC was required to update (i) the study on world demand for jute products; (ii) its production program and initiate a revision of its cost accounting

Required Action (Sixth Credit)	Agreed Completion Date	Status
C. Management and Systems Improvements		
i) GOB to assist in reduction of raw jute purchasing costs through better timing of credit availability coupled with more autonomy for BJMC and the mills in raw jute purchasing.	Understanding with GOB/ BJMC already reached	Individual mills allowed autonomy to purchase raw jute within general guidelines set by MOJ/BJMC. Credit availability negotiated with Commercial Banks has allowed better timing of raw jute purchase.
ii) GOB to give BJMC and the mills more autonomy in areas such as personnel policies, raw jute purchasing, etc. The degree of autonomy is to be clarified in the Rules of Business.	Rules of Business reviewed by IDA.	Reviewed and accepted September 1979.
iii) BJMC to decentralise its organisation and delegate more authority to zonal offices and mills. The decentralisation would be combined with the design and implementation of a revised management control system.	July 1, 1978	Proposals submitted June 1979 for creation of nine zones. Revised operational, functional and administrative responsibilities also proposed. Implementation program to be agreed during negotiations.
iv) GOB to establish a policy that the Chief Executive should remain at his post for at least three years and BJMC will reduce inter-mill transfer of managers.	Understanding already reached with GOB/BJMC.	GOB's policy of limited transfer reconfirmed. Limited transfer of personnel that has taken place relates to implementation of revised personnel policies.
v) BJMC to present to GOB recommendations for an incentive system for BJMC and mill personnel.	March 31, 1978	General incentive systems now operational. BJMC to consider revisions to emphasis profitability/efficiency. Proposals due for negotiations.
vi) BJMC to prepare and implement a training program for BJMC and mill personnel.	Preparation by December 1, 1977 of training program to be completed by June 30, 1980.	Training scheme operational and progress in line with implementation schedule.
vii) BJMC to implement improved spare parts purchasing procedure including greater autonomy for mills in the purchase of local spares.	March 31, 1978	Revised procurement procedures and expenditure limits introduced during FY78-FY79 working satisfactorily.
	Agreed Completion Date under Proposed Credit	
viii) BJMC to expedite completion of FY77 audit and thereafter have its external audits completed within 6 months of the fiscal year end starting with the accounts of FY79.	(1) Annual audit for FY76 and FY77 to be completed by September 30, 1980.	FY76 - Audits completed for 74 of 77 operational mills FY77 - Audits completed for 70 of 77 operational mills FY78 - Audits completed for 48 of 77 operational mills
	(2) Annual audit for FY78 by December 31, 1980.	
	(3) Annual audit for FY79 by March 31, 1981.	
	(4) Annual audit for FY80 by June 30, 1981.	
	(5) Thereafter, audits to be completed within 6 months of each year.	

ANNEX I
Attachment 2

BANGLADESH
JUTE INDUSTRY REHABILITATION PROJECT

Performance Indicators and Operational Targets

	Actual						Original Target	Target				
	FY74	FY75	FY76	FY77	FY78	FY79	FY79	FY80	FY81	FY82	FY83	FY84
A. MARKET PROJECTION (figures in '000 tons)												
1. World Exports of Jute Goods												
Hessian	363	411	380	379	478	376	393	401	410	415	420	420
Sacking	370	363	300	325	383	352	325	325	325	325	325	325
Carpetbacking	228	143	210	182	214	220	200	210	220	225	235	235
Others	153	124	82	77	61	45	99	110	120	123	125	125
Total	1,114	1,041	972	963	1,136	993	1,017	1,046	1,075	1,088	1,105	1,105
2. Exports by BJMC												
Hessian	153	136	162	156	185	172	175	184	197	218	230	247
Sacking	208	174	210	214	244	197	245	182	213	213	213	213
Carpetbacking	62	42	64	72	76	75	80	85	89	91	95	99
Others	23	17	22	22	17	9	20	9	7	7	7	7
Total	446	369	458	464	522	453	520	460	506	529	545	566
3. Production by BJMC												
Hessian	168	144	160	163	173	172	180	194	205	228	241	260
Sacking	222	220	218	224	260	230	285	230	244	244	244	244
Carpetbacking	65	40	68	69	74	75	80	88	90	92	96	100
Others	30	28	24	25	23	17	24	13	11	11	11	11
Total	485	432	470	481	530	494	569	525	550	575	592	615
B. EFFICIENCY TARGETS												
4. Spinning Performance (Production lbs/ spindle hr.)												
Hessian WARP				Est. Average 65%	Est. Average 65%	Est. Average 65%	.626 75	.651 78	.668 80	.670 78	.685 82	- - -- -
Hessian WEFT							.653 64	.673 66	.694 68	.70 68	.714 70	- - -- -
Sacking WARP	NA	NA	NA				.685 65	.707 66	.728 68	.735 69	.749 70	- - -- -
Sacking WEFT							1.90 64	1.96 66	2.02 68	2.05 69	2.08 70	- - -- -
C. B. WARP							.636 80	.659 83	.675 85	.66 83	.691 87	- - -- -
C. B. WEFT							.593 80	.616 83	.630 85	.65 85	.645 87	- - -- -
5. Weaving Performance (Production lbs/ budgeted loom hr.)												
Hessian			6.14 49/a	6.05 48/a	6.17 49	6.31 49	6.22 48	6.33 49	6.56 51	7.07 54	7.45 56	7.96 62
Sacking	NA	NA	17.63 60/a	17.57 60/a	17.55 59	17.69 60	18.57 62	17.67 60	19.41 65	21.02 71	21.33 72	21.98 74
Carpetbacking			14.37 61/a	14.21 60/a	13.52 57/b	13.29 66	14.82 62/b	13.54 66	13.57 66	13.74 67	14.37 70	15.00 73
6. Wastage Percentage	NA	NA		7.95	7.51	7.09	7.30	6.80	6.50	6.50	6.50	- -
7. Conversion Cost (TK per ton)	1,838	2,145		2,320	3,195	3,959	3,173	4,342	4,354	4,392	4,369	4,451
8. Raw Jute Consumption												
Ratio of Avg. BJMC Jute Cost to average market Price	1.23	1.09	1.19	1.20	1.19	1.22	1.15	1.10	1.10	1.10	1.10	- -
C. CAPACITY REQUIRED												
9. Numbers of Looms Required (Operating)/c												
Hessian			12,165	12,702	12,874	12,734	13,287	14,072	14,348	14,802	14,848	14,992
Sacking	NA	NA	5,939	5,981	6,802	6,021	7,046	5,974	5,770	5,328	5,250	5,165
Carpetbacking			1,806	1,520	1,675	1,750	1,652	1,989	2,029	2,048	2,044	2,040
			19,910	20,203	21,351	20,505	21,985	22,035	22,147	22,178	22,142	22,197
10. Numbers of Looms Available for Operation (Budgeted)												
Hessian			14,514	13,486/d	14,061	15,317	14,048	15,903	16,203	16,803	16,853	16,903
Sacking	NA	NA	7,445	7,502/d	7,622	6,773	7,742	7,062	6,762	6,161	6,111	6,061
Carpetbacking			2,141	2,141/d	2,085	2,148	2,104	2,315	2,352	2,371	2,380	2,380
			24,100	23,129	23,768	24,238	23,894	25,280	25,317	25,335	25,344	25,344
11. Capacity Utilization												
Hessian			84	94	91	83	94	88	88	88	88	89
Sacking	NA	NA	80	80	89	89	91	85	85	86	86	85
Carpetbacking			83	71	80	81	79	83	84	84	84	84
D. EMPLOYMENT (Permanent Workers '000)	141	132	131	132	138	143	134	143	143	143	143	143
E. CAPITAL STRUCTURE TARGETS												
12. Debt/Equity Ratio												
LTD/Equity Ratio	20.2:1	NEG	NEG	NEG	NEG	NEG	NA	71:29	60:40	48:52	39:61	32:68

Footnotes

/a Based on operating loom hr.
/b Based on 15% heavier fabric.
/c Calculated on the basis of $\frac{2204 \text{ lbs./ton} \times \text{annual production (in tons)}}{16\text{h/day (2 shifts)} \times 300 \text{ days/yr.} \times \text{lbs./loom hr.}}$ for hessian and sacking and on 3-shift basis for carpet backing.
/d Based on installed looms.

November 7, 1979

B A N G L A D E S H

JUTE INDUSTRY REHABILITATION PROJECT

Calculation of Economically Optimal Production Levels

1. The economically optimal production would be at a level where sales prices per ton equal the economic cost of the highest cost jute mill. It is assumed that with increased production the sales price would be lower due to elastic demand. The calculation below does not take into account a lowering of production cost with increased production so that the optimal production level is somewhat underestimated.

2. Assumptions for economic prices and costs are:

(i) shadow exchange rate of 1.25 (US$1=19.4 taka);
(ii) shadow wage rate of 0.5;
(iii) economic cost of raw jute is 10% above the financial cost, 25% of raw jute is exportable. The other 75% could not be exported due to lack of sufficient processing capacity abroad;
(iv) omission of depreciation (sunk cost);
(v) omission of interest (transfer payments).

3. Actual and projected taka per ton sales price and selected cost elements for financially weakest mills (The FY80 financial projections were calculated by assuming that the cost differential between the average costs for all jute mills in FY79 and the highest cost mill would persist in FY80):

	Meghna			Anowara			Ashraf		
	Hessian			Sacking			CBC		
	FY79	FY80	FY84	FY79	FY80	FY84	FY79	FY80	FY84
Sales	10,504	14,916	13,066	7,418	9,690	7,790	10,773	13,934	14,077
Raw Materials	5,605	5,323	5,597	5,480	4,579	5,294	6,209	6,121	6,636
Conversion Cost	6,374	6,475	6,621	2,827	3,127	3,220	5,535	5,864	5,877
-- Wages	4,208	3,528	4,269	1,870	1,902	1,958	3,543	2,940	3,660
Inventory Adj.	(173)	27	1	(114)	165	-	51	(4)	-
Adm. & Selling Exp.	484	510	447	182	332	202	506	694	529

4. Economic profit (calculated by applying the assumptions (para. 2) to cost figures in para. 3) and economic break-even sales prices of highest cost jute mills for FY79 and projected for FY80 (i.e., where economic costs equal economic revenues) are shown below:

	Economic Profit			Economic Break-even Sales Price		
	FY79	FY80	FY84	FY79	FY80	FY84
	in taka per ton					
Hessian -- Meghna J.M.	2,098	7,149	4,961	11,032	11,380	11,361
Sacking -- Anowara J.M.	971	4,065	1,205	8,301	8,048	8,531
Carpetbacking -- Ashraf J.M.	2,094	5,283	5,389	11,372	12,135	12,207

5. Financial equivalent of economic break-even sales prices (calculated by dividing economic break-even sales price by 1.25):

	FY79	FY80	FY84
	(in Taka per ton)		
Hessian	8,825	9,104	9,089
Sacking	6,641	6,438	6,824
Carpetbacking	9,097	9,708	9,766

6. Average financial sales price of all jute mills used as basis for calculation below (para. 7):

	FY79	FY80	FY84
	(in Taka per ton)		
Hessian	10,451	14,841	13,000
Sacking	7,617	9,903	8,000
Carpetbacking	10,714	14,018	14,000

7. Demand at economic break-even sales prices of highest cost jute mills in FY79, according to ECL/PA consultants price elasticities of demand (Hessian, -1.2; Sacking, -1.1, CBC, -1.6):

Δ Demand = Elasticity . Δ Sales Price

$\Delta D = E \cdot \Delta P$

	FY79	FY80	FY84		FY79	FY80	FY84
$\Delta\rho$ Hessian =	-15.6%	-38.7%	-30.1%	ΔD Hessian =	+18.7%	+46.4%	+36.1%
$\Delta\rho$ Sacking =	-12.8%	-35.0%	-14.7%	ΔD Sacking =	+14.1%	+38.5%	+16.2%
$\Delta\rho$ CBC =	-15.1%	-30.8%	-30.3%	ΔD CBC =	+22.5%	+49.3%	+48.5%

Resulting theoretical export demand:

	FY79	FY80	FY84
Hessian	204,164 tons	269,376 tons	336,167 tons
Sacking	224,777 tons	252,070 tons	247,506 tons
Carpetbacking	91,875 tons	126,905 tons	147,015 tons
Total	520,816 tons	646,341 tons	730,688 tons

ANNEX 3

B A N G L A D E S H

Jute Industry Rehabilitation Project

Terms of Reference for a Management Study for BJMC

The Bangladesh Jute Mills Corporation (BJMC) intends to invite qualified consultants to review the organization structure, the management processes and staffing levels of the Corporation.

The consultants would:

-- review the role of the Corporation in relationship to:

  (a) the requirements of the industry;
  (b) the requirements of the Ministry of Jute;
  (c) the Cabinet guidelines of May 1976 on the relationships between Government, Autonomous Corporation and Enterprises.

-- examine the present and proposed organization structure and management processes;

-- examine and evaluate the functional responsibilities of each major departmental director and recommend the staffing levels necessary for each department to carry out the functions;

-- determine for each major department appropriate levels of authority and responsibility;

-- examine the work processes of each department and its relationship to other departments and to recommend improvements;

-- set out plans and procedures for the implementation of each stage.

ANNEX 4

BANGLADESH

JUTE INDUSTRY REHABILITATION PROJECT

Terms of Reference for Professional Accountants Firm to Help Improve Financial Planning and Implement a Process Cost Accounting System

Objectives

The Bangladesh Jute Mills Corporation (BJMC) intends to hire professional accountants firm to provide advice for improving their financial management, in particular to improve financial planning and the cost accounting and control systems at mill level and at headquarters. In addition to making recommendations pertaining to the operation of these systems, the professional accountants firm will give special attention to the needs for training staff to facilitate implementation.

The professional accountants firm should have a background in jute mills or similar industries and experience in organization, finance, and reporting. It will serve as advisor to the finance director and will, among other things, assist BJMC in the preparation of quarterly reports to IDA on the progress of the Jute Industry Rehabilitation Project. It will be assigned counterpart staff to assist with the work.

Functions

The professional accountants firm would review the present system for cash flow analysis and projections and develop a system of financial planning for BJMC and its units, both for current and long-term operating purposes, which would ensure a smooth flow of funds between BJMC and its units and which would facilitate effective mobilization of funds for the operating units from internal cash generation, financial institutions/banks, and the capital market. The professional accountants firm should consider the present system of cash management and control, budgetary control, and corporate planning with particular reference to:

(a) transfer of funds from BJMC to the mills and the criteria used for this allocation;

(b) methods for formulating capital and expenditure budgets;

(c) the decentralization of the budgetary control process;

(d) the methodology for preparing long-term projections;

(e) consolidation of the mills financial statements on a regular, timely basis;

(f) review staff requirements and responsibilities within BJMC's finance department and assist in the introduction of the new process accounting system.

B A N G L A D E S H

Jute Industry Rehabilitation Project

BJMC Jute Mills Showing Narrow Looms
CBC Looms Installed and Rehabilitation Costs

No.	Name of Mill	Number of Looms Installed			Year of Start of Install.	No. of Looms Instal.	Year of Start of Install.	Zone	Rehabilitation Cost (Tk. Million)		
		Hess.	Sack.	Total		CBC			Foreign Spares	Local Spares	Total
1.	Bawa Jute Mill	203	47	250	1951	34	1966	D.Z1	88.8	97.5	186.3
2.	Victory Jute Mill	365	120	485	1951			CH.Z	403.4	240.1	643.5
3.	Adamjee Jute Mills	2,083	940	3,023	1951-55	225	1964		3,078.5	1,276.4	4,354.9
4.	Peoples Jute Mill	670	226	896	1954-64	78	1967	KH.Z	992.2	559.3	1,551.5
5.	Chittagong Jute MFG	775	268	1,043	1954	120	1966	CH.Z	136.5	325.0	461.5
6.	Daulatpur Jute Mill	145	105	250	1954			KH.Z	138.9	18.0	156.9
7.	Crescent Jute Mill	698	335	1,033	1954-63	85	1969	KH.Z	72.5	96.1	168.6
8.	Latif Bhawany Jute Mill	341	365	706	1955-62	124	1969	DZ.2	210.5	312.6	523.1
9.	Karim Jute Mill	230	228	458	1955-60	58	1965	DZ.2	712.1	328.8	1,040.9
10.	Amin Jute Mill	494	250	744	1955-62	207	1967-70	CH.Z	786.8	195.2	982.0
11.	Platinum Jute Mill	602	273	875	1957	80	1967	KH.Z	394.7	1,013 1	1,407.8
12.	Star Jute Mill	558	202	760	1958-67			KH.Z	19.9	47.4	67.3
13.	Dacca Jute Mill	224	126	350	1956-75	65	1975-79	DZ.1	202.0	219.3	421.3
	Sub-total	7,388	3,485	10,873		1,076			7,236.8	4,728.8	11,965.6

No.	Name of Mill	Number of Looms Installed			Year of Start of Install.	No. of Looms Instal.	Year of Start of Install.	Zone	Rehabilitation Cost (Tk. Million)		
		Hess.	Sack.	Total		CBC			Foreign Spares	Local Spares	Total
14.	Nishat Jute Mill	265	60	325	1957-63	30	1968	DZ.1	173.8	336.8	510.6
15.	United Jute Mill	250	250	500	1962			DZ.2	134.9	138.1	273.0
16.	Quami Jute Mill	253	247	500	1963-67	25	1970	KH.Z	135.6	65.8	201.4
17.	W. Rahman Jute Mill	250	250	500	1964			DZ.1	262.2	217.0	479.2
18.	Bangladesh Jute Mill	325	175	500	1964			DZ.1	212.1	190.3	402.4
19.	Star Alkaid Jute Mill	179	125	304	1965			DZ.1	28.4	93.8	122.2
20.	Delta Jute Mill	335	145	480	1965			CH.Z	115.0	51.2	166.2
21.	Ajax Jute Mill	125	125	250	1965			KH.Z	120.6	21.7	142.3
22.	Co-operative Jute Mill	179	84	263	1965			DZ.1	89.5	87.9	177.4
23.	Alijan Jute Mill	131	125	256	1965			DZ.2	57.2	19.2	76.4
24.	Moqbular Rahman Jute Mill	138	112	250	1966			CH.Z	114.9	25.8	140.7
25.	Afil Jute Mill	140	110	250	1966			KH.Z	153.4	67.2	220.6
26.	Sonali Jute Mill	380	115	495	1966			KH.Z	50.7	16.2	66.9
27.	Janata Jute Mill	170	86	256	1966			DZ.1	67.5	22.6	90.1
28.	A. K. Khan Jute Mill	125	125	250	1967			CH.Z	80.9	30.2	111.1
29.	Hafiz Jute Mill	450	190	640	1967			CH.Z	131.6	56.7	188.3
	Sub-total	3,695	2,324	6,019		55			1,928.3	1,440.5	3,368.8

No.	Name of Mill	Number of Looms Installed			Year of Start of Install.	No. of Looms Instal.	Year of Start of Install.	Zone	Rehabilitation Cost (Tk. Million)		
		Hess.	Sack.	Total		CBC			Foreign Spares	Local Spares	Total
30.	Aleem Jute Mill	125	125	250	1967			KH.Z	43.5	13.6	57.1
31.	Eastern Jute Mill	155	101	256	1967	32	1969	KH.Z	17.1	7.1	24.2
32.	A. R. Howlader Jute Mill	150	100	250	1967			DZ.1	75.9	19.7	95.6
33.	National Jute Mill	183	67	250	1967	65	1970	DZ.1	100.8	49.3	150.1
34.	Kohinoor Jute Mill	125	125	250	1967			DZ.2	29.7	82.2	111.9
35.	Sattar Jute Mill	140	138	278	1967			DZ.2	55.9	.78.9	134.8
36.	Anowara Jute Mill	154	123	277	1968	69	1970	CH.Z	247.9	48.4	296.3
37.	Gulahmed Jute Mill	150	100	250	1968	65	1968	CH.Z	146.3	29.3	175.6
38.	Fauji Chatkal	170	80	250	1968			DZ.1	44.5	77.4	121.9
39.	Ashraf Jute Mill	219	96	315	1968	65	1978	DZ.2	213.9	75.8	289.7
40.	Jabbar Jute Mill	150	100	250	1968			DZ.2	26.3	52.6	78.9
41.	Nawab Askari Jute Mill	324	176	500	1968-76			DZ.2	190.9	115.1	306.0
42.	Pubali Jute Mill	150	100	250	1969			DZ.1	43.3	78.9	122.2
43.	Alhaj Jute Mill	150	100	250	1969			DZ.2	15.3	13.7	29.0
44.	Chandpur Jute Mill	125	125	250	1969			DZ.2	67.5	69.1	136.6
45.	Gawsia Jute Mill	150	100	250	1969			DZ.2	36.2	55.9	92.1
	Sub-total	2,620	1,756	4,376		296			1,355.0	867.0	2,222.0

No.	Name of Mill	Number of Looms Installed			Year of Start of Install.	No. of Looms Instal.	Year of Start of Install.	Zone	Rehabilitation Cost (Tk. Million)		
		Hess.	Sack.	Total		CBC			Foreign Spares	Local Spares	Total
46.	Nabarun Jute Mill	150	100	250	1969			DZ.2	68.7	2.5	71.2
47.	Meghna Jute Mill	125	125	250	1969			DZ.2	67.5	69.1	136.6
48.	Quasem Jute Mill	173	84	257	1969			CH.Z	39.2	15.7	54.9
49.	Jessore Jute Industries	300	100	400	1970	50	1970	KH.Z	81.6	15.4	97.0
50.	Noapara Jute Mill	150	25	175	1970	32	1970	KH.Z	108.4	45.4	153.8
51.	Rajshahi Jute Mill	134	85	219	1972			KH.Z	32.9	16.4	49.3
52.	Mymensingh Jute Mill	308	170	478	1974			DZ.2	55.9	105.3	161.2
53.	Carpeting Jute Mill					75	1965	KH.Z	122.4	142.0	264.4
54.	Manawar Jute Mill					48	1968	DZ.2	30.1	20.1	50.2
55.	R.R. Jute Mill					65	1969	CH.Z	85.8	22.5	108.3
56.	Hafiz Textile					60	1969	CH.Z	37.0	13.4	50.4
57.	Mohsen Jute Mill					65	1970	KH.Z	13.2	54.7	67.9
58.	Mushriqui Jute Mill					56	1970	DZ.2	95.5	98.9	194.4
59.	Taj Jute Backing					53	1970	DZ.2	31.7	19.5	51.2
60.	Karnafuli Jute Mill					78	1970	CH.Z	706.4	7.5	713.9
61.	M.M. Jute Mill					65	1970	CH.Z	350.9	8.9	359.8
	Sub-total	1,340	689	2,029		647			1,927.2	657.3	2,584.5

No.	Name of Mill	Number of Looms Installed			Year of Start of Install.	No. of Looms Instal.	Year of Start of Install.	Zone	Rehabilitation Cost (Tk. Million)		
		Hess.	Sack.	Total		CBC			Foreign Spares	Local Spares	Total
62.	S.K.M. Jute Mill					65	1970	CH.Z	59.2	10.5	69.7
63.	Purbachal Jute Mill					65	1971	KH.Z	78.4	28.0	106.4
64.	Allied Jute Mill					52	1971	DZ.2	66.2	12.2	78.4
65.	Sultana Jute Mill					65	1971	CH.Z	66.3	5.5	71.8
66.	Broad Burlap Industries					68	1973	DZ.1	59.2	-	59.2
	TOTALS 1/	15,043	8,254	23,297		2,389			12,776.6	7,749.8	20,526.4

1/ Some of the sacking looms were converted into hessian looms after installation.

kw
2.22.80

ANNEX 6

B A N G L A D E S H

Jute Industry Rehabilitation Project

Balance Sheets of BJMC
(Provisional)

(Taka in ten million)

	FY76	FY77	FY78	FY79
ASSETS				
Cash at Hand/Bank	11	12	14	29
Other Current Assets	1	1	2	2
Total Current Assets	12	13	16	31
Jute Mills Account[1/]	70	100	118	100
Other	17	1	2	2
Total Assets	99	114	136	133
LIABILITIES				
Current Liabilities	5	-	1	4
Debentures	20	20	20	20
ADP (to mills)	20	5	4	4
Government Loans	53	64	62	62
Subsidy/Equity	-	24	48	30
Grants (to mills)	-	-	-	-
Bank Overdrafts	-	-	-	12
Capital	1	1	1	1
	99	114	136	133

1/ This is inconsistent with the BJMC account in the consolidated balance sheet of jute mills (Annex 13), since some jute mills record loans from BJMC under "other liabilities." For future years, BJMC will assure consistent entries by all jute mills.

B A N G L A D E S H

Jute Industry Rehabilitation Project

Consolidated Income Statements of Jute Mills

(Taka in 10 million)

	A C T U A L				T A R G E T (Constant 1979 Taka)				
	FY76	FY77	FY78	FY79	FY80	FY81	FY82	FY83	FY84
Sales	294	294	403	450	619	601	634	656	686
Raw Materials	148	173	252	246	234	255	275	292	313
Conversion Cost	105	112	169	194	217	240	253	259	274
Of which Factory Wages	66	56	106	125	128	141	151	155	168
Depreciation	14	15	15	17	18	20	21	21	22
Inventory Adj.	15	2	15	(3)	4	(2)	(1)	-	-
Cost of Goods Sold	282	302	451	454	473	513	548	572	609
Gross Profit (Loss)	12	(8)	(48)	(4)	146	88	86	84	77
Interest	26	31	34	40	41	34	29	25	19
Adm. & Selling Expenses	14	16	15	18	20	21	22	22	23
Financial Net Profit (Loss)	(28)	(55)	(97)	(62)	85	33	35	37	35
Taxes 1/					55	21	23	24	23
Net Profit (Loss) after Taxes	(28)	(53) 2/	(95) 2/	(61) 3/	30	12	12	13	12

1/ Based on a consolidated tax rate of 65% (super-tax and surcharge) for all mills.

2/ Including other income of 2 crores taka.

3/ Including other income of 1 crore taka.

1/10/80

B A N G L A D E S H

Jute Industry Rehabilitation Project

CONSOLIDATED

Income Statements of Jute Mills

(Taka/ton)

	A C T U A L				T A R G E T (Constant 1979 Taka)				
	FY76	FY77	FY78	FY79	FY80	FY81	FY82	FY83	FY84
Sales	5,914	5,928	7,162	9,137	12,378	10,925	11,019	11,083	11,161
Raw Materials	3,156	3,600	4,758	5,031	4,686	4,644	4,793	4,941	5,092
Conversion Cost	2,255	2,320	3,195	3,959	4,342	4,354	4,392	4,369	4,451
Of which Factory Wages	1,117	1,172	1,992	2,561	2,563	2,546	2,624	2,618	2,728
Depreciation	291	306	290	352	352	370	360	357	351
Inventory Adj.	(27)	(180)	(270)	(133)	84	(31)	(10)	2	-
Cost of Goods Sold	5,675	6,046	7,973	9,209	9,464	9,337	9,535	9,669	9,894
Gross Profit (Loss)	239	(118)	(811)	(72)	2,914	1,588	1,484	1,414	1,267
Interest	558	613	643	828	821	613	504	417	309
Admin. & Selling Expenses	279	322	272	360	395	391	384	380	375
Financial Net Profit (Loss)	(598)	(1,053)	(1,726) 1/	(1,260) 2/	1,698	584	596	617	583

1/ Not including other income of Tk 34/ton.

2/ Not including other income of Tk 24/ton.

1/10/80

B A N G L A D E S H

Jute Industry Rehabilitation Project

HESSIAN

Income Statements of Jute Mills

(Taka/ton)

	A C T U A L				T A R G E T (Constant 1979 Taka)				
	FY76	FY77	FY78	FY79	FY80	FY81	FY82	FY83	FY84
Sales	6,543	6,951	8,077	10,451	14,841	13,000	13,000	13,000	13,000
Raw Materials	3,399	3,837	5,079	5,211	4,917	4,769	4,914	5,059	5,204
Conversion Cost	3,029	3,108	4,398	5,139	5,524	5,621	5,511	5,386	5,338
Of which Factory Wages	1,487	1,543	2,698	3,258	3,188	3,239	3,303	3,251	3,305
Depreciation	358	366	361	410	391	374	341	330	313
Inventory Adj.	4	(132)	(477)	(334)	27	(14)	12	5	1
Cost of Goods Sold	6,790	7,179	9,361	10,426	10,859	10,750	10,778	10,780	10,856
Gross Profit (Loss)	(247)	(228)	(1,284)	25	3,982	2,250	2,222	2,220	2,144
Interest	718	810	818	996	980	679	533	429	305
Adm. & Selling Expenses	318	412	343	452	472	467	443	432	418
Financial Net Profit (Loss)	(1,283)	(1,450)	(2,445)[1]	(1,423)[2]	2,530	1,104	1,246	1,359	1,421

1/ Not including other income of Tk 65/ton.

2/ Not including other income of Tk 28/ton.

1/14/80

B A N G L A D E S H

Jute Industry Rehabilitation Project

SACKING

Income Statements of Jute Mills

(Taka/ton)

	A C T U A L				T A R G E T (Constant 1979 Taka)				
	FY76	FY77	FY78	FY79	FY80	FY81	FY82	FY83	FY84
Sales	4,993	4,758	6,127	7,617	9,903	8,000	8,000	8,000	8,000
Raw Materials	2,618	3,072	4,252	4,536	4,079	4,022	4,142	4,262	4,382
Conversion Cost	1,589	1,643	2,032	2,861	3,072	3,088	3,103	3,128	3,259
Of which Factory Wages	863	899	1,507	2,000	1,971	1,940	1,938	1,946	2,059
Depreciation	164	167	160	199	190	186	189	193	197
Inventory Adj.	(77)	(97)	(230)	(113)	165	14	(18)	-	-
Costs of Goods Sold	4,294	4,785	6,214	7,483	7,506	7,310	7,416	7,583	7,838
Gross Profit (Loss)	699	(27)	(87)	134	2,397	690	584	417	162
Interest	301	312	589	478	453	328	281	239	184
Adm. & Selling Expenses	216	228	213	281	313	313	313	312	313
Financial Net Profit (Loss)	182	(557)	(889) 1/	(625) 2/	1,631	49	(10)	(134)	(335)

1/ Not including other income of Tk 17/ton.

2/ Not including other income of Tk 17/ton.

1/10/80

B A N G L A D E S H

Jute Industry Rehabilitation Project

Income Statements of Jute Mills

CARPETBACKING

(Taka/ton)

	A C T U A L				T A R G E T (Constant 1979 Taka)				
	FY76	FY77	FY78	FY79	FY80	FY81	FY82	FY83	FY84
Sales	8,089	7,899	8,892	10,714	14,018	14,000	14,000	14,000	14,000
Raw Materials	4,294	4,668	5,802	6,111	5,884	6,046	6,208	6,370	6,532
Conversion Cost	2,813	2,913	3,985	4,867	5,300	5,058	5,187	5,107	5,168
Of which Factory Wages	1,282	1,333	2,281	2,823	2,835	2,693	2,836	2,810	2,917
Depreciation	576	628	619	723	754	665	662	646	635
Inventory Adj.	13	(116)	(187)	(184)	(4)	(6)	(11)	-	-
Cost of Goods Sold	7,696	8,093	10,219	11,517	11,934	11,763	12,046	12,123	12,335
Gross Profit (Loss)	393	(194)	(1,327)	(803)	2,084	2,237	1,954	1,877	1,665
Interest	1,152	1,217	1,258	1,556	1,527	993	833	680	501
Adm. & Selling Expenses	401	424	338	415	472	452	448	441	434
Financial Net Profit (Loss)	(1,160)	(1,835)	(2,923)	1/(2,774)	2/ 85	792	673	756	730

1/ Not including other income of Tk 37/ton.

2/ Not including other income of Tk 34/ton.

1/10/80

B A N G L A D E S H

Jute Industry Rehabilitation Project

Income Statements of Jute Mills

OTHERS

(Taka/ton)

	A C T U A L				T A R G E T (Constant 1979 Taka)				
	FY76	FY77	FY78	FY79	FY80	FY81	FY82	FY83	FY84
Sales	4,607	5,070	6,150	12,712	12,015	12,000	12,000	12,000	12,000
Raw Materials	3,034	3,865	4,709	7,014	5,224	4,739	4,876	5,013	5,150
Conversion Cost	1,448	1,615	2,138	3,135	3,719	3,045	3,190	3,242	3,394
Of which Factory Wages	632	730	1,239	1,860	2,281	1,874	2,000	2,032	2,163
Depreciation	252	260	193	236	239	1,977	2,011	2,050	2,098
Inventory Adj.	(15)	(471)	102	280	1,562	(1,562)	(299)	-	-
Cost of Goods Sold	4,719	5,269	7,142	10,665	10,744	8,199	9,778	10,305	10,642
Gross Profit (Loss)	(112)	(199)	(992)	2,047	1,271	3,801	2,222	1,695	1,358
Interest	401	541	549	851	938	2,383	2,076	1,789	1,421
Adm. & Selling Expenses	298	359	209	253	197	198	198	198	198
Financial Net Profit (Loss)	(811)	(1,099)	(1,750) 1/	943 2/	136	1,220	(52)	(292)	(261)

1/ Not including other income of Tk 29/ton.

2/ Not including other income of Tk 48/ton.

1/10/80

B A N G L A D E S H

Jute Industry Rehabilitation Project

Consolidated Balance Sheets of Jute Mills

(Taka in 10m)

	A C T U A L				T A R G E T (Constant 1979 Taka)				
	FY76	FY77	FY78	FY79	FY80	FY81	FY82	FY83	FY84
ASSETS									
Cash in Hand/at Bank	5	6	8	9	9	9	9	9	9
Other Current Assets	213	246	312	403	403	403	403	403	403
Total Current Assets	218	252	320	412	412	412	412	412	412
Gross Fixed Assets	291	278	301	318	328	374	389	408	418
Less: Accum. Depreciation	98	108	128	148	166	186	207	228	250
Net Fixed Assets	193	170	173	170	162	188	182	180	168
Investments & Other Assets	12	10	12	13	13	13	13	13	13
TOTAL ASSETS	423	432	505	595	587	613	607	605	593
LIABILITIES									
Cash Credit	91	118	169	163	163	133	103	73	43
Other Current Liabilities	85	162	154	227	188	188	188	183	174
Total Current Liabilities	176	280	323	390	351	321	291	256	217
BSB/BSRS/Others	197	163	201	226	132	101	82	64	51
BJMC	62	53	85	112	-	35	40	45	45
Debentures	42	41	40	43	41	39	29	27	25
Total Term Loans	301	257	326	381	173	175	151	136	121
Equity at Beginning of Year	(26)	(54)	(105)	(144)	(176)	63	117	165	213
Equity Contrib. & Subsidy 1/	-	2	56	29	209	42	36	35	30
Net Profit (Loss)	(28)	(53)	(95)	(61)	30	12	12	12	11
Equity at End of Year	(54)	(105)	(144)	(176)	63	117	165	213	255
TOTAL LIABILITIES	423	432	505	595	587	613	607	605	593
RATIOS									
LTD/Equity Ratio	NEG	NEG	NEG	NEG	71:29	60:40	48:52	39:61	32:68
Current Ratio	1.24:1	0.90:1	0.99:1	1.06:1	1.17:1	1.28:1	1.42:1	1.61:1	1.90:1

1/ Of which Tk 73 crores paid in FY79, but not yet entered into FY79 accounts (equity: Tk 30 crores; subsidy: Tk 43 crores).

1/10/80

BANGLADESH

Jute Industry Rehabilitation Project

Proposed Consolidated Capital Restructuring of Jute Mills

(Taka in 10m)

		FY80	FY81	FY82	FY83	FY84	TOTAL
A.	LOAN CONVERSIONS						
	GOB Loan	50	-	-	-	-	50
	ADP Loans	38	-	-	-	-	38
		88	-	-	-	-	88
B.	PROPOSED GOB CASH INFUSION FOR REPAYMENT OF LOANS						
	BSB	27	9	9	9	6	60
	BSRS	29	9	8	8	7	61
	Bangladesh/Janata Bank Debentures	20	-	-	-	-	20
	Commercial Bank Debentures	2	2	2	2	2	10
		78	20	19	19	15	151
C.	PROPOSED GOB CASH INFUSIONS FOR OTHER PURPOSES	-	34	29	29	27	119
D.	B+C	78	54	48	48	42	270
E.	NET PROFIT OF JUTE MILLS AFTER TAXES	30	12	12	13	12	79
F.	PROJECTED GOB CASH INFUSION (D-E)	48	42	36	35	30	191

1/10/80

B A N G L A D E S H

Jute Industry Rehabilitation Project

Consolidated Cash Flow Projections of the Jute Mills (Taka in 10m)

	FY80	FY81	FY82	FY83	FY84
SOURCES OF FUNDS					
Net Profit after Taxes	30	12	12	13	12
Depreciation	18	20	21	21	22
Cash Generation	48	32	33	34	34
GOB Cash Infusion	48	42	36	35	30
GOB Loan Conversions	88	0	0	0	0
New Borrowing 1/	0	35	5	5	0
Equity Contribution & Subsidy 2/	73	0	0	0	0
Total Sources of Funds	257	109	74	74	64
USES OF FUNDS					
Rehabilitation Project	0	9	7	9	0
2 Carpet Mills	0	30	0	0	0
Other Capital Investments	10	7	8	10	10
Conversion of Loans into Equity	88	0	0	0	0
Repayment of Borrowing	120	33	29	20	15
Decrease of Current Liabilities	39	30	30	35	39
Increase (Decrease) in Cash/Bank	0	0	0	0	0
TOTAL USES OF FUNDS	257	109	74	74	64

1/ Tk 30 crores in FY81 for the two new jute carpet mills. Tk 5 crores in FY81, FY82, and FY83 for the proposed Jute Industry Rehabilitation Project.

2/ Already paid, but not yet entered into accounts (equity: 30 crores; subsidy: 43 crores).

1/10/80

BANGLADESH

JUTE INDUSTRY REHABILITATION PROJECT

Assumptions Used in the Financial Projections

1. In the preparation of the financial projections for the proposed project, all costs and revenues are based on constant 1979 taka, except for raw jute and wages (see below).

2. Production of jute goods (in '000 tons).

	FY80	FY81	FY82	FY83	FY84
Hessian	194	205	228	241	260
Sacking	230	244	244	244	244
Carpetbacking	88	90	92	96	100
Others	13	11	11	11	11
Total	525	550	575	592	615

3. Sales of jute goods (in '000 tons)

	FY80			FY81		
	Export	Domestic	Total	Export	Domestic	Total
Hessian	184	7	191	197	8	205
Sacking	182	28	210	213	31	244
Carpetbacking	85	1	86	89	1	90
Others	9	4	13	7	4	11
Total	460	40	500	506	44	550

	FY82			FY83		
	Export	Domestic	Total	Export	Domestic	Total
Hessian	218	10	228	230	11	241
Sacking	213	31	244	213	31	244
Carpetbacking	91	1	92	95	1	96
Others	7	4	11	7	4	11
Total	529	46	575	545	47	592

	FY 84		
	Export	Domestic	Total
Hessian	247	13	260
Sacking	213	31	244
Carpetbacking	99	1	100
Others	7	4	11
Total	566	49	615

4. Sales Price in taka per ton

	FY80	FY81	FY82	FY83	FY84
Hessian	14,841	13,000	13,000	13,000	13,000
Sacking	9,903	8,000	8,000	8,000	8,000
Carpetbacking	14,018	14,000	14,000	14,000	14,000
Others	12,015	12,000	12,000	12,000	12,000

5. Raw Jute Price. For raw jute, annual price increases of about 2.5% have been assumed.

	FY80	FY81	FY82	FY83	FY84
White X-Bottom (taka/maund)	145	150	155	160	165

6. Wastage. The wastage has been assumed at 1% (jute to jute) and at 6.5% (total wastage).

7. Wages. Wages include (i) normal annual increments for workers, (ii) a 5% increase in FY82 and (iii) a 5% increase in FY84.

8. Salaries. Salaries include about 5% normal annual increments for officers and staff.

9. Power/Electricity. The projections include the 50% rate increase of August 1979.

10. Depreciation. Starting in FY81, depreciations include those from the two new jute carpet mills (Baghdad-Dacca and Furat-Karnafuli). Depreciation has also been calculated for the rehabilitation scheme and other capital investments.

11. The financial projections include the interest savings on short- and long-term loans resulting from the proposed capital restructuring and the expected profits.

BANGLADESH

JUTE INDUSTRY REHABILITATION PROJECT

CALCULATION OF FINANCIAL RATE OF RETURN

	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90
1. Incremental Production due to Project (in tons)[1/]										
Hessian (30%)	-	2,300	7,200	16,500	16,500	16,500	16,500	16,500	16,500	16,500
Carpetbacking (20%)	-	133	800	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Sacking	-	0	0	0	0	0	0	0	0	0
2. Conversion Cost Savings due to Project (in %)	-	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
in taka per ton	-	22	44	66	88	110	132	154	176	198
3. Cost and Benefits of Project (in Tk 10 million)										
Project Cost	(8.55)	(8.55)	(8.55)	-	-	-	-	-	-	-
Profits on Incremental Production due to project	-	0.3	1.1	2.6	2.7	2.6	2.7	2.6	2.7	2.6
Conversion Cost Savings	-	1.2	2.4	3.6	4.8	6.0	7.3	8.5	9.7	10.9
Total	(8.55)	(7.05)	(5.05)	6.2	7.5	8.6	10.0	11.1	12.4	13.5
IRR = 26.25%										
4. Sensitivity Analysis										
Assumption: Production costs increase or sales prices decrease to a level where financial profits are zero.										
Cost/Benefit Stream (in taka 10 million)	(8.55)	(7.35)	(6.15)	3.6	4.8	6.0	7.3	8.5	9.7	10.9
IRR = 16.54%										

1/ Incremental production due to project is assumed to increase by one-third in FY82 through FY84.

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JUTE INDUSTRY REHABILITATION PROJECT

CALCULATION OF ECONOMIC RATE OF RETURN

Assumptions

Shadow rate for foreign exchange 1.25 (US$1 = Tk 19.4)
Shadow rate for wages 0.5
Raw jute: (i) raw jute = 90% of raw material cost
(ii) economic price (cost) of raw jute = 110% of financial cost
(iii) 25% of raw jute would be exported, thus shadow exchange rate is applied.
Omission of interest payments (transfer payments)
Omission of depreciation (sunk costs)
In FY82 one-third of projected production increase is attributed to the project, in FY83 two-thirds, and in FY84 and thereafter all of the production increases.

	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90
1. Economic cost of project (in Tk 10 million)										
Foreign	5.45	5.45	5.45	-	-	-	-	-	-	-
Local	2.66	2.66	2.66	-	-	-	-	-	-	-
Total	8.11	8.11	8.11	-	-	-	-	-	-	-
2. Economic profit per ton of exports (tk per ton)										
Hessian	-	6,322	6,273	6,196	6,196	6,196	6,196	6,196	6,196	6,196
Carpetbacking	-	6,143	6,020	5,833	5,833	5,833	5,833	5,833	5,833	5,833
3. Economic profit per ton of domestic sales (tk per ton)										
Hessian	-	3,072	3,023	2,946	2,946	2,946	2,946	2,946	2,946	2,946
Carpetbacking	-	2,643	2,520	2,333	2,333	2,333	2,333	2,333	2,333	2,333
4. Incremental exports due to project (in tons)										
Hessian (30% of tot. inc.)	-	2,100	6,500	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Carpetbacking (20% of tot. inc.)	-	133	800	2,000	2,000	2,000	2,000	2,000	2,000	2,000
5. Incremental domestic sales due to project (in tons)										
Hessian (30%)	-	200	600	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Carpetbacking	-	-	-	-	-	-	-	-	-	-
6. Conversion cost savings in economic terms (taka per ton)	-	11	22	33	44	55	66	77	88	99
7. Economic cost and benefits of project (in Tk 10 million)										
Project cost	(8.11)	(8.11)	(8.11)	-	-	-	-	-	-	-
Conversion cost savings	-	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4
Exports:										
- Hessian	-	1.3	4.1	9.3	9.3	9.3	9.3	9.3	9.3	9.3
- Carpetbacking	-	0.1	0.5	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Domestic sales:										
- Hessian	-	0.1	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	(8.11)	(6.01)	(2.11)	12.7	13.3	13.9	14.5	15.1	15.7	16.3
ERR = 44.2%										
8. Sensitivity Analysis (Assumption: Decrease of sales prices for hessian and carpetbacking, so that net financial profit per ton is zero).										
Economic profit of exports (tk per ton)										
- Hessian	4,648	4,457	4,307	4,307	4,307	4,307	4,307	4,307	4,307	4,307
- Carpetbacking	5,301	5,075	4,920	4,920	4,920	4,920	4,920	4,920	4,920	4,920
Economic profit of domestic sales (tk per ton										
- Hessian	1,733	1,570	1,435	1,435	1,435	1,435	1,435	1,435	1,435	1,435
Cost/benefit stream (in taka 10 million)	(8.11)	(6.31)	(3.41)	9.4	10.0	10.6	11.2	11.8	12.4	13.0
ERR = 34.3%										

ANNEX 19

B A N G L A D E S H

Jute Industry Rehabilitation Project

Selected Documents and Data Available in the Project File

A. Selected Reports on the Sector

World Bank Reports

A-1 Bangladesh Jute Project
Appraisal Report No. 1587-BD
December 29, 1977

A-2 Fourth to Eighth Imports Program Credits to Bangladesh

A-3 Bangladesh -- Issues and Prospects for Industrial Development (Report No. 2191-BD)

B. Selected Reports and Studies Relating to the Project

B-1 Jute Sector Study, Draft Final Report by Economic Consultants Limited with PA Management Consultants Limited, August 1978

Vol. I: Summary of Findings and Recommendations
Vol. II: Market for Jute Goods and Raw Jute
Vol. III: Supply of Raw Jute
Vol. IV: Jute Mill Appraisal, Investment and Development Strategy
Vol. V: Organization, Finance Management, and Labour Aspects

B-2 Internal Marketing and Pricing of Jute, Draft Final Report by Economic Consultants Limited with PA Management Consultants Limited, December 1978

B-3 Study Group Proposal; Draft Papers submitted by GOB in May 1979 reviewing the ECL/PA proposal.

Paper I: Plans for Reorganization in the Jute Industry and Regrouping of the Mills

Paper II: Plans for Rehabilitation of the Jute Mills and Intermill Transfer of Machinery

Paper III: Projection of Export and Domestic Needs of Jute Goods

Paper IV: Policy on Raw Jute Pricing

Paper V: Plans for the Training Programme for the Jute Industry

B A N G L A D E S H

Jute Industry Rehabilitation Project

Estimated Disbursement Schedule
(US$ Million)

1980	
July-September	1.0
October-December	1.0
Subtotal	2.0
1981	
January-March	2.0
April-June	2.0
July-September	2.0
October-December	2.0
Subtotal	8.0
1982	
January-March	2.0
April-June	2.0
July-September	1.5
October-December	1.5
Subtotal	7.0
1983	
January-March	1.5
April-June	1.5
Subtotal	3.0
TOTAL	20.0

BANGLADESH
JUTE INDUSTRY REHABILITATION PROJECT
ORGANIZATION–CUM–FUNCTIONAL CHART OF MINISTRY OF JUTE
(DECEMBER 1979)

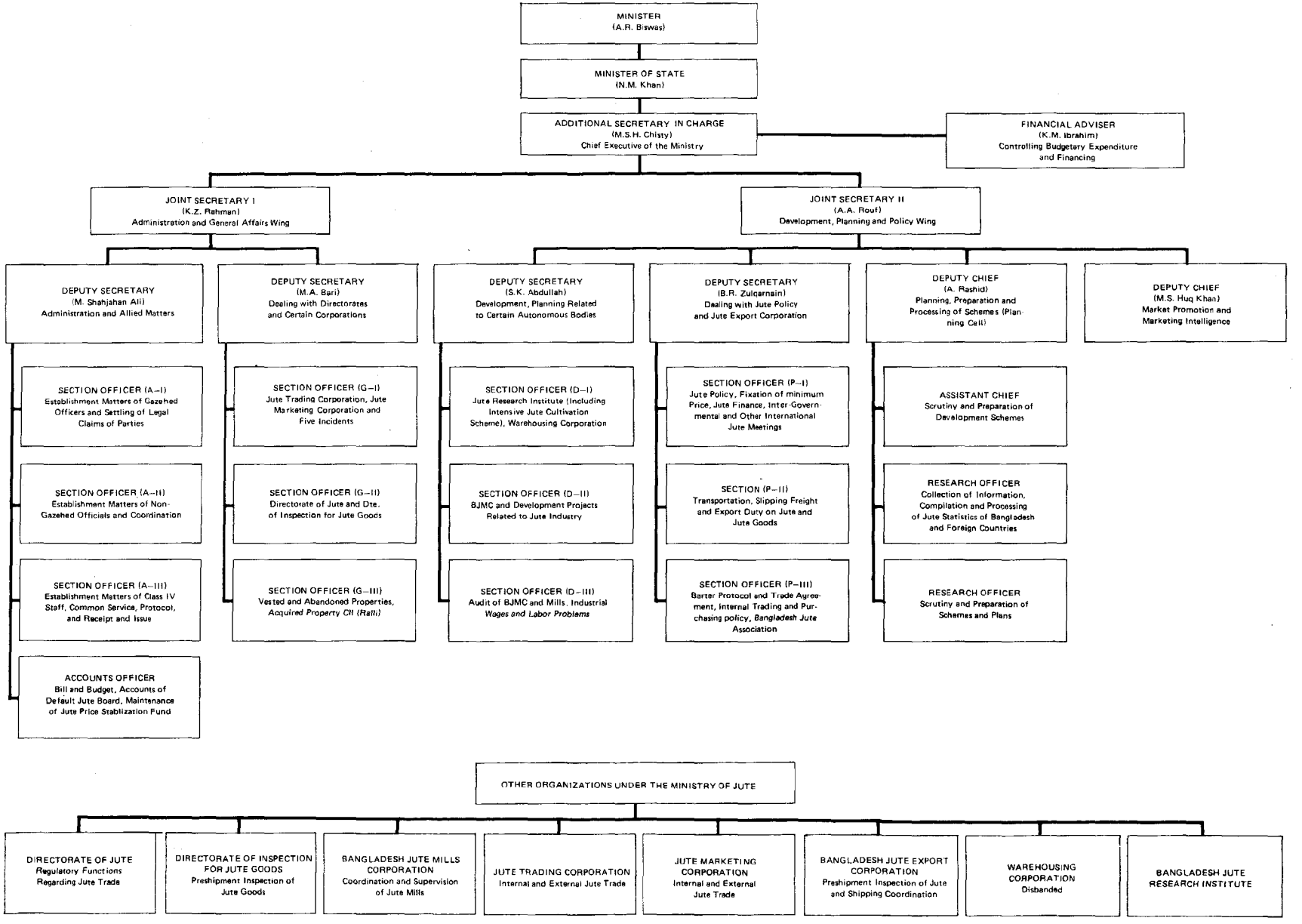
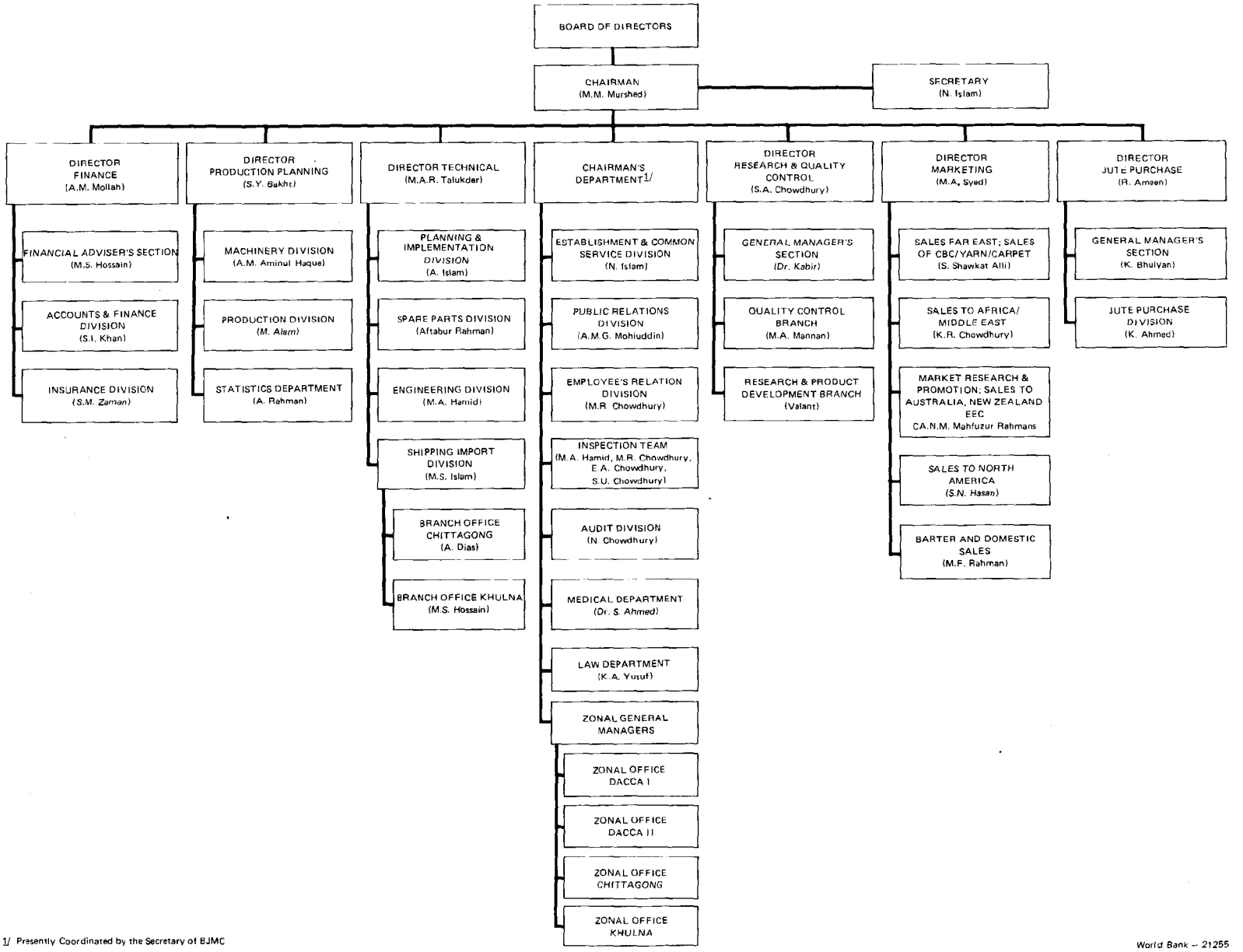


CHART 1

World Bank – 21254

BANGLADESH
JUTE INDUSTRY REHABILITATION PROJECT
PRESENT ORGANIZATION OF BJMC–HEAD OFFICE
(DECEMBER 1979)

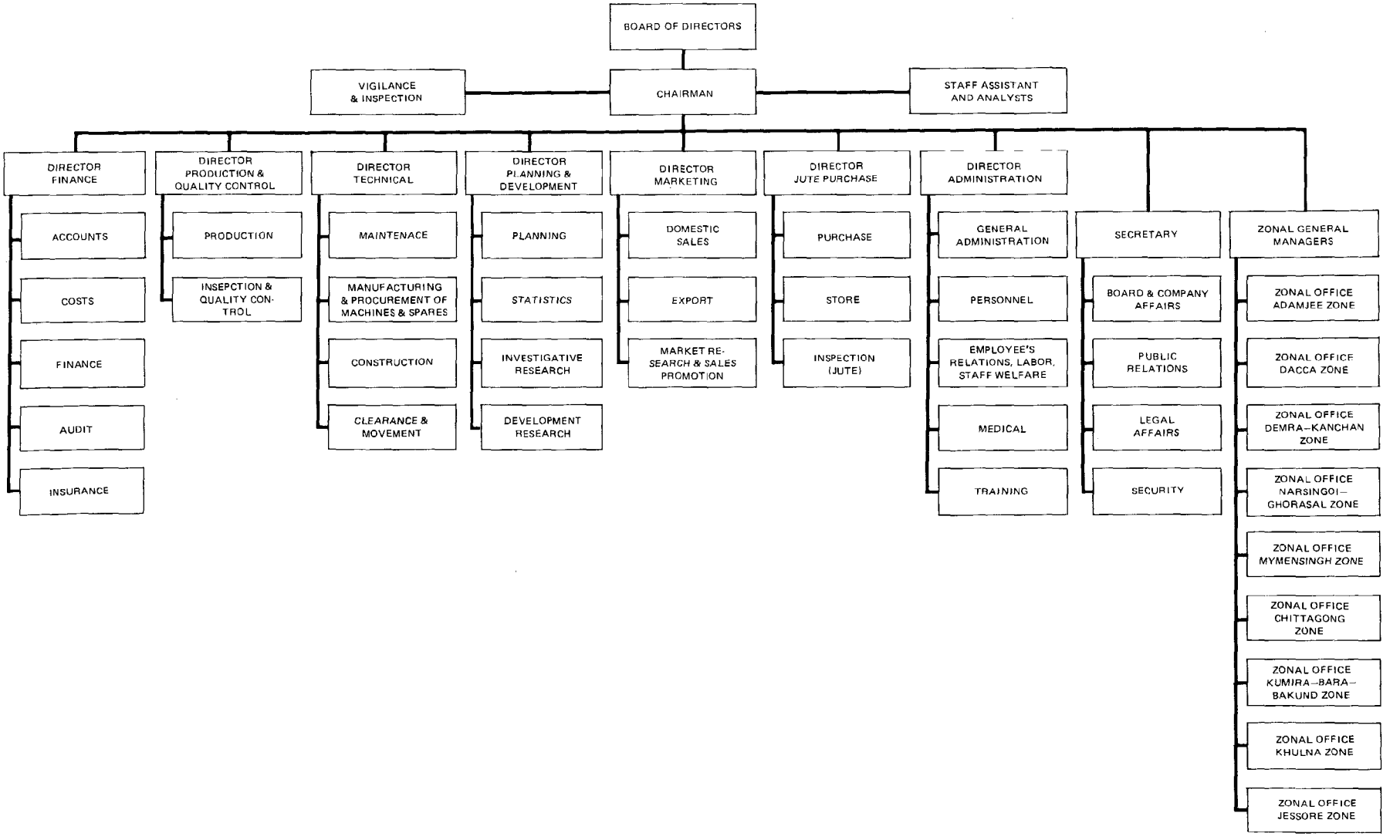


1/ Presently Coordinated by the Secretary of BJMC

CHART 2

World Bank – 21255

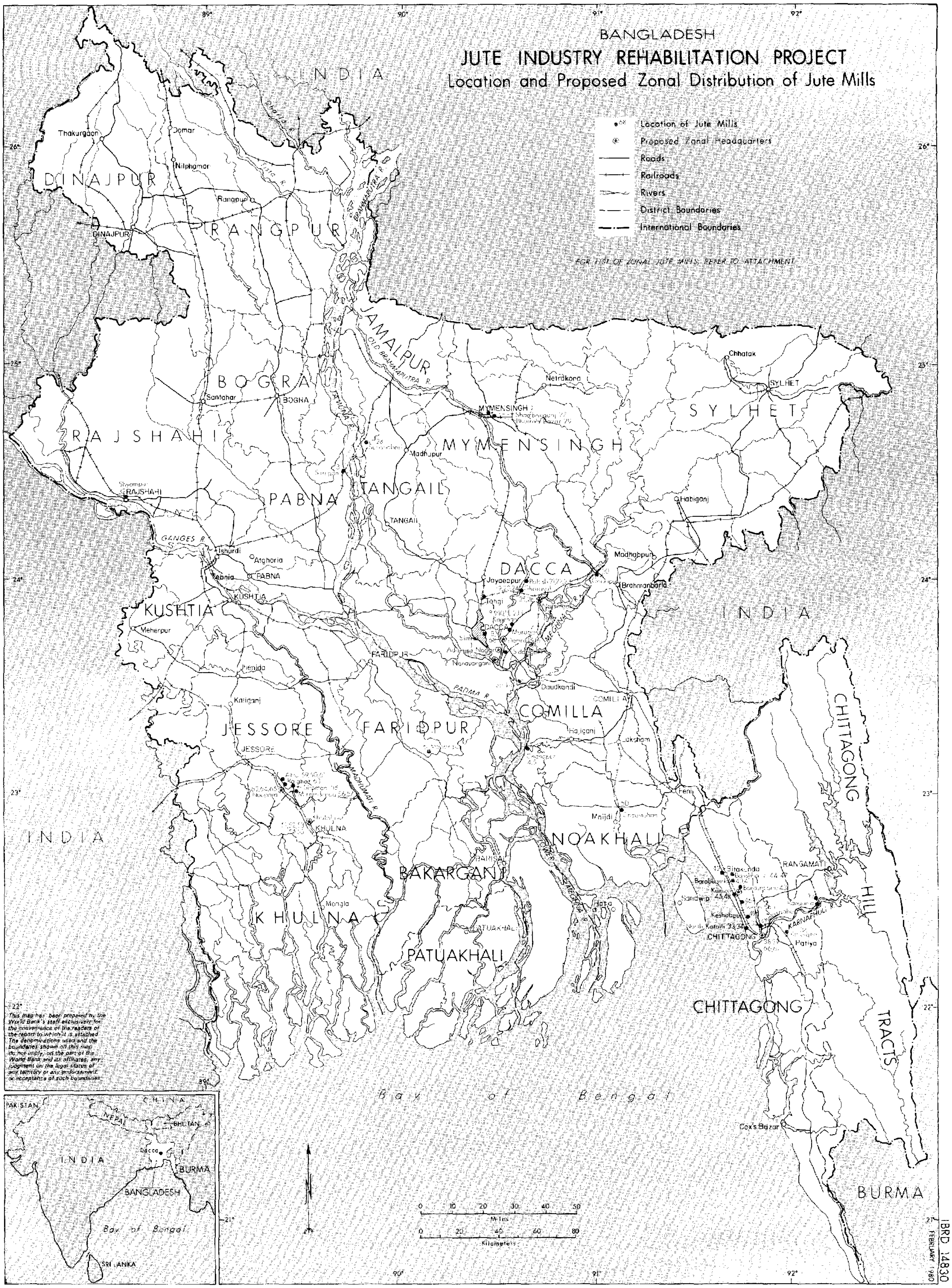
BANGLADESH
JUTE INDUSTRY REHABILITATION PROJECT
PROPOSED ORGANIZATION OF BJMC–HEAD OFFICE



December 1979

World Bank – 21256

CHART 3


BANGLADESH
JUTE INDUSTRY REHABILITATION PROJECT
Location and Proposed Zonal Distribution of Jute Mills
Location of Jute Mills
Proposed Zonal Headquarters
Roads
Railroads
Rivers
District Boundaries
International Boundaries
FOR LIST OF ZONAL JUTE MILLS, REFER TO ATTACHMENT
INDIA
DINAJPUR
RANGPUR
BOGRA
RAJSHAHI
PABNA
TANGAIL
JAMALPUR
MYMENSINGH
SYLHET
DACCA
KUSHTIA
JESSORE
FARIDPUR
COMILLA
NOAKHALI
BAKARGANJ
KHULNA
PATUAKHALI
CHITTAGONG
CHITTAGONG HILL TRACTS
BURMA
Bay of Bengal
Thakurgaon
Domar
Nilphamari
Rangpur
Santahar
BOGRA
Chhatak
SYLHET
Netrakona
MYMENSINGH
Madhupur
Habiganj
Sirajganj
RAJSHAHI
TANGAIL
Ishurdi
Atgharia
PABNA
KUSHTIA
Meherpur
Jayadebpur
Tongi
Madhabpur
Brahmanbaria
Narayanganj
Daudkandi
COMILLA
Hajiganj
Laksham
Feni
Maijdi
FARIDPUR
Kaliganj
JESSORE
KHULNA
Mongla
PATUAKHALI
Hatia
Sitakunda
RANGAMATI
Sandwip
CHITTAGONG
Patiya
KARNAPHULI R.
Cox's Bazar
GANGES R.
PADMA R.
MADHUMATI R.
BRAHMAPUTRA R.
OLD BRAHMAPUTRA R.
JAMUNA
MEGHNA
This map has been prepared by the World Bank's staff exclusively for the convenience of the readers of the report to which it is attached. The denominations used and the boundaries shown on this map do not imply, on the part of the World Bank and its affiliates, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.
PAKISTAN
CHINA
NEPAL
BHUTAN
INDIA
Dacca
BURMA
BANGLADESH
Bay of Bengal
SRI LANKA
0 10 20 30 40 50
Miles
0 20 40 60 80
Kilometers
89°
90°
91°
92°
26°
25°
24°
23°
22°
21°
IBRD 14830
FEBRUARY 1980

Attachment to Map

B A N G L A D E S H
Jute Industry Rehabilitation Project

Proposed Zonal Distribution of Mills

ADAMJEE ZONE

Headquarters: Adamjee Nagar

1--Adamjee Jute Mills Ltd.[1/]
Adamjee Nagar
Narayanganj, Dacca

DACCA ZONE

Headquarters: Narayanganj

2--The Bawa Jute Mills Ltd.
Madanganj, Narayanganj
Dacca

3--Broad Burlap Industries Ltd.
Batka, Dacca

4--Star Alkaid Jute Mills Ltd.
Chandpur, Comilla

5--W. Rahman Jute Mills Ltd.
Chandpur, Comilla

6--A. R. Howlader Jute Mills Ltd.
Madaripur, Faridpur

7--Nishat Jute Mills Ltd.
Tongi, Dacca

DEMRA-KANCHAN ZONE

Headquarters: Demra

8--Nawab Askari Jute Mills Ltd.
Kanchan, Dacca

9--Mashrique Jute Mills Ltd.
Kanchan, Dacca

10-Allied Jute Mills Ltd.
Kanchan, Dacca

11-Nabarun Jute Mills Ltd.
Kanchan, Dacca

DEMRA-KANCHAN ZONE (continued)

12-Sattar Jute Mills Ltd.
Kanchan, Dacca

13-Ashraf Jute Mills Ltd.
Kanchan, Dacca

14-Gawsia Jute Mills Ltd.
Murapara, Dacca

15-Latif Bawani Jute Mills Ltd.
Demra, Dacca

16-Karim Jute Mills Ltd.
Demra, Dacca

17-Munawar Jute Mills Ltd.
Siddirganj, Dacca

18-Taj Jute Backing Co. Ltd.
Simrail, Demra
Dacca

NARSINGDI-GHORASAL ZONE

Headquarters: Narsingdi

19-Pubali Jute Mills Ltd.
Ghorasal, Dacca

20-Bangladesh Jute Mills Ltd.
Ghorasal, Dacca

21-Janata Jute Mills Ltd.
Palash (Ghorasal) Dacca

22-Co-operative Jute Mills Ltd.
Ghorasal, Palash
Dacca

23-Fauji Chatkal
Palash (Ghorasal)
Dacca

24-National Jute Mills Ltd.
Ghorasal, Dacca

25-United Jute Mills Ltd.
Narsingdi, Dacca

26-Alijan Jute Mills Ltd.
Narshingdi, Dacca

1/ Associated with this mill is the Associated Bagging Co. Ltd., Adamjee Nagar, Narayanganj, Dacca.

MYMENSINGH ZONE

Headquarters: Mymensingh

27-Mymensingh Jute Mills Ltd.
Shambhuganj, Mymensingh

28-Alhaj Jute Mills Ltd.
Sarishabari, Jamalpur

29-Jabbar Jute Mills Ltd.
Bhairab Bazar, Mymensingh

30-Kohinoor Jute Mills Ltd.
Gouripur, Dacca

31-Quami Jute Mills Ltd.
Sirajganj, Pabna

32-Rajshahi Jute Mills Ltd.
Shyampur, Rajshahi

CHITTAGONG ZONE

Headquarters: Chittagong

33-A. K. Khan Jute Mills Ltd.
North Kattali, Chittagong

34-Victory Jute Mills Ltd.
North Kathali, Chittagong

35-Amin Jute Mills Ltd.
Sholashahar, Chittagong

36-Chittagong Jute Mfg. Co. Ltd.
Kalurghat, Chittagong

37-Karnafuli Jute Mills Ltd.
Rangunia, Chittagong

38-Bagdad-Dacca Carpet Mills
Chittagong

39-Forat-Karnafuli Carpet Mills
Chittagong

KUMIRA-BARABAKUND ZONE

Headquarters: Kumira (Gul Ahmed Jute Mills premises)

40-S. K. M. Jute Mills Ltd.
Barabkanda, Chittagong

41-M. Rahman Jute Mills Ltd.
Barabkanda, Chittagong

42-Anowara Jute Mills Ltd.
Sitakunda, Chittagong

43-M. M. Jute Mills Ltd.
Barashbaria, Chittagong

44-R. R. Jute Mills Ltd.
Banshbaria, Chittagong

45-Hafiz Textile Mills Ltd.
Kumira, Chittagong

46-Hafiz Jute Mills Ltd.
Sonaichari, Chittagong

47-Gul-Ahmed Jute Mills Ltd.
Banshbaria, Chittagong

48-Sultana Jute Mills Ltd.
Kumira, Chittagong

49-Quasem Jute Mills Ltd.
Keshabpur, Chittagong

50-Delta Jute Mills Ltd.
Chaumuhani, Noakhali

KHULNA ZONE

Headquarters: Khalishpur

51-Daulatpur Jute Mills Ltd.
Khalishpur, Khulna

52-Star Jute Mills Ltd.
Khalishpur, Khulna

53-Platinum Jubilee Jute Mills Ltd.
Town Khalishpur, Khulna

54-Crecent Jute Mills Ltd.
Khalishpur, Khulna

55-Peoples Jute Mills Ltd.
Town Khalishpur, Khulna

56-Ajax Jute Mills Ltd.
Mirrerdanga, (Atra) Khulna

57-Sonali Jute Mills Ltd.
Mirrerdanga (Atra) Khulna

58-Mohsen Jute Mills Ltd.
K.D.A. Industrial Estate
(Siramoni) Khulna

JESSORE ZONE

Headquarters: Noapara (Jessore Jute Mills premises)

59-Afil Jute Mills Ltd.
Atra, Khulna

60-Aleem Jute Mills Ltd.
Atra, Khulna

61-Eastern Jute Mills Ltd.
Atra, Khulna

62-Purbachal Jute Industries Ltd.
Noapara, Jessore

63-Jessore Jute Industries Ltd.
Rajghat, Noapara, Jessore

64-Carpeting Jute Mills Ltd.
Noapara, Jessore

65-Noapara Jute Mills Ltd.
Noapara, Jessore

OTHER UNITS

66-Gulfra Habib Spare & Machinery
Producing Plant
Chittagong

67-Mills Furnishing Ltd.
Chittagong

68-Jute Plastic Plant
Dacca