Jute Manufacturing Sector of Bangladesh
Challenges, Opportunities and Policy Options

Paper 78

Khondaker Golam Moazzem
Md. Tariqur Rahman
Abdus Sobhan

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Centre for Policy Dialogue (CPD)
House No. 40/C, Road No. 11 (New),
Dhanmondi R/A, Dhaka-1209
Bangladesh
Tel: (880 2) 8124770, 9141703, 9141734
Fax: (880 2) 8130951
E-mail: info@cpd.org.bd
Website: www.cpd.org.bd

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The present paper titled "Jute Manufacturing Sector of Bangladesh: Challenges, Opportunities and Policy Options" is an output of the study on *Performance of the Jute Sector in Bangladesh: Challenges, Opportunities and Policy Options*. The study has been conducted as part of CPD's *Independent Review of Bangladesh's Development (IRBD)* programme. The major objective of the study is to assess the viability of jute and jute sector of Bangladesh, and to come up with a long term strategy for development of this sector. The focus of the present paper is on economic, technological and worker related issues of jute mills, opportunities and challenges faced by the jute manufacturing industry, and possible policy options with a view to develop a viable and an efficient jute manufacturing sector in the country.

The paper has been prepared by *Khondaker Golam Moazzem,* Senior Research Fellow, *Md Tariqur Rahman,* Research Associate and *Abdus Sobhan,* Programme Associate, CPD.

Assistant Editor: *Anisatul Fatema Yousuf,* Director (Dialogue & Communication), CPD.
Series Editor: *Professor Mustafizur Rahman,* Executive Director, CPD

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Khondaker Golam Moazzem
Md Tariqur Rahman
Abdus Sobhan

Acronyms

BBS	Bangladesh Bureau of Statistics
BJA	Bangladesh Jute Association
BJGA	Bangladesh Jute Goods Association
BJMA	Bangladesh Jute Mills Association
BJMC	Bangladesh Jute Mills Corporation
BJRI	Bangladesh Jute Research Institute
BJSA	Bangladesh Jute Spinners Association
CBC	Carpet Backing Cloth
CEO	Chief Executive Officer
CPB	Communist Party of Bangladesh
CPD	Centre for Policy Dialogue
EPB	Export Promotion Bureau
EU	European Union
FAO	Food and Agriculture Organization
FY	Fiscal Year
GDP	Gross Domestic Product
GM	General Manager
GoB	Government of Bangladesh
HS	Harmonised System
IDRL	International Development Ireland Limited
IJSG	International Jute Study Group
JSAC	Jute Sector Adjustment Credit
RMG	Readymade Garment
SAFTA	South Asian Free Trade Area
UN	United Nations
USD	United States Dollar
XPB	Export Bonus
MT	Metric Ton

CONTENTS

List of Tables, Figures and Map

Tables

Figures

Map

1. Introduction and Objectives

Jute manufacturing sector is one of the oldest traditional manufacturing sectors of Bangladesh, which emerged in erstwhile East Pakistan in the early 1950s. During the 1960s and 1970s major share of the manufacturing sector in national income and manufacturing employment was accounted for by this sector. Exports of jute and jute goods were the two most important sources of foreign exchange of Pakistan during the 1960s. However, both share and importance of jute and jute goods in manufacturing, export and overall foreign exchange earnings, and the Gross Domestic Product (GDP) have gradually declined over time. The sector currently accounts for a more 3.9 per cent of the country's total export, which is of extremely low significance when compared to its contribution in the overall export observed during the1970s (89.9 per cent in 1973). The ascendancy of the export-oriented readymade garments (RMG) was a major reason. However, this was also the result of successive policies pursued by Bangladesh alongside decline in the demand for jute goods in both domestic and international markets over time.

In July 2007, Government of Bangladesh (GoB) took a number of decisions as regards public sector jute mills and their poor performance. The major decisions included: closing down four jute mills – Peoples, Karnaphuli, Forat-Karnaphuli, and Kaomi and retrenchment of 14,000 workers from 22 state-owned jute mills, of which 6,000 workers were from the four closed down jute mills and another 8,000 workers were from the remaining 18 jute mills as a result of which the total work force of Bangladesh Jute Mills Corporation (BJMC) mills was decreased by 50 per cent. The government agreed to provide Tk. 200 crore to finance procurement of raw jute of which Tk. 138 crore was to be financed from banks through issuing of government bonds. Procurement target was set at 55 lakh tonnes of raw jute from 58 procurement centres for the 18 jute mills. Government also took the initiative to sell 120 acres of land (out of BJMC's 1,200 acres of land) to generate more funds for the industry.

Various stakeholders and civil society organisations have expressed concerns with regard to the economic judgment which led the government to close down the jute mills and retrench workers at a time when it was widely believed that resurgence of jute was emerging in both global and domestic markets.

Major objectives of the present study are:

a) To understand the changes in structure and composition of jute manufacturing sector of Bangladesh and analyse economic, technological, managerial and labour related issues of the jute manufacturing sector under different regimes.
b) To study economic, technological and worker related issues of jute mills currently in operation, under the public and private sectors, in order to identify major factors responsible for their efficiencies/ inefficiencies.
c) To identify opportunities and challenges that needs to be confronted by the jute manufacturing sector in the near future.
d) To extract appropriate policy suggestions with a view to develop a viable and efficient jute manufacturing sector.

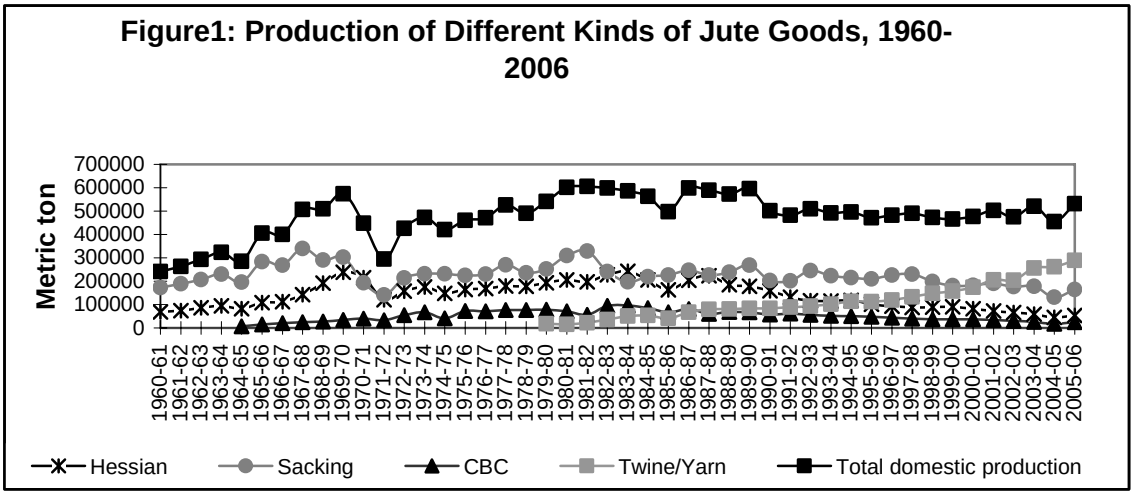
2. Methodology of the Study

The CPD conducted a primary survey of 45 jute mills in 2007—these accounted for about 35 per cent of the total number of jute mills currently in operation in Bangladesh. Of the 45 jute mills, 14 jute mills were owned by the BJMC, 17 by the Bangladesh Jute Mills Association (BJMA) members and 14 by the Bangladesh Jute Spinners Association (BJSA) members. A total of 85 workers working in different jute mills were also interviewed. A structured questionnaire was prepared to conduct the survey, which was discussed with all major stakeholders and pre-tested in two jute mills before finalisation. Major issues highlighted in the questionnaire were production and export, availability of technologies, workers, management, productivity and efficiency of machineries and workers' efficiency of management, procurement of raw jute, access to finance, cost and income, export market, major challenges, etc. In order to understand the trend in jute production, employment, capacity utilisation, cost and profit, most of the questions were directed towards two specific time periods: 2002 and 2007. The survey was conducted for three continuous months from November 2007 to January 2008.

3. An Overview of the Jute Manufacturing Industry of Bangladesh

3.1 Production

Production trend of the jute manufacturing sector can be broadly categorised into four periods: first phase (1950-1970); second phase (1972-1981); third phase (1982-1990); and fourth phase (1991-onward) (Figure 1). During these four phases, jute manufacturing sector had experienced various changes in policies, and also in the pattern of utilisation of jute and jute goods. In the pre-independence period, jute mills were owned by a small number of private entrepreneurs. During this phase, average hessian production was 155,586 metric ton (MT) per year, of which 87 per cent was exported; the comparable figures for sacking were 267,614 MT and 78 per cent respectively (Table 1). Production reached its peak in 1969, with an output of 5.74 lakh MT. Due to political instability and damages caused during the year of Liberation in 1971, operations of jute mills were interrupted. Consequently, production declined in 1971 and 1972. Thereafter, production started to increase. In the second phase (1972-1981), government decided to nationalise the jute manufacturing sector, and took control of all the private sector jute mills. During the 1970s, average level of production of hessian was about 165,000 MT, of which 94 per cent was exported, while comparable figures for sacking were 225,460 MT and 86 per cent respectively. Growth in the production of jute goods between 1960 and 1980 can be attributed to the growth in production of hessian, sacking and carpet backing cloth (CBC) products.



Source: BJMC, BJMA and BJSA.

Table 1: Periodic Trend of Jute Goods Production, Periodic Average

(in Metric ton)

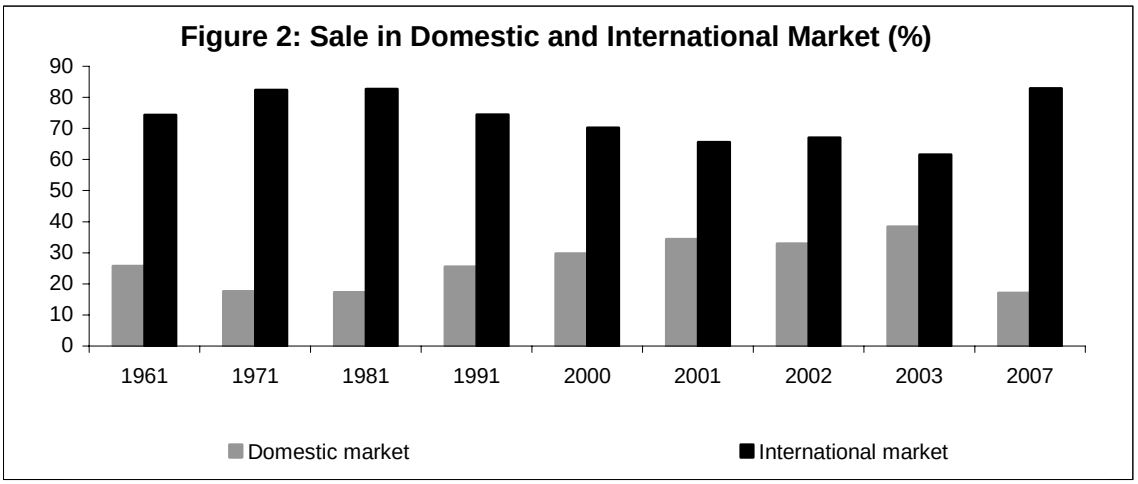
Period	Hessian	Sacking	CBC	Yarn/Twine
Upto 1970	155,586 (86.9)	267,614 (78.2)	23,929 (96.7)	0 (0.0)
1972-80	165,033 (93.7)	225,458 (86.3)	63,578 (95.5)	1,953 (73.3)
1981-91	219,048 (94.8)	270,556 (83.7)	80,415 (97.0)	61,090 (69.1)
1992-05	87,968 (99.5)	196,839 (71.7)	39,777 (89.7)	163,830 (90.8)

Note: Figures in parentheses indicate export as percentage of total production of that period.
Source: Based on BJMC (1979-80 – 2005-06), BJMA (1972-73 – 1978-79), BJMC as cited in IDRL (1992) (1960-61 – 1971-72), Alim (1978).

Production of yarn/twine accounted for a small share of total production during the 1970s. During the 1980s (third phase), the then government decided to denationalise a number of jute mills in line with the initiative of economic liberalisation. A mixed trend is observed in the production of jute goods during this phase, which reached its peak in 1990 with a production of 5.96 lakh MT. Production of yarn gradually increased in the 1980s. Most importantly, production of hessian and sacking — two major traditional products gradually declined, especially since the late 1980s. Production of CBC declined as well. In the fourth phase (1990-onward), following the suggestions of the World Bank, government started to denationalise a number of other public sector jute mills which resulted in the shutdown of many jute mills as well. However, production of jute goods has not picked up even after adoption of various policy measures. Indeed, production of traditional products such as hessian, sacking and CBC has continued to decline with the exception of growth in the production of yarn and twine. Yarn/twine now accounts for the major portion of jute goods and over time, its production has also been on a steady rise. During 2006, Bangladesh's share in the global production of jute goods was approximately 18 per cent.

Both public and private sector jute mills sell their products in either the domestic market or the international market (Figure 2). Although overseas export comprised major share of Bangladesh's jute goods production, domestic sale has been posting a rise, which now accounts for 38 per cent of the total production. Bangladesh is the leading exporter of jute

goods in the world and her share in the global market is gradually increasing—which accounted for 60 per cent of the global exports in 2006. If export of raw jute is taken into account, total export would reach more than 75 per cent. According to Bangladesh Jute Association (BJA), Bangladesh exports about 25 lakh bales of jute goods which accounted for about 56 per cent of the total raw jute grown in the country. It is worth noting here that Bangladesh and India currently meet more than 90 per cent of the global export demand for jute and jute goods; to compare, this share was 79 per cent in 1970.



Source: BJMC.

3.2 Jute Mills, Production Capacity of Jute Mills

A total of 72 jute mills were operated by the public sector in 1982, immediately before the initiative of denationalisation. Since 1982-83, government started to denationalise the public sector jute mills — out of 72 public sector jute mills, the government denationalised 34 jute mills between 1982 and 1985 (Table 2). Out of these 34 privatised jute mills, 6 were composite, 21 were conventional and 7 were CBC jute mills. A total of another 22 jute mills were privatised during the last two decades. Besides, a number of new jute mills (mostly of spinning type) were established under the private sector initiative. Currently a total of 129 jute mills are in operation, of which 18 mills operated under the public sector and the remaining 111 mills operated under the private sector (Table 3). Of the 111 private mills, 61 mills were owned by the BJMA members while the remaining 50 mills were owned by the BJSA members.

Table 2: Time Profile of Denationalisation of the Jute Industry, 1982-1985

Types of Mills	Denationalisation of Jute Mills					
	Number of Mills as on 31.06.1982	1982-83	1983-84	1984-85	Total	Total Retained
Composite	19	5	1	0	6	13
Conventional	31	18	3	-	21	10
CBC	15	6	-	1	7	8
Jute carpet producers	2	-	-	-	-	2
Other specialised mills	3	-	-	-	-	3
Inoperative mills	2	-	-	-	-	2
Total	**72**	**29**	**4**	**1**	**34**	**38**

Source: BJMC.

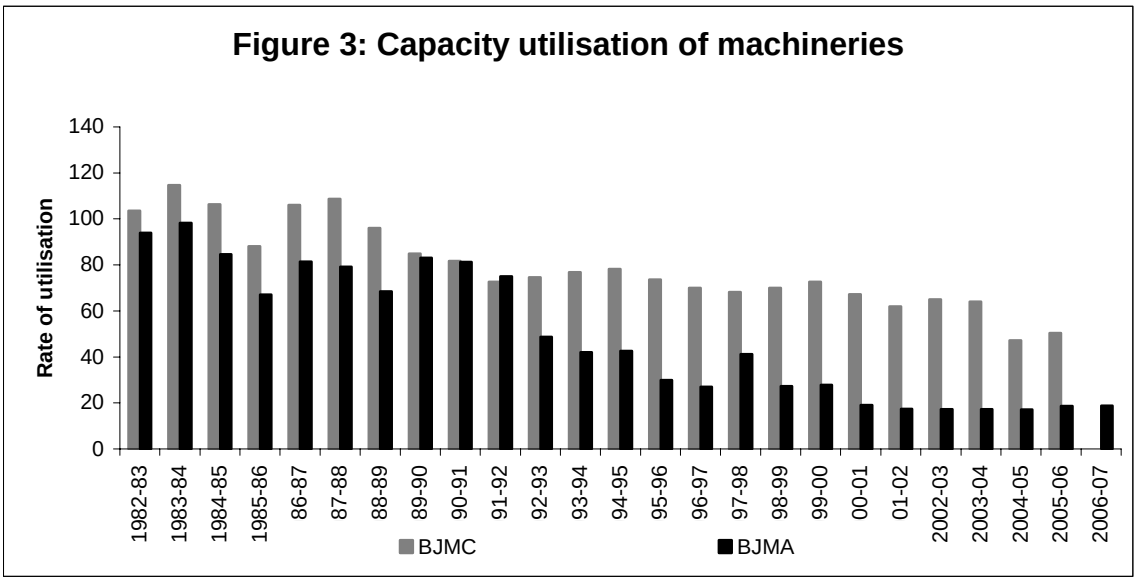
Table 3: Number of Mills in Operation in 2007

	Hessian, Sacking & CBC	Hessian & Sacking	Hessian	Sacking	CBC	Carpet	Yarn/Twine	Others	Total
BJMC	8	6	-	-	3	-	-	1	18
BJMA	6	32	1	2	5	4	2	9	61
BJSA	-	-	-	-	-	-	50	-	50
Total	**14**	**38**	**1**	**2**	**8**	**4**	**52**	**10**	**129**

Source: BJMC, BJMA and BJSA.

A total of 25,792 looms were in operation in the 72 jute mills during 1981-82. In other words, average number of looms in a jute mill was 358. The number of operable looms increased to 26,033 by 1991-92, as a number of new mills was established during this period (Figure 3). In 2006-07, there were 22,944 looms in 129 mills, which means an average of 178 operable looms in a mill. It shows that though the number of installed looms did not change by a significant quantity during this decade (1981-1991), operable looms declined by almost half on the average. It implies that capacity utilisation of the mills has substantially declined over time, from as high as 103 per cent during 1982-83 to 50 per cent in 2005-06 in BJMC mills and 94 per cent to 19 per cent in mills owned by the BJMA. It is important to note here that capacity utilisation had substantially declined in cases of hessian, sacking and CBC mills in mid 1990s, especially in the private sector jute mills. Capacity utilisation in yarn/twine mills is found to be relatively better when compared against other mills.

Figure 3: Capacity utilisation of machineries



Source: BJMA.

3.3 Financial Position of Jute Mills

Most of the jute mills have been experiencing poor financial conditions for a large part of the time since Bangladesh's independence in 1971. According to the World Bank (1986), jute mills were profitably operated by the pre-independence regime, when financial profit per unit of manufacturing hessian product was Tk. 4,977; however, when considering the

other economic costs such as subsidy and fiscal incentives, overall economic profit can be considered to be negative (-Tk. 1,545) (Table 4). In the following years, both financial and economic profits of jute mills have continued to decrease. According to the BJMA, private jute mills suffered a loss of Tk. 7,420 for manufacturing one MT of hessian in 1988, which marginally declined to Tk. 6,640 during 1996-97. Similarly, BJMC mills had a negative profit of Tk. 5,184 from manufacturing of one MT of hessian product in 1988, while the loss further increased to reach Tk. 11,075 during 1994-95.

In order to compensate losses, the government provided various kinds of support to jute mills. Between 1985 and 1988, the then government compensated losses incurred by the mills against difference in the exchange rate between Bangladesh and India in the form of 'XPB.' From 1989 to 1991 government paid 'cash subsidy' to all mills against their losses. Under the World Bank programme (Jute Sector Adjustment Credit or JSAC), government compensated the mills through *export loss finance* for BJMA mills between 1992 and 1995 and up to 1995-96 for BJMC mills. The loss of finance to BJMC mills ranged between 31 per cent and 67 per cent, i.e. on an average 50 per cent; on the contrary for the BJMA mills this was 16 per cent during 1992-93 and 20 per cent between 1993 and 1995. According to the BJMA, private sector mills are yet to receive the support in the form of export loss finance, which was Tk. 52 crore. It is also important to note here that when the mills were denationalised in 1982 some were given back to their former management, and some given to new management. In both these cases all the previous loans and liabilities were also transferred. Those debts and liabilities, according to private entrepreneurs, had come into surface because of inefficient management during the nationalised regime. However, a part of those liabilities also originated even before that period, in the 1960s.

Table 4: Gross Profit for Manufacturing Jute Goods

(Tk. per MT)

	Hessian		Sackings		CBC	
	BJMC	BJMA	BJMC	BJMA	BJMC	BJMA
1965-70	4977					
1973-75	-2007					
1975-80	-1887					
1980-85	-582					
1987-88	-5184	-7420	-4413	-3971	-8226	-4390
1988-89	-5710	-8742	-4885	-5923	-9546	-10023
1989-90	-9971	-7773	-6895	-5283	-13623	-10664
1990-91	-11303	-9678	-9877	-6649	-19439	-12058
1991-92	-16917	-11052	-12141	-8074	-15599	-10508
1992-93	-19340	-26575	-11108	-17463	-17642	-20941
1993-94	-20828	-20454	-12412	-8609	-20632	-14569
1994-95	-11075	-10764	-8883	-7137	-12639	-10808
1995-96		-8585		-7209		-12690
1996-97		-6640		-4339		-10348

Source: World Bank Report 1986; BJMA.

3.4 Prospects of Jute and Jute Goods in the Global Market

According to a report published by the FAO, global demand for jute and jute goods declined by 16 per cent from 3.4 million tonnes of fibre equivalent in 1988-90 to 2.9 million tonnes during 1998-2000. This happened because of the influence of two

interrelated factors, such as the intensity of competition with, and the displacement by, synthetic fibres and extension of commodity bulk handling facilities. The decline of jute demand, in the period under consideration, was much higher in developed countries (40 per cent) compared to that in the developing countries (10 per cent). Competitiveness of jute and jute goods relative to polypropylene is determined by both price and non-price factors.[1] Between 1988-90 and 1998-2000, prices for polypropylene fibre decreased on an average by 2 per cent per year in real terms, while world demand grew at approximately 8-10 per cent each year between 1988 and 2000. During the same period, world consumption of jute fibre and jute products declined by 1.54 per cent per year to 2.9 million tonnes in 2000. It is important to examine how strong the substitutability of jute and polypropylene would be in the coming years.[2]

Prospect of increasing the global demand for jute and jute goods largely depend on the extent of use of jute goods for different purposes, as well as its relative competitiveness vis-à-vis synthetic products. Polypropylene, which is the end product of petroleum, has become more expensive in recent years, mainly due to substantial rise of petroleum price. This was likely to lead to the rise in the consumption of various substitutes of polypropylene, including jute goods, at the international level. Analysis shows that substitutability of jute and jute goods vis-à-vis polypropylene has been declining over time, as shown in Table 5. One could infer from the figures presented that the demand for artificial fibres will be gradually fulfilled by natural fibres. However, a low substitutability of polypropylene indicates that global jute market would keep growing approximately at the current level in the upcoming years.

Table 5: Trend of Production Change under Different Scenarios

Period	Polypropylene	Jute Goods	Total
1980-2003	10.14	0.18	6.98
1985-2003	7.62	0.88	5.95
1990-2003	5.96	-2.82	4.14
1995-2003	5.52	-0.71	4.47
2000-2003	-0.18	-0.33	-0.20

Source: Authors' own estimation based on Industrial Commodity Statistical Year Book, United Nations (various issues) and http://www.fao.org/statistics/.

According to FAO (2003), although bulk handling is getting popular in the case of food and other items, due to the substantial amount of capital required for developing such facilities, bulk handling has not been widespread in developing countries where infrastructure facilities have often been poor. Utilisation of jute as a diversified product has been on the rise though its share in the total production is still insignificant.[3]

The United Nations (UN) has declared 2009 as the 'Year of Natural Fibre' in order to popularise the use of natural fibres in manufacturing goods. Consumers of developed countries have started to show increasing interest in buying more environment-friendly products. From this perspective, jute is considered as demandable items because of its

[1] "Increasing returns to scale in the petrochemical industry, as well as its vertical–integrated structure that allows a flexible allocation of cost components alongside processing stages for different outputs, contribute towards decreasing unit costs and therefore result in polypropylene polymer and the related synthetic products being price competitive with their jute counter parts," (please see, www.fao.org/docrep/006/45143e/y5143elg.htm).
[2] ibid.
[3] Diversified jute products include geotextiles for land erosion control, jute-reinforced plastics, jute laminates, pulp and paper, decorative fabrics, carpets and handicrafts.

biodegradability and environment-friendly nature. Besides, anti-polythene movement is also getting popular in developed countries. Under such circumstances, jute and jute goods have considerable prospect and potentialities in the coming years.[4]

In the case of Bangladesh, there is ample scope for the development of use of jute and jute goods at the domestic level. Government regulations as regards ban on polythene, if appropriately implemented, would enhance the use of jute goods in the country. There is a huge amount of unutilised capacity in most of the jute mills. If those machines can be utilised effectively by using a part of the raw jute, which is at present exported without any substantial value addition, production and income from jute goods could be substantially increased. In this context, duty free market access in India, accorded to Bangladesh under the South Asian Free Trade Area (SAFTA), should create prospects for more exports to the Indian market. Thus, given the discernible market signals, there is considerable room to enhance both production and export of jute goods.[5]

4. Features of the Sample Jute Mills, Managers and Workers

4.1 Features of Jute Mills

***Location of Sample Jute Mills*:** Sample jute mills were located in 17 districts, of which 9 were in Chittagong, 6 in Narsingdi, 5 in Khulna, 4 in Dhaka and the remaining were in other districts (see Map 1 for more details).

Size of Mills: Mills were categorised as "small", "medium" and "large" based on the number of looms installed in the factory. Mills having less than 250 looms were categorised as "small," those having looms between 250 and 500 as "medium," and those with more than 500 looms as "large." A total of 49 per cent mills in the sample were found to be "small," 31 per cent "medium" and 20 per cent "large."

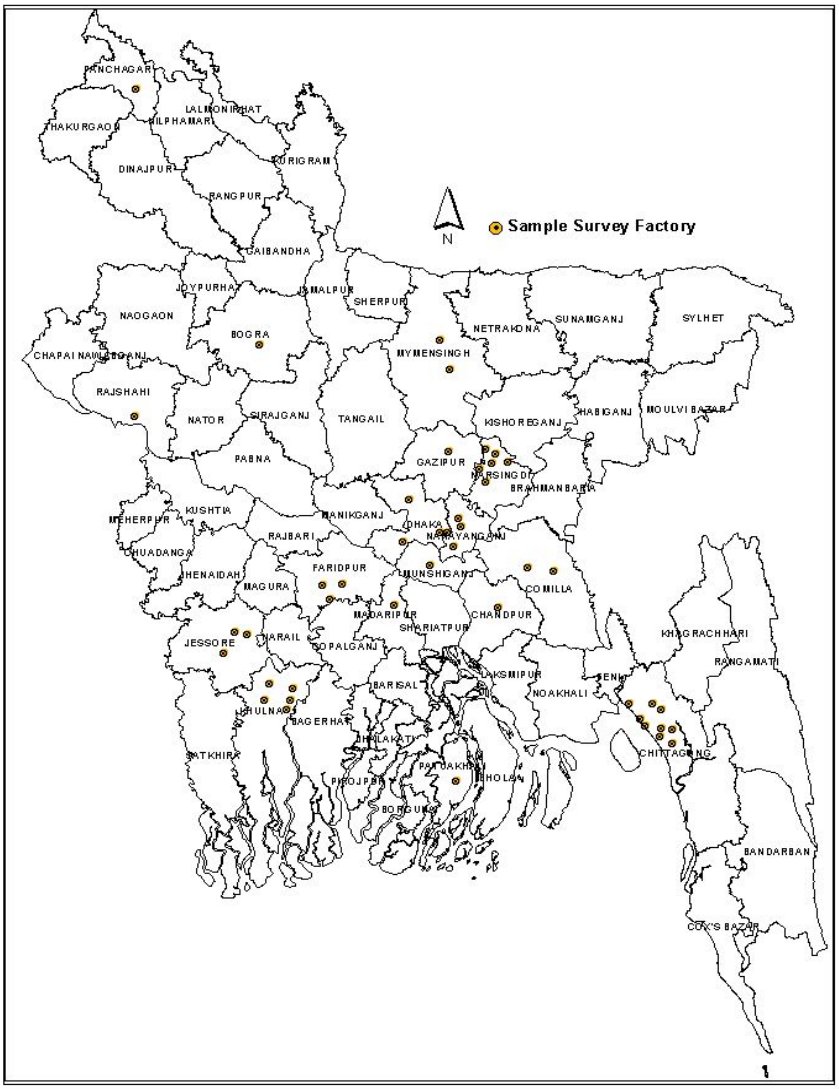
Establishment Period of Sample Mills

Most of the sample mills were established during the pre-Independence period (Table 6). A large number of new mills were established long after Independence, mainly during 1996-2001. New mills were established not by using new machineries, rather by using unused machineries sold by mills that were owned by the BJMC and BJMA.

[4] It is difficult to agree fully with the conclusion made by FAO as regards prospects of jute and jute goods based on the data of the year 2001. FAO projected that by 2010, global consumption of jute is expected to contract due to competition from polypropylene and bulk-handling technology. It was projected that global consumption will decline by 1.07 per cent per year from 2.89 million tonnes in 1998-2000 to 2.62 million tonnes in 2010. Consumption of jute and jute products in the developed countries is expected to continue to decline in the medium term, albeit slower rate than in the 1990s. A slow down in the contraction of the market, according to FAO, "may reflect the gradual exhaustion of substitution possibilities between jute and competing products or technologies, at least in these countries. In the developing countries consumption is expected to decline at an annual rate of 0.95 per cent from 2.49 million tonnes in 1998-2000 to 2.33 million tonnes in 2010. Consumption of jute products is likely to remain at approximately 1.6 million tonnes in spite of the revised administrative regulations that determine the shares of jute and synthetic fibres in food grade sacks for agricultural commodities. In China, it is expected that the consumption of jute will decline at around 13 per cent per year, faster than during the last decade as a result of increases in the capacity of synthetic fibre production plants and the subsequent intense competition by synthetic sacks. In Africa and Latin America, consumption is projected to follow a downward trend due to competition by synthetic packaging materials."

[5] According to FAO (2003), in the medium term, "jute consumption in Bangladesh is projected to grow at an annual rate of approximately 1 per cent from 152,000 tonnes in 1998-2000 to 162,000 tonnes in 2010, partly due to the ban imposed on polythene shopping bags that was introduced in 2002 for environmental reasons."

Map 1: Location of Sample Jute Mills



Source: CPD Jute Survey, 2007-08.

Table 6: Establishment Period of Sample Jute Mills

Establishment Period	Small	Medium	Large	Total
1952 - 1971	11	9	6	26
1972 - 1975	1	1	0	2
1976 - 1980	1	1	0	2
1981 - 1985	1	3	0	4
1986-1990	0	1	0	1
1991-1995	0	1	0	1
1996 - 2000	0	0	2	3
2001 - 2006	3	1	2	6
Total	**17**	**17**	**10**	**45**

Source: CPD Jute Survey, 2007-08.

Structure of Ownership

CPD survey covered 14 BJMC jute mills out of the total 18 jute mills which were in operation; this was about 77.7 per cent of the total mills under BJMC. CPD surveyed 17 BJMA mills (27.8 per cent) and a further 14 mills from the members of BJSA (28 per

cent). In 6 jute mills, out of the 31 private sector ones, government had some shares, which ranged between 25 and 51 per cent. In 3 jute mills, there were some shares owned by foreign companies as well. Another 6 jute mills were operated by the lease, out of which 2 mills were leased from the public sector (BJMC) and 4 mills from the private sector (BJMA).

Machinery Used in Different Factories

On the average, there were 403 looms in operation in a BJMC mill, which was more than double the number that were in operation in a private sector jute mill (191 looms) (Table 7). Large scale BJMC mills are operated with 745 looms.[6] Average market value of machineries in a BJMC mill in 2007 was Tk. 54.7 crore, while that of a BJMA mill was less than half the amount at Tk. 16.93 crore. Thus, it was to be expected that BJMC mills with their relatively large size of capital would be able to produce more goods compared to the mills under the private sector.

BJSA mills usually had relatively less number of machineries, mainly because operation of these mills ended in the mid-stage of the production chain (i.e. in the spinning stage). Hence, these mills used relatively lower number of workers compared to other mills. Nature of operation in a spinning mill is not significantly different from composite mills where hessian, sacking and CBC are produced. However, in order to ensure quality of output, use of raw materials and some other applied techniques are different in those composite mills.

Table 7: Number of Looms and Market Value of Machineries: 2007

Association	Mill Size	Market value of Machineries (in Crore Tk.)	Total No. of Looms in Operation
BJMC	Small	8.09	50
	Medium	52.24	351
	Large	81.76	745
	Total	54.72	403
BJMA	Small	15.88	133
	Medium	20.78	341
	Total	16.93	191
BJSA	Small	11.15	45
	Large	10.85	3455
	Total	**10.97**	**2091**

Source: CPD Jute Survey 2007-08.

It was found through the survey that both public and private sector jute mills were operating with machines that were installed during the 1960s and 1970s. Most of the mills established in the 1980s, 1990s and after 2000 have used machineries which were used earlier by BJMC and BJMA mills. It was found that a number of factories established after 2005 used machineries that were used in the Adamjee Jute Mills. This indicates that machineries which are not being used for various reasons in public and private sector jute mills can be easily made operationable with a minimum cost for repairing. A large amount of investment is not required to serve this purpose. Some of the jute mills have started to use new machineries (but in a very small way) in order to enhance productivity and to produce acceptable output which meets the quality standards.

[6] Average number of looms is relatively higher in a small scale BJMA mill compared to that in a BJMC mill.

Production and products produced

Although a large difference is observed between public and private sector jute mills in terms of total number of looms in operation, significant difference was not found in terms of their production levels. Even though production of BJMC mills ought to be higher because of the availability of large stock of machineries, in reality it was found to be rather low. According to Table 8, average production in the sample BJMC, BJMA and BJSA jute mills in 2007 were 6,085 MT, 5,761 MT and 6,823 MT respectively.

As a result of differences in the level of capacity utilisation in BJMC, BJMA and BJSA mills, production also varied considerably between large, medium and small scale jute mills. Highest level of production was observed in medium sized BJMA mills (11,958 MT), while the lowest level was found in small sized BJMC mills (873 MT), where production per worker was 3.7 MT per year. Productivity in BJSA mills tops all other mills (7.2 MT), while it is the lowest in BJMC mills (2.5 MT).[7] Productivity is also the lowest in large sized BJMC mills, which is 1.83 MT and highest in large BJSA mills. It is important to explore the possible reasons for the low level of productivity in BJMC mills compared against the BJMA and BJSA mills.

Table 8: Average Production in Sample Mills: 2007

(in MT)

Association	Mill Size	Average Production	Production per Worker
BJMC	Small	873	2.79
	Medium	7,285	3.41
	Large	8,194	1.83
	Total	6,085	2.5
BJMA	Small	3,378	3.79
	Medium	11,958	5.62
	Total	5,761	4.67
BJSA	Small	6,078	5.93
	Large	7,319	8.14
	Total	6,823	7.19
Total	Small	3,261	4.02
	Medium	9,409	4.41
	Large	7,819	2.66
	Total	**6,026**	**3.7**

Source: CPD Jute Survey, 2007-08.

Domestic Sales and Export of Sample Jute Mills

All types of jute mills mostly targeted international market due to the prevailing higher price of jute goods, compared to the prices in the domestic market (Table 9). Sample BJSA mills sold 66 per cent of their products in 2007 in the international market. However, sales in the domestic market are not low, and BJMA mills sold relatively larger share of their products in the domestic market compared to that of the BJMC mills. This would infer that BJMA mills could earn less compared to BJMC mills by the virtue of the fact that they were able to sell more in the domestic market, which will be examined in the following sections.

[7] Labour productivity in an Indian jute mill is relatively higher, which is about 6.9 metric ton.

Table 9: Share of Product Sale in Domestic and International Market of the Sample Mills: 2007

Association	Domestic Market	International Market
BJMC	0.47	0.53
BJMA	0.49	0.51
BJSA	0.34	0.66

Source: CPD Jute Survey, 2007-08.

Sample mills exported their products in all the major regions of the world (Table 10). About 38.7 per cent products that were produced by the sample mills were exported to Asian countries (mainly sacking and yarn/twin), while 25 per cent of the products were exported to the European market (mainly yarn/twine and hessian products). Public sector jute mills sold their major products, hessian and sacking, mainly in the Asian and the African markets, while private sector jute mills target the Asian and the European markets. Another important product, yarn, was sold by the public sector jute mills in the Asian market (90 per cent of the product) and by the private sector jute mills in both the Asian and the European markets.

Table 10: Volume of Export in Different Regions by the Sample Mills: 2007

(As Per cent of Total)

Product	Sector	USA	EU	Africa	Asia	Australia	Other
Hessian	Public	16.2	13.1	13.2	48.5	8.9	
	Private	23.6	64.8	3.7	7.8		
	All	17.6	29.1	11.1	33.2	9	
Sacking	Public	5	3.8	25.1	60.9	4.6	
	Private	9.3	6.2	19.2	58.1	7.3	
	All	6.1	4.4	23.9	59.6	5.2	0.7
CBC	Public	5.3	12.3	6.5	16.3	55.5	4.1
	Private	3.5	29		26.5	41	
	All	4.5	19.3	5.4	18.5	48.9	3.4
Yarn/twine	Public		10		90		
	Private	11	43.8	7.1	38.1		
	All	11.7	42.4	7.5	38.3		
Diversified products & others	Private	18.1	54.6		24.2	3.1	
	All	18.1	54.6		24.2	3.1	

Source: CPD Jute Survey, 2007-08.

An analysis of the price of different products reveals that public sector jute mills sold their hessian and sacking products in markets where price was relatively low, such as Asia and Africa market (Table 11). On the other hand, private sector jute mills sold their products in relatively high priced markets such as Europe, and Asia in the case of hessian, sacking and CBC products. Yarn/Twine sold by the private sector mills in the low-priced markets of Asia was because of large scale demand of the product. It can be deduced that export income of BJMC mills would not be higher than that of BJMA mills, since they primarily targeted low-priced market. According to some private sector mill owners, price fixed by the BJMC mills for their products directly affects the overall market price. Under the circumstances of huge losses incurred by public sector jute mills, how far the price fixed by the public sector jute mills have any economic rationales, which in other way may distort the market price – is a question to explore.

Table 11: Unit Price (Tk.) of Different Products in Sample Mills: 2007

Product	USA	EU	Africa	Asia	Australia	Other
Hessian	58009.1	60416.6	57678.7	53987.3	58688.3	
Sacking	36580.7	36840.4	38663.5	38075.5	41614.7	38027.7
CBC	55404.7	57395.8	45470.6	54158.9	56679.8	55872.6
Yarn/twine	57770.4	53093.1	57355.4	43254.3		
Diversified products & others	76295.0	33035.7		68000.0	65000.0	
Total	78654.7	48239.0	50124.7	50193.4	58691.7	

Source: CPD Jute Survey, 2007-08.

Merchandising

It is important to inquire whether the marketing practice of BJMC mills would explain why these mills tended to target low price markets. CPD survey reveals that most of the BJMC mills sold their products either through local buying houses (54 per cent) or international buying houses (35.9 per cent) (Table 12). In contrast, private sector jute mills, such as BJMA and BJSA mills, sold major part of their products through local buying houses and direct buyers. Direct selling to retailers has advantages of acquiring a better price compared to when it is sold to local and international buying houses, since agents' commission is also added to the cost. Thus, BJMA and BJSA mills get better price not only for targeting high-priced market, but also because of using better merchandising techniques. BJMC mills sold most of their products through local buying houses, such as members of Bangladesh Jute Goods Association (BJGA). Without developing direct network with buyers and international buying houses, it would be difficult for BJMC mills to get a higher price for their products. However, development of network with international agents required fulfilling commitments in terms of delivering products that meet a certain quality criterion, and thus reach the buyers in the agreed time, where BJMC mills suffer from significant weaknesses.

Table 12: Sales under Different Associations through Different Agents in Sample Mills: 2007

(in Percentage)

Association	Local Buying Houses	International Buying Houses	Direct Buyers	Total
BJMC	54.09	35.85	10.06	100.00
BJMA	51.20	17.50	31.30	100.00
BJSA	32.80	18.38	48.82	100.00

Source: CPD Jute Survey, 2007-08

Table 13: Sales of Different Products through Different Agents of Public and Private Sector Mills: 2007

(in Percentage)

Product	Public			Private		
	Local Buying Houses	International Buying Houses	Direct Buyers	Local Buying Houses	International Buying Houses	Direct Buyers
Sacking	64.5	32.5	3.0	71.3	16.1	12.6
Hessian	55.0	32.5	12.5	55.5	4.0	40.5
CBC	52.9	45.3	1.9	19.1	26.4	54.4
Yarn/Twine	23.0	77.0	0.0	45.8	17.8	36.3

Source: CPD Jute Survey, 2007-08.

4.2 Features of Jute Mill Managers

One of the critical factors that may explain the reason behind the better performance of jute mills is the efficiency of the management. Management team of a jute mill is comprised of the following important personnel: Project Head/General Manager, Manager (Operations), Manager (Human Resource), Manager (Finance and Accounting), and various types of other managers. Managers' year of experience in the jute sector, duration of working in their respective stations, and their decision making skills etc. have direct influence in the overall performance of the jute mill.

It was found that Project Head/General Managers (GM), the Chief Executive Officer (CEO) of public and private sector jute mills belonged to the middle-age group (Table 14). However, their duration of work in their present and previous jute mills was found to vary between public and private sector jutes mills. Project heads of BJMC mills were found to work for a short duration in different mills, which was approximately 3 years (Table 15). One of the reasons could be that their appointment in different mills was set for a creating Govt. ruling period. On the other hand, GM of private sector jute mills were found to work for a longer period of time (from 3 years to a maximum of 9 years), which provided them with a better understanding as regards to the operation of the mills and assist them to take appropriate decisions. Similarly, Managers (Operation) in the case of BJMC mills tended to work for relatively shorter period of time, which would provide them with relatively less knowledge to function in an effective way. Other management personnel, such as Human Resources Manager, Finance and Accounting Manager, were found to be experienced in all categories of jute mills; however, they have worked in their present jobs for a longer period of time in the case of private sector jute mills, compared to that of the public sector ones (Table 16). Thus, public sector jute mills were found to be operated by management personnel who did not get adequate opportunity and time for being able to take appropriate decisions. A lot was also found to be lacking in terms of accountability, reward and sanctions.

It is important to examine the efficiency of management personnel of different types of jute mills.

Table 14: Average Age and Experience of the Managers in Sample Jute Mills: 2007

Association	Mill Size	Avg. Age of Manager	Year of Experience
BJMC	Small	54.67	20.01
	Medium	55.67	31.17
	Large	54.75	33.00
BJMA	Small	58.92	30.42
	Medium	55.60	29.20
BJSA	Small	51.50	30.50
	Large	44.00	22.00

Source: CPD Jute Survey, 2007-08.

Table 15: Work Experience of Project Head/General Managers in Sample Mills: 2007

Association Code		Mean (Years)
BJMC	a. Current job	3.7
	b. Immediate past job	2.6
	c. Job before working at (b)	3.1
	d. Job before working at (c)	3.1

BJMA	a. Current job	9.8
	b. Immediate past job	3.7
	c. Job before working at (b)	7.0
	d. Job before working at (c)	8.0
BJSA	a. Current job	9.7
	b. Immediate past job	6.7
	c. Job before working at (b)	3.4
	d. Job before working at (c)	7.4
Total	a. Current job	7.8
	b. Immediate past job	4.1
	c. Job before working at (b)	4.7
	d. Job before working at (c)	5.8

Source: CPD Jute Survey, 2007-08.

Table 16: Work Experience of Managers in Sample Mills: 2007

(*in Years)*

Association Code		Experience of Manager (Operation) in Jute Mills	Experience in the Current Mill
BJMC	Manager (Operations)	25.4	4.9
	Manager (Human Resources)	22.1	5.4
	Manager (Finance/Accounting)	24.0	5.7
BJMA	Manager (Operations)	30.4	11.8
	Manager (Human Resources)	30.8	19.4
	Manager (Finance/Accounting)	28.9	20.6
BJSA	Manager (Operations)	21.3	4.5
	Manager (Human Resources)	27.7	7.7
	Manager (Finance/Accounting)	8.0	6.5
Total	Manager (Operations)	27.4	8.3
	Manager (Human Resources)	26.6	11.9
	Manager (Finance/Accounting)	25.2	12.9

Source: CPD Jute Survey, 2007-08.

4.3 Workers Profile

Jute manufacturing is a labour intensive sector. Since the entire operation of a jute mill is carried out within an integrated system, a minimum number of workers are always required in every section of the mill. Survey found that there was a wide variation in the number of workers in different types of mills, which indicated that number of workers in some mills was higher than the usual standard level. Number of workers in a BJMC mill is more than double to a BJSA mill and about 75 per cent higher when compared to that of a BJMA mill (Table 17). The range of excess workers in different sections of BJMC mills varied between 19 per cent and as high as 167 per cent. It may be inferred that because of a large part of inoperative machineries in the BJMC mills, many workers, who are employed as “permanent” workers in these mills, remain underutilised or unutilised.

Not much variation was found between private and public sector jute mills in terms of distribution of workers with respect to their skill levels (Tables 18, 19 and 20). About 80 per cent workers in BJMC and BJMA mills were either skilled or unskilled. However, their types of contract with BJMC and BJMA mills were different. Because workers in BJMC mills were appointed as “permanent,” while workers in BJMA mills were appointed on a “contract” basis. Besides, the structure of wage is different between public and private sector jute mills, which would have direct impact on productivity, cost and

overall earnings of the mill. It is important to note here that since majority of the workers were skilled to a certain degree, they can be utilised fully if the operation of all installed looms could be ensured. Number of workers who are not engaged directly in production was also very high in the public sector jute mills. The excess of workers in the public sector jute mills is possibly because of recruitment of more than required number of workers during different regimes under political considerations or as a result of pressure from the trade unions.

Since BJMC mills were unable to employ the workforce adequately, their overall production was relatively lower than others. Output per worker, which is a proxy variable of labour productivity, was found to be only half in a BJMC mill compared to that in a BJMA mill. On the other hand, labour productivity in a BJSA mill was almost 3 times higher compared to that of a BJMC jute mill. This indicates the low level of productivity of the workers in a public sector jute mill, which needs to be further investigated – whether it is because of their technical inefficiency or due to the lack of use in productive purposes arising from the under utilisation of machineries.

Table 17: Number of Workers in Different Sections in Sample Mills: 2007

Section	BJMC	BJMA	BJSA	Per cent of Workers Higher in a BJMC Mill Compared to a BJMA Mill	Per cent of Workers Higher in a BJMC Mill Compared to a BJSA Mill
Batching/softening/pilling /carding & drawing	382	222	322	72.0	18.6
Spinning	420	231	262	81.8	60.3
Winding, beaming	206	156	315	32.1	-34.6
Weaving	925	346		167.3	
Damping, lapping, etc.	298	145		105.5	
Others	344	365		-5.8	
Total	2575	1465	1108	75.8	132.4

Source: CPD Jute Survey, 2007-08.

Table 18: Types of Workers in Different Sections in Sample BJMC Mills: 2007

Section	No. of Skilled Workers	No. of Semi-Skilled Workers	No. of Unskilled Workers	Total
Batching/softening/pilling/carding & drawing	185 (48.4)	108 (28.3)	88 (23.3)	382 (100.0)
Spinning	227 (54.1)	114 (27.1)	79 (18.8)	420 (100.0)
Winding, beaming	113 (54.8)	51 (24.8)	42 (20.4)	206 (100.0)
Weaving	522 (56. 4)	258 (27.9)	145 (15.7)	925 (100.0)
Damping, lapping, etc.	155 (51.7)	88 (29.7)	55 (18.6)	298 (100.0)
Others	208 (51.7)	78 (29.7)	58 (18.6)	344 (100.0)

Source: CPD Jute Survey, 2007-08.
Note: Figures in the parenthesis indicate percentage of different types of workers under different sections in the BJMC Mills.

Table 19: Types of Workers in Different Sections in Sample BJMA Mills: 2007

Section	No. of Skilled Workers	No. of Semi-Skilled Workers	No. of Unskilled Workers	Total
Batching/softening/pilling/carding & drawing	100 (45.4)	70 (31.9)	50 (22.7)	222 (100.0)
Spinning	130 (56.4)	57 (24.9)	43 (18.7)	231 (100.0)
Winding, beaming	82 (52.7)	37 (23.9)	36 (23.4)	156 (100.0)
Weaving	222 (64.3)	83 (24.1)	40 (11.6)	346 (100.0)
Damping, lapping, etc.	62 (43.1)	42 (29.3)	40 (27.6)	145 (100.0)
Others	180 (49.4)	114 (31.3)	70 (19.3)	365 (100.0)

Source: CPD Jute Survey, 2007-08.
Note: Figures in the parenthesis indicate percentage of different types of workers under different sections in the BJMA Mills.

Table 20: Types of Workers in Different Sections in Sample BJSA Mills: 2007

Section	No. of Skilled Workers	No. of Semi-Skilled Workers	No. of Unskilled Workers	Total
Batching/softening/pilling/ carding & drawing	119 (36.9)	92 (28.8)	110 (34.3)	322 (100.0)
Spinning	114 (43.8)	74 (28.3)	73 (27.9)	262 (100.0)
Winding, beaming	113 (35.9)	122 (38.7)	80 (25.4)	315 (100.0)
Weaving	77 (87.5)	8 (9.1)	3 (3.4)	88 (100.0)
Damping, lapping, etc.	70 (58.1)	42 (35.3)	8 (6.6)	121 (100.0)

Source: CPD Jute Survey, 2007-08.
Note: Figures in the parenthesis indicate percentage of different types of workers under different sections in the BJSA Mills.

Most of the sample workers (almost 85 of them) had low level of academic achievement (Table 21). About 47 per cent workers received education upto the primary level, while another 17 per cent did not go to school. Working in an international production chain usually requires higher level of academic attainment. However, thanks to their long experience, they are able to overcome this lacuna.

Table 21: Educational Qualification of Workers' according to Sector in Sample Mills: 2007

Sector	Educational Qualification			Total
	No Schooling	Class-I- V	Class-VI-X	
Public	3 (12)	12 (48)	10 (40)	25 (100)
Private	11 (18.3)	28 (46.7)	21 (35)	60 (100)
Total	14 (16.5)	40 (47)	31 (36.5)	85 (100)

Source: CPD Jute Survey, 2007-08.
Note: Figures in the parenthesis indicate percentage of workers' educational qualification in the Public and Private Sector Jute Mills.

Average age of jute workers was found to be 42 years and 32 years for male and female workers respectively (Table 22). This indicates that young workers were not much eager to work in jute mills, because of better opportunity in other sectors (such as RMG for female workers, rickshaw pulling or other informal sector jobs); lack of assurance of regular payment, particularly in the BJMC mills; etc. It should be noted here, an intergenerational workforce is healthy for a traditional industry such as jute, which is gradually declined in this sector at present time.

Table 22: Average Age of Sample Workers in the Public and Private Sector Jute Mills: 2007

Sector	Gender	Average Age
Public	Male	46.87
	Female	43.67
Private	Male	39.92
	Female	28.00
Total	Male	42.14
	Female	31.36

Source: CPD Jute Survey, 2007-08.

5. Analysis of Changes in Economic, Technological and Managerial Aspects of Jute Manufacturing Sector: Findings from the Survey

In order to appreciate the factors responsible for the performance of public and private sector jute mills, it is important to examine changes in the performance of these mills over time, especially in terms of changes in economic, technological, managerial and employment related aspects. In this section, performance of sample mills is examined for the period between 2002 and 2007.

5.1 Changes in Economic Aspects: FY2002-FY2007

Between 2002 and 2007, total domestic production has increased by 5.7 per cent, which indicates an annual rise of about 1.14 per cent (Table 23). Considering the growth of the manufacturing sector of the country during the same period (8.1 per cent), performance of the jute mills was not satisfactory. The increase in total production, however, was due to substantial growth in the production of yarn/twine (8.1 per cent per year). Then again production of conventional products such as hessian, sacking and CBC declined during the period under consideration (-5.28 per cent, -2.81 per cent, and -5.15 per cent per year respectively), and their shares in the overall product basket have also declined during this period, which corroborates the national figures of growth in production of jute goods. Production of diversified products, though a small share in overall products, achieved a considerable increase of 24.3 per cent per year, particularly in the private sector (Table 24). During this period, average production of BJMC and BJMA mills declined by 43 per cent and 6 per cent respectively (Table 25). BJSA mills achieved a growth of 22.9 per cent. Thus, spinning mills that produce yarn and twine, performed very well during this period, and it is important to identify the factors that were responsible for their growth.

Table 23: Changes of Production according to Type in Sample Mills

Products	Production (in MT)		Per cent Change of Production Between 2002 and 2007	Share in Total Production	
	2001-02	2006-07		2002	2007
Hessian	72554	53397	-26.40	0.14	0.10
Sacking	190802	164042	-14.03	0.38	0.31
CBC	33867	25153	-25.73	0.07	0.05
Twine/Yarn	205157	288467	40.61	0.41	0.54
Total domestic production	502380.2	531058.7	5.71		

Source: CPD Jute Survey, 2007-08.

Table 24: Changes of Production according to Type and Sector in Sample Mills

Products	Public Sector			Private Sector		
	Production (in MT)		Per cent Change of Production 2007 from 2002	Production (in MT)		Per cent Change of Production 2007 from 2002
	2002	2007		2002	2007	
Hessian	3605.08	1532.48	-57.49	1538.72	1210.22	-21.35
Sacking	8171.35	5472.45	-33.03	2302.84	2717.73	18.02
CBC	1852.87	1018.39	-45.04	1413.59	1579.88	11.76
Yarn/Twine	692.60	334.73	-51.67	5264.09	5613.26	6.63
Diversified products & others	149.05			525.50	1164.69	121.63
Total production	10201.51	5778.76	-43.35	5970.89	6252.94	4.72

Source: CPD Jute Survey, 2007-08.

Table 25: Change in Production of Sample Mills under Different Associations

Association	Production (in MT)		Per cent Change of Production
	2002	2007	
BJMC	10201.5	5778.8	-43.4
BJMA	5876.4	5503.4	-6.3
BJSA	6055.9	7439.7	22.9

Source: CPD Jute Survey, 2007-08.

All types of jute mills received higher price for their products in 2007 compared to that in 2002 both in the domestic and international markets (Table 26). More importantly, BJMA mills sold their products at a higher price both in domestic (65 per cent) and international markets (55.6 per cent), compared to that of BJMC mills (54 per cent and 46 per cent respectively) (Table 26).[8] BJSA mills, for their specialised product (yarn/twine)[9], attracted relatively higher price in international market compared to other types of factories. Then again, these mills received a relatively lower price in the domestic market compared to that of BJMC and BJMA mills. It is interesting to examine why BJSA mills received relatively low price for their products in domestic market. In general, BJSA

[8] BJMA mills sold hessian and sacking products at a higher price both in 2002 and 2007 compared to that sold by BJMC mills, except sacking in 2007.

[9] The price of yarn/twine of BJSA increased 99 per cent in the domestic market in 2007 but in the international market BJMC's yarn/twine price increased more (58 per cent) than that of BJSA.

mills sold their goods at 86 per cent higher price in domestic market in 2007 compared to that in 2002, while they sold at 36 per cent higher price in international market (Table 26).

The rise of per unit price of jute can be partly explained by domestic inflation and depreciation of Taka against most of the major currencies during the comparable period; however, a major reason for the rise of prices is because of increasing price offered by buyers and retailers.[10]

Table 26: Change of Selling Price in the Domestic and International Markets in Sample Mills

Association	Domestic Market			International Market		
	Average Selling Price (Tk./MT)		Per cent Change of Selling Price Between 2002 and 2007	Average Selling Price (Tk./MT)		Per cent Change of Selling Price Between 2002 and 2007
	2002	2002		2002	2007	
BJMC	28881.4	44474.6	53.9	33646.3	49250.8	46.3
BJMA	30611.5	50422.8	64.7	33427.8	52031.0	55.6
BJSA	13866.7	25785.8	85.9	36548.4	49783.5	36.2

Source: CPD Jute Survey, 2007-08.

Table 27: Change of Selling Price for Different Products in the Domestic and International Markets of Sample Mills under Different Associations

Association	Product	Domestic Market			International Market		
		Average Selling Price (Tk/MT)		Per Cent Change of Selling Price in 2007	Average Selling price (Tk/MT)		Per Cent Change of Selling Price in 2007
		2002	2007		2002	2007	
BJMC	Hessian	31598.1	41787.8	32.2	38343.2	54876.1	43.1
	Sacking	22792.4	42924.4	88.3	23876.8	38517.5	61.3
	CBC	38505.8	51246.0	33.1	39783.3	56099.9	41.0
	Yarn/Twine	21949.0	35207.0	60.4	25629.7	40428.0	57.7
	Diversified products & others	18042.0			46236.0		
BJMA	Hessian	42747.2	62558.1	46.3	46015.7	61232.2	33.1
	Sacking	24542.9	38078.6	55.2	25313.3	41722.4	64.8
	CBC		61853.5		38720.0	57126.3	47.5
	Yarn/Twine	24544.8	40608.8	65.4	28337.0	40646.6	43.4
	Diversified products & others		100879.0			68493.7	
BJSA	Yarn/Twine	12398.6	24635.9	98.7	32191.4	47928.9	48.9
	Diversified products & others		18608.0		57002.0	64466.0	13.1

Source: CPD Jute Survey, 2007-08.

[10]In some instances, manufacturers received relatively better price for their products in domestic market compared to that in international market.

5.2 Changes in Technological Aspects

Capacity Utilisation

Total number of looms in sample jute mills declined between 2002 and 2007. Number of looms operated in 2002 was 328, which fell to 265 in 2007. Use of looms in public sector jute mills has declined by 12 per cent, while in private sector jute mills by 11 per cent. Low level usage of machineries in public and private sector jute mills partly explains the reduction of production in those mills.

It was evident from the survey that a significant portion of the mill capacity remains unutilised. This was true for all sections of public and private sector jute mills. Capacity utilisation is relatively low in public sector jute mills compared to that in the private sector (Table 28). More importantly, rate of capacity utilisation in most sections declined substantially in BJMC mills during 2002-2007. Interestingly, private sector jute mills in the same period have enabled the use of productive capacity in some sections, while others in capacity utilisation has declined, though not to the same extent as in the public sector mills.

Table 28: Change in Capacity Utilisation of Sample Mills

		Public Sector	Private Sector
Softener/Spreading	FY 2002	61.5	79.3
	FY 2007	49.8	74.9
	% Change	-19.13	-5.56
Carding	FY 2002	62.3	77.4
	FY 2007	47.7	81.8
	% Change	-23.37	5.73
Drawing	FY 2002	67.2	77.9
	FY 2007	53.5	82.1
	% Change	-20.39	5.48
Winding	FY 2002	65.3	74.6
	FY 2007	53.9	73.1
	% Change	-17.41	-2.07
Calendaring	FY 2002	65.2	61.4
	FY 2007	59.3	62.9
	% Change	-9.09	2.36

Source: CPD Jute Survey 2007-08.

Productivity of Capital

An examination of the other aspects of technologies such as productivity of capital, i.e. output per unit of machine, reveals a mixed scenario. In case of public sector jute mills, machine-productivity declined in all major sections of operations, except in weaving and calendaring. On the other hand, machine-productivity increased in the private sector jute mills, particularly in softener, spinning, winding and weaving (Table 29). This implies that machine-productivity fell for both public and private sector jute mills by 1 to 2 per cent in the sections of preparatory works before spinning (such as in softening, spreading, carding, drawing).[11] Maximum machine-productivity (10 per cent) deteriorated in the calendaring section of the private sector jute mills.

[11] Machine-productivity in softener section in private sector jute mills increased by 1 per cent during this period.

Machine-productivity, in two major activities such as in spinning and weaving, increased in the private sector jute mills, particularly in weaving operation (by 34 per cent) (Table 29). This supports the rise in production of sacking, CBC and yarn/twine products in private sector jute mills during the period under consideration. In public sector jute mills, insignificant fluctuations were observed in the case of machine productivity. Besides, post-weaving operations, such as winding and calendaring illustrated mixed scenario both in the case of public and private sector mills.

Table 29: Change in Output per Unit of Machine (Kg/hour) of Sample Mills

	Section	Output (Kg/hour), 2002	Output (Kg/hour), 2007	% Change in Output between 2002 and 2007
Public	Spinning	27.4	27.0	-1.5
	Weaving	5.6	5.7	1.8
	Winding	97.9	93.5	-4.5
	Calendaring	2259.6	2300.1	1.8
	Softener/ Spreading	598.2	586.2	-2.0
	Carding	157.1	150.9	-3.9
	Drawing	97.7	95.3	-2.5
Private	Spinning	32.6	33.2	1.8
	Weaving	5.0	6.7	34.0
	Winding	84.0	97.9	16.5
	Calendaring	3261.5	2931.1	-10.1
	Softener/ Spreading	455.4	459.7	0.9
	Carding	174.2	167.1	-4.1
	Drawing	166.3	163.9	-1.4

Source: CPD Jute Survey, 2007-08.

A decline in machine-productivity in major operation in public sector jute mills indicates technical inefficiency, which can be related to the use of raw jute, handling and maintenance of machines, time-use pattern for manufacturing goods, etc. Other than this, operational inefficiency of the management appears to be responsible for the low productivity of the available machineries. As discussed later, expenditure on repair and maintenance is high in BJMC mills compared to that of private sector mills, and technical efficiency was also found to be low in BJMC mills.

5.3 Changes in Operational Aspects

Procurement of the required amount of desired quality raw jute is the most important activity for jute mills at the initial phase. A total of 1.45 lakh maund raw jute is procured by an average mill. Raw jute procured by a spinning mill is relatively higher since they used more jute for manufacturing export quality yarn/twine.

Jute mills procured raw jute through raw jute suppliers in different months following the harvest. It was found that major share of raw jute (about more than 50 per cent) was procured during the July-September period. It is generally claimed that BJMC mills were unable to procure jute in sufficient amount in the harvesting season due to inadequate funds. Survey showed that there was no wide variations in terms of time of procurement among BJMC, BJMA and BJSA mills (Table 30). One possible explanation of similar pattern of jute procurement of all types of jute mills is that most of these mills usually tend to depend on various sources of working capital, which includes government (mainly for BJMC mills), financial institutions, own capital and suppliers credit, etc.

Table 30: Procurement of Raw Jute by Sample Mills during July 2006-January 2007

Procurement of Raw Jute (Per cent of Total Procurement)									
Asso-ciation	**Size of the Mill**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**Total Procured Amount (Maund) (from July 2006-Jan, 2007)**
BJMC	Small	34.21	24.62	11.93	8.99	5.23	7.70	7.32	19586.7
	Medium	18.71	29.16	19.56	9.56	3.65	3.62	15.74	141205.2
	Large	6.51	20.96	23.37	18.11	14.76	7.87	8.41	319694.6
	Total	**11.99**	**24.24**	**21.59**	**14.55**	**10.20**	**6.22**	**11.22**	**168059.2**
BJMA	Small	13.61	19.39	22.38	9.22	12.11	11.23	12.06	79975.6
	Medium	2.63	21.72	23.69	14.24	14.70	13.25	9.76	236959.8
	Total	**8.05**	**20.59**	**23.04**	**11.82**	**13.45**	**12.38**	**10.67**	**121916.0**
BJSA	Small	11.12	17.91	16.06	15.04	12.63	13.82	13.42	136023.9
	Large	4.51	24.25	27.32	14.12	10.93	10.20	8.66	169310.3
	Total	**7.24**	**21.88**	**23.23**	**14.34**	**11.44**	**11.38**	**10.48**	**157103.3**
Total	Small	14.05	19.34	20.49	10.54	11.91	11.61	12.07	75535.5
	Medium	11.00	25.30	21.80	12.06	9.51	7.75	12.58	179039.2
	Large	6.37	21.69	24.26	16.82	13.55	8.46	8.85	257663.2
	All	9.94	22.39	22.34	13.43	11.60	9.25	11.04	145880.3

Source: CPD Jute Survey, 2007-08.

Price of raw jute increased by about 30 per cent between 2002 and 2007, coupled with escalated cost of production as well (Table 31). The rise in price can be also related with the high inflation in domestic market. High procurement price of raw jute would encourage farmers to produce jute in the country, although given the food security situation this will need to be viewed in the context of procurement price of rice and seasonality factors.

Table 31: Raw Jute Purchasing Price of Sample Mills

		Average Price (Tk./maund)		**% Change between 2002 and 2007**
		2002	**2007**	
Public sector	Deshi white	667.9	783.1	17.2
	Tosa	671.2	881.8	31.4
	Mesta	589.1	848.9	44.1
	Total raw jute	580.4	746.6	28.6
Private sector	Deshi white	558.3	858.1	53.7
	Tosa	642.8	948.7	47.6
	Mesta	484.5	782.1	61.4
	Total raw jute	580.4	793.4	36.7
Total	Deshi white	624.1	831.3	33.2
	Tosa	653.6	930.0	42.3
	Mesta	547.3	807.8	47.6
	Total raw jute	580.4	768.2	32.4

Source: CPD Jute Survey, 2007-08.

In the case of procurement of raw jute, jute mills were found to be heavily in debt. Survey revealed that jute mills, both in private and public sectors, suffered from large debt burden (Table 32). Often it is difficult for mills to repay their debts because of lack of sufficient net income from their current transactions. Because of huge debt burden, with

large amount of long overdue loans, it is difficult for mills to repay those debts which have consequently left those mills financially weak.

Table 32: Sources of Working Capital of Sample Mills

		Capital was Available for Procuring Raw Jute (Tk.) 2002	Capital Repaid to Different Sources (%) in 2002	Capital was Available for Procuring Raw Jute (Tk.) 2007	Capital Repaid to Different Sources (%) in 2007
Public Sector	Capital available for procuring raw jute	168,805,154	0.0	239,007,675	
	Financial institutions	20,209,085	9.0	76,920,535	7.7
	Own capital of the mill	56,781,680	0.0	54,200,318	
	Borrowing from other sources	14,449,954	20.0	9,175,997	10.7
	Borrowing (dues) from raw jute suppliers	70,541,358	55.0	98,633,902	41.5
	Others	6,823,077	0.0	76,923	0.0
Private Sector	Capital available for procuring raw jute	141,080,586	0.0	167,465,472	0.0
	Financial institutions	80,699,916		70,647,330	31.7
	Own capital of the mill	51,329,104	0.0	81,936,692	0.0
	Borrowing from other sources	3,718,750	13.0	4,933,721	12.3
	Borrowing (dues) from raw jute suppliers	4,474,600	43.0	8,697,017	30.1
	Others	858,216	5.0	1,250,712	1.7
Total	Capital available for procuring raw jute	153,508,840	0.0	189,094,510	0.0
	Financial institutions	53,583,336	65.0	72,543,880	24.4
	Own capital of the mill	53,773,362	0.0	73,551,276	0.0
	Borrowing from other sources	8,529,290	16.0	6,216,270	11.8
	Borrowing (dues) from raw jute suppliers	34,090,733	48.0	35,887,238	33.6
	Others	3,532,119	3.0	895,846	1.2

Source: CPD Jute Survey, 2007-08.

Public sector jute mills, on the average, had an outstanding debt of Tk.103 crore, while private sector jute mills had Tk. 77 crore (Table 33). It is important to stress here that debt burden in the BJMC mills has been increasing over time, almost doubling from Tk. 53.6 crore in 2001 to Tk. 103.3 crore in 2007. On the other hand, debt burden of private sector jute mills showed some fluctuations, starting with an outstanding debt of Tk. 18.5 crore in 2001, it reached Tk. 19.3 crore by 2006; subsequently, it jumped to Tk. 77.7 crore possibly because of fresh loans received in 2007. It is somewhat alarming that because of such huge amount of outstanding loans both public and private sectors were required to pay a large amount of interests, which added to their cost of production, and consequently, made the operation of the jute mills less profitable and often incurring huge losses.

Table 33: Outstanding Loan Situation in Sample Mills

Sector		Total Outstanding Loan (Tk.)			
		FY 2001	FY2002	FY2006	FY2007
Public	N	11	11	11	13
	Mean	53,58,25,690	61,86,32,803	99,59,47,708	103,27,60,624
Private	N	17	18	19	25
	Mean	18,52,27,471	17,77,90,237	19,34,66,863	77,65,67,722
Total	N	28	29	30	38
	Mean	32,29,62,485	34,50,06,383	48,77,09,839	86,42,12,662

Source: CPD Jute Survey, 2007-08.

In terms of amount of raw jute required for manufacturing one unit of hessian, sacking, CBC and yarn products, and also the time required for manufacturing those items, both BJMC and BJMA mills performed well in different years. Efficient use of time and raw materials largely depended on how efficiently machines and workers were utilised. An efficient management always prefers to aim at the optimum use of resources in order to reach the maximum possible output, which would ultimately reduce per unit cost of production and ensure competitiveness. It is important to examine the management efficiency of both public and private sector jute mills in order to determine the extent of their respective managerial techniques which may have helped in reducing cost of production.

5.4 Changes in Worker Related Aspects

Workers in Operation

Number of workers declined by 13 per cent between 2002 and 2007; where employment in BJMC mills decreased by 15.6 per cent, while it increased in the private sector mills (especially in BJSA mills) by 24 per cent (Table 34). In order to achieve higher levels of output, BJSA mills recruited more workers in their mills, mainly in the winding and batching sections. BJMA mills also increased their workforce, especially in spinning operations. BJMC mills increased their employment in sections such as batching, spinning, weaving, etc. However, it is hard to rationalise such increases in view of declining production in BJMC mills.

Labour Productivity

During the period under consideration, labour productivity, i.e. output per unit of labour declined by 7.8 per cent. Labour productivity in BJMC mills declined by 33 per cent during this period. On the other hand, labour productivity in BJMA mills fell by 7.8 per cent, but BJSA mills remain unchanged (Table 34). Low labour productivity is the resultant effects of low capacity utilisation, low productivity of machineries, inefficient use of time and raw materials, etc. Some reductions of productivity in BJSA mills were observed possibly because of relatively higher growth of labour in numbers compared to the achieved output. In general, it can be inferred that reduction of labour alone cannot enhance productivity of labour and capital, unless inefficiency in other areas is simultaneously reduced.

Table 34: Changes of Labour Productivity of Sample Mills

	2002			2007			Per cent Change		
	Number of Workers	Production (in MT)	Production per Worker	Number of Workers	Production (in MT)	Production per Worker	Number of Workers	Production (in metric ton)	Production per Worker
BJMC	2729	10201.5	3.7	2303	5778.8	2.5	-15.6	-43.4	-32.4
BJMA	1162	5876.4	5.1	1172	5503.4	4.7	0.8	-6.3	-7.8
BJSA	803	6055.9	7.5	996	7439.7	7.5	24.1	22.9	0
Total	1697	7608.5	4.5	1477	6105.4	4.1	-13.0	-19.8	-8.9

Source: CPD Jute Survey, 2007-08.

Workers' Wage

Workers wage was found to be related to their skill and the types of operation they are engaged in. Survey showed that workers' wages in a jute mill ranged between Tk. 2,600 and Tk. 5,400, depending on their level of skill and types of operation (Table 35). In the case of specialised jobs, such as spinning, weaving, etc, workers received relatively higher wages. However, workers' wage was substantially higher in a BJMC mill as compared to a BJMA and BJSA mill. Wage structure in the BJMC mill ranged between a minimum of Tk. 4,400 and a maximum of more than Tk.10,000. Survey revealed that BJMC workers received wages more than double even three times higher in certain operations (Table 36) than the workers in BJMA and BJSA mills. BJMC workers received a high wage against their low productivity, which also declined over time. Such a high expenditure on workers' wages in BJMC mills increased overall cost of production and had negative impact on their earnings. In contrast, BJMA and BJSA mills ensured higher output by paying half the wage funds to the workers. Whether the wage paid to workers in private sector jute mills was adequate to meet workers' living expenses remains a matter of grave concern and needs to be examined separately.

Table 35: Workers' Wages in Different Sections of Sample Mills: 2007

	Wage(in Tk.)			% of Amount of Wage of a Skilled Worker	
	Skilled	Semi-skilled	Unskilled	Semi-skilled	Unskilled
Batching/softening/piling/carding & drawing	3797.00	3365.47	2634.05	88.6	69.4
Spinning	4442.00	3766.21	2725.06	84.8	61.3
Winding, beaming	5406.00	3608.06	2831.55	66.7	52.4
Weaving	5332.00	4471.11	2994.02	83.9	56.2
Damping, lapping, etc.	4326.00	3873.53	2826.27	89.5	65.3
Others	4920.00	3947.41	2867.55	80.2	58.3

Source: CPD Jute Survey, 2007-08.

Table 36: Workers' Wages in BJMC Sample Mills against Other Sample Mills

	BJMC			% of Wage Higher in BJMC Mill Compared to BJMA			% of Wage Higher in BJMC Mill Compared to BJSA		
Name of the Different Section (Code)	Avg. Monthly Wage of Skilled Workers	Avg. Monthly Wage of Semi-skilled Workers	Avg. Monthly Wage of Unskilled Workers	Skilled Workers	Semi-skilled Workers	Unskilled Workers	Skilled Workers	Semi-skilled Workers	Unskilled Workers
Batching/softening/piling/carding & drawing	6362	5349	4217	141.0	161.3	130.6	118.0	134.2	113.8
Spinning	7147	5740	4331	138.6	137.9	124.7	119.4	137.1	105.4
Winding, beaming	10131	5975	4573	235.2	147.7	133.0	202.7	144.5	107.5
Weaving	7263	6091	4413	74.1	87.4	112.0	102.1	83.2	308.2
Damping, lapping, etc.	6996	5736	4490	153.5	178.7	136.9	108.3	83.4	100.1
Others	9060	6972	4882	217.0	293.2	167.8	220.0	255.1	188.5

Source: CPD Jute Survey, 2007-08.

5.5 Changes in Managerial Aspects

It is important to examine operational efficiency of jute mills through examining efficiency of the management. Efficiency of the management depends on the manager's duration of experience and service in a particular jute mill, level of understanding of different critical issues and level of performance in terms of way of execution of various activities.

Survey showed that managers of public and private sector jute mills tended to be highly experienced as they were engaged in the jute sector for a longer period of time. Interestingly, managers' experiences in their present workplace widely varied between different types of jute mills (Table 37). Managers working in public sector jute mills were found to be working only for a short period of time (not more than six years), while managers working in private sector jute mills, especially in BJMA mills, tended to work for longer periods of duration (between 10 and 20 years). Long term employment in a mill allowed better understanding of the operations in a particular mill and also added to its efficiency, which was difficult to achieve during short term tenures in public sector mills.

Table 37: Work Experience of Managers in Sample Mills: 2007

		Total Experience in Different Jute Mills (Years)	Work Experience in this Mill (Years)
BJMC	Manager (Operations)	25.4	4.9
	Manager (Human Resources)	22.1	5.4
	Manager (Finance/Accounting)	24.0	5.7
BJMA	Manager (Operations)	30.4	11.8
	Manager (Human resources)	30.8	19.4
	Manager (Finance/accounting)	28.9	20.6
BJSA	Manager (operations)	21.3	4.5
	Manager (Human resources)	27.7	7.7
	Manager (Finance/accounting)	8.0	6.5

Source: CPD Jute Survey 2007-08.

In terms of satisfaction, top management in public sector jute mills ranked all major jobs done by the mill management at low levels (Tables 38). These functions included raw jute procurement, workers' wages, maintenance of work, purchase and adoption of new machineries, etc.[12] On the other hand, top management of private sector jute mills were found to be relatively satisfied with most types of operation.

Table 38: Level of Satisfaction with Respect to Various Jobs Performed by Managers in Sample Mills

Operation	Private	Public
Raw jute procurement	4.53	2.77
Workers' wage	4.17	5.46
Maintenance work	4.27	3.46
New machineries	3.43	1.92
Recruitment of management personnel	3.97	2.08
Recruitment of workers	3.83	2.69
Firing of management Personnel	4.12	2.15
Firing of workers	4.31	2.62
Lay off the factory	3.05	2.77
Workers financial benifits	3.81	4.92
Production target	7.73	3.77

Source: CPD Jute Survey 2007-08
Note: 1=highly dissatisfied; 6= highly satisfied

5.6 Changes in Financial Aspects

Production Cost

Production cost of jute mills comprised of cost of raw materials, wages and salaries, repair and maintenance, fuel, depreciation, interest on current loan, insurance and other charges, etc. Major expenditure were cost of raw jute and workers' wages, which constituted about 60-70 per cent of total production. Cost of production of BJMC mills was substantially higher than was the case with BJMA and BJSA mills (Table 39). For manufacturing one unit of hessian product, operating cost for BJMA mills was Tk. 54,603, while in a BJMC mill it was as high as Tk. 120,220. In case of manufacturing CBC products, cost of production in BJMC mills was about 100 per cent higher than other types of mills. High cost in BJMC mills was largely because of high expenditure on account of workers' salary, interest payment of large amount of outstanding loan, and high cost for repair and maintenance. It is interesting to note here that in spite of the high expenditure on repair and maintenance in BJMC mills compared to that of BJMA/BJSA mills, productivity of machines in BJMC mills was found to be lower than other mills. High expenditure on maintenance of machineries in public sector jute mills against their low productivity was possibly because of lack of appropriate maintenance work. In all types of jute mills, particularly in case of BJMC mills, production cost escalated in all products in 2007 compared to that of 2002 (Table 40). However, the same trend was observed in other mills, which might be partly because of high level of inflation in 2007.

[12] The only area where BJMC mill management expressed their satisfaction was in the case of providing financial benefit to workers, etc.

Table 39: Operating Cost for Per MT Output of Sample Mills

	Cost of Output (Tk./MT):2007					Per cent of Cost Higher in BJMC Mills Compared to other Mills			
	Hessian	Sacking	CBC	Yarn/ Twine	Diversified Products	Hessian	Sacking	CBC	Yarn/ Twine
BJMC	120220	65155	116140	48660					
BJMA	54603	39232	60044	38752	56826	120.2	66.1	93.4	25.6
BJSA		70719	56534	42222			-7.9	105.4	15.2
Total	85685	50745	94295	41960	56826				

Source: CPD Jute Survey, 2007-08.

Table 40: Operating Cost of Sample Mills: Percentage Change between 2002 and 2007

Sector	Hessian	Sacking	CBC	Yarn/Twine	Diversified Products
Public	128.8	84.0	112.7	65.3	
Private	21.3	49.5	42.0	34.2	-4.7
Total	71.3	52.3	87.4	39.0	-4.7

Source: CPD Jute Survey, 2007-08.

Gross Revenue

Gross revenue of jute mills comprised of earnings from sale proceeds cash incentives, in export and domestic markets, and others. Jute manufacturers in general received 7.5 per cent of their export earnings through cash incentives.

Public sector mills earned relatively less for most of their products both in the domestic and international markets except sacking (in the domestic market) (Table 41). As explained earlier, this is related to the markets that are targeted for selling the products, which in BJMC's case was mostly in Asian and African markets where price tended to be relatively low. It was mentioned in the previous sections, instead of directly exporting to the retailers most of the BJMC's products were exported through local buying agents and international buying houses. As a result, their products attracted relatively low price compared to that of the BJMA or the BJSA products. Another important aspect is that price of output is related to the quality of the product, which, according to jute experts, are low for BJMC products. It appeared during the survey that private jute mills spent more to procure good quality jute, which BJMC mills did not do, as depicted in the procured price of different kinds of raw jutes by different types of jute mills.

Though a higher income in 2007 both in domestic and international markets can partly be explained by high inflation, i.e. buyers were willing to pay higher price for the product (Table 42).

Table 41: Gross Revenue of Sample Mills in 2007

Sector	Domestic Earnings					Export Earnings				
	Hessian	Sacking	CBC	Yarn/Twine	Diversified products	Hessian	Sacking	CBC	Yarn/ Twine	Diversified products
Public	40321	42691	58484	27499		59495	42556	56275	43243	
Private	65094	38407	60721	37840	85173	64741	45819	62398	48183	103700
Total	53297	40354	59229	36547	85173	62044	44176	58040	47684	103700

Source: CPD Jute Survey, 2007-08.

Table 42: Percentage Change in Gross Revenue of Sample Mills between 2002 and 2007

Sector	Domestic Earnings				Export Earnings				
	Hessian	Sacking	CBC	Yarn/Twine	Hessian	Sacking	CBC	Yarn/Twine	Diversified Products
Public	13	67	52	25	45	65	30	55	
Private	71	52	113	51	36	58	46	45	69
Total	46	59	60	48	42	63	34	47	80

Source: CPD Jute Survey, 2007-08.

Profit

Profit estimated for sample jute mills revealed a grim picture, especially for public sector jute mills, both in gross and net amount. In the case of gross profit where operating costs and income are considered, public sector jute mills suffered negative profits in all kinds of products (Table 43). Moreover, total amount of loss increased in BJMC mills during 2007 compared to that in 2002. On the other hand, BJMA mills earned profit in 2007 for all kinds of products they produced, especially by producing hessian products and diversified products. This was mainly because those products were sold in high-priced markets of Europe, USA and also in Asia. BJSA mills, in their specialised products, yarn and twine earned high level of profits. They also earned high amount of profit in manufacturing diversified products. It could be inferred from the above analysis that production of diversified products ensured high returns.

Table 43: Gross Profit of Sample Mills in 2002 and 2007

(In Taka per MT)

Sector	Gross Profit: 2002					Gross Profit: 2007				
	Hessian	**Sacking**	**CBC**	**Yarn/ Twine**	**Diversified Products**	**Hessian**	**Sacking**	**CBC**	**Yarn/ Twine**	**Diversified Products**
BJMC	-14907.8	-10272.8	-6152.6	-3096.9		-90478.8	-19127.6	-72711.4	-31137.5	
BJMA	4334.1	186.6	3438.4	-1213.2		17768.9	2871.3	22255.5	2967.2	14690.6
BJSA	5800.3		-4393.9	2772.2	7097.9	-12315.2		6520.4	12338.6	46415.6
Total	-7930.9	-7054.5	-4248.9	1079.72	7097.9	-35210.2	-6294.9	-44701.2	4242.4	22621.9

Source: CPD Jute Survey 2007-08.

When net profit is considered, where all costs including workers' gratuity, overdue loans and their interests are taken into cognisance against gross revenue, all kinds of factories operating under different ownership were found to suffer from negative profit (Table 44). It can be easily understood that because of the huge burden of debt, BJMC mills were found with a large negative balance in all kinds of products. This was also true in cases of both BJMA and BJSA mills.

Table 44: Net Profit of Sample Mills: 2007

(In Taka)

Sectors	Hessian	Sacking	CBC	Yarn/Twine	Diversified Products
BJMC	-261944	-78383	-212210	-93281	
BJMA	-41481	-33524	-18210	-30876	-44223
BJSA	-115227		-43872	-29835	-336461
Total	-149975	-52215	-154491	-36596	-117283

Source: CPD Jute Survey 2007-08.

A case by case examination of the level of profit indicates that there were few firms in the sample which had positive profit both as per gross and net accounting estimation methods (Tables 45, 46 and 47). These firms need to be identified in order to identify their reasons for success. However, some of the firms which were leased by the government to individual entrepreneurs could not run profitable business, because of the additional operation cost due to their statutory bindings for following government rules in terms of workers' wage, number of workers, etc. On the other hand, some private sector jute mills which were operating under leasing contracts were found to be performing well, although to a varied extent. Hence, it is hard to comment whether leasing would be a possible way to make the loss-making firms viable under private and public sector.

Table 45: Operating Profit and Loss Situation of Sample Mills (Number) in Hessian Production

Association	2002		2007	
	Profit	Loss	Profit	Loss
BJMC	0	9 (100)	0	10 (100)
BJMA	4 (100)	0	8 (80)	2 (20)

Source: CPD Jute Survey, 2007-08.
Note: Figures in parentheses refer to percentage of total.

Table 46: Operating Profit and Loss Situation of Sample Mills (Number) in Sacking Production

Association	2002		2007	
	Profit	Loss	Profit	Loss
BJMC	0	9 (100)	1 (10)	9 (90)
BJMA	3 (75)	1 (25)	9 (64)	5 (36)

Source: CPD Jute Survey, 2007-08.

Table 47: Operating Profit and Loss Situation of Sample Mills (Number) in Yarn Production

Association	2002		2007	
	Profit	Loss	Profit	Loss
BJMC	0	2 (100)	0	2 (100)
BJMA	2 (67)	1 (33)	8 (80)	2 (20)
BJSA	6 (67)	3 (33)	8 (80)	2 (20)

Source: CPD Jute Survey, 2007-08.
Note: Figures in parentheses refer to percentage of total.

6. Conclusions

Jute manufacturing sector of Bangladesh is passing through a critical juncture in the course of its long track record of development. The sector faced both opportunities and challenges. The sector has inherent weaknesses, but it has also demonstrated strengths. These weaknesses and strengths of the jute sector need to be identified in order to provide appropriate directions of reform and restructuring for the growth and development of the sector. The CPD study has strived to fill in a long gap in this respect. The study has attempted to provide an analysis on the basis of real time data generated through a broad-

based survey. The study comes out with specific findings in terms of performance of jute mills, particularly in economic, technological, operational and managerial terms, which has led to identification of major weaknesses and strengths of the sector and also helped to identify opportunities in order to take advantage of the emerging market conditions. It is hoped that these findings will help to provide necessary policy suggestions for the development of the sector.

First, prospect of jute sector at the global level is promising, though as of now, the signals are not as promising as one would have preferred. It is found that substitutability between jute and polypropylene has gradually declined possibly because of increasing demand of other alternate fibres and environmentally friendly products. However, a low substitutability of polypropylene for jute also indicates that global jute market is likely to continue at its current level of demand in the upcoming years. Besides, price of polypropylene increased in recent years mainly because of rise of petroleum price, which is the principle raw material for manufacturing polypropylene. This is likely to have a positive impact on demand and use of jute goods. A growing trend is observed in terms of use of natural fibre-based products. Jute goods would be the possible option because of their environment-friendly nature, by the virtue of the fact that these products are biodegradable. And hence, anti-polypropylene sentiment is getting stronger in the developed world, which is likely to create an opportunity and scope for growth of jute and jute goods.

Second, there is a good prospect of jute industry in Bangladesh in view of the discernible market signals. Global market is not shrinking, as some analysts tend to suggest. Bangladesh should rather attempt to expand its share in the global market by supplying more quality goods. Government rules on restriction of manufacturing and marketing of polythene products should be strictly maintained. There is space for enhancing use of jute goods at domestic level, in the construction sector for example. The possibility of duty-free export of jute goods to the Indian market, under the SAFTA agreement, needs to be utilised to the maximum level. Jute mills manufacturing, particularly yarn/twine, achieved considerable growth in the last two decades; besides, scopes of producing and using diversified products are also quite promising.

Third, there is a wide gap in the performance of public and private sector jute mills. Performance of BJMC mills was found to lag behind in terms of economic, technological, operational and managerial aspects compared to performances of the BJMA and BJSA mills, which were found to be relatively better, especially with regard to operational and managerial aspects. However, in terms of profitability, their performance was also found to be weak. BJSA mills performed well in most aspects such as capacity utilisation, growth, employment creation, technical efficiency, productivity, profitability, etc. In the case of reform in the jute sector, manufacturing of yarn needs to be considered as a "model" case. However, value addition was at a much lower level compared to those of traditional mills.

Fourth, poor capacity utilisation was a major concern for both the BJMC and BJMA mills. A high level of capacity utilisation could have enhanced employment of workers, who are currently underemployed or unemployed, particularly in the BJMC mills. It is important to examine whether use of more raw jute at domestic level (by using the unutilised capacity of machines of private and public sector jute mills) was a right proposition. Instead of exporting raw jute with minimum value addition, increasing use of

jute in traditional jute (conventional) mills which are currently being run at lower capacity, and manufacturing of diversified products could have ensured more foreign exchange earnings for the country.

Fifth, although technological base of public and private sector jute mills varies widely, in some sections public sector jute mills were found to perform better. However, performance of public sector jute mills declined over time. It appears that higher usage of the formidable technological base of the public sector jute mills, though weak in many cases compared to private ones, still remains an option.

Sixth, BJMC mills are over burdened by excess workers. Total number of workers in public sector jute mills is more than double the amount when compared to that in private sector jute mills. Besides, BJMC mills are burdened by paying about 100 per cent higher wage for workers, than the private sector jute mills. Thus, rationlisation of workers in terms of size in the BJMC mills needs immediate attention.

Seventh, no significant difference was observed between public and private sector jute mills in terms of procurement period of raw jute, although often it is claimed that public sector jute mills are unable to procure raw jute in due time because of lack of capital. This is also often cited as a reason for poor production in public sector jute mills. Both public and private sector jute mills were found to ensure timely raw jute procurement by borrowing from various sources including government, financial institutions, relatives and friends, and suppliers' credit. However, a huge amount of suppliers' credit was unpaid, both in the case of public and private sector jute mills.

Eighth, efficiency of management in public sector jute mills was found to be lacking. Most of the management personnel in public sector jute mills worked for a short period of time in a particular mill. They did not have the time to familiarise themselves with the nitty-gritty of a specific mill. Private sector jute mills are operated by management personnel who work in the same mill for a longer period of time. Performance level of management personnel (as judged by their superiors) was found to be lacking in the case of public sector jute mills compared to the private ones. It was found in the course of the survey that poor management is one of the major weaknesses in the jute sector which subsequently aggravated performances in other areas such as technical, operational, productivity and efficiency.

Ninth, it is a major concern that most of the mills operate without having any financial viability. Although some mills were found to operate profitably (when only operating costs are taken into account), the number of profitable mills declined sharply when total costs, including all previous debt repayment and workers' gratuity, etc., were taken into consideration. Without having financial viability, it is difficult for firms to operate for a longer period of time, which is true for both public and private sectors. It was found that the huge loss incurred in BJMC mills was related to the substantial expenses on account of workers' wages. Expenditures on interest, repair and maintenance were also high. Though performance of BJMA and BJSA mills in aggregate is relatively better, there are a number of jute mills in the private sector whose performance does not meet satisfactory level.

Tenth, a substantial size of debt is a major problem for all jute mills. The burden is higher in BJMC mills compared to that in BJMA mills. It is becoming clear that BJMC mills

cannot operate effectively if they are to continue bearing this huge debt burden. An appropriate mechanism needs to be designed to provide relief to these mills from their cumulated debt, in order for them to run with a clean sheet.

Finally, marketing of jute goods by BJMC mills is targeted to low-priced markets. BJMC management should review their marketing strategies. Currently BJMC mills sell most of their products through BJGA members or other agents. BJMC mills need to explore other markets, especially high-priced markets in Europe and the USA. BJMA and BJSA mills sell more of their products in those markets. Besides, timely delivery of jute goods and better quality of products are important factors to reckon with in order to acquire a higher price from buyers; BJMC mills were found to be lacking in this context. It is also important to examine how BJMC fixed the price of its products against the huge amount of losses. Without a sound rationale behind the fixing of the price, this could directly distort the market since these mills supplied the bulk share in both the domestic and international markets.

7. Policy Implications

First, there is no reason to close any jute mill based on the argument that Bangladesh's jute sector had no prospect. However, global demand is not rising at a fast pace. A slow, steady and guided growth mechanism needs to be designed. This would require a sound medium term strategy.

Second, a thorough review and revision of the financial account of BJMC jute mills is required before any kind of reform and restructuring is undertaken. The financial account maintained at the mill level needs to be examined by taking into cognisance current stock of all assets including both operating and non-operating machineries, land, buildings, liabilities to all parties including financial institutions for current loans, cumulated loans and overdue credit borrowed from suppliers, workers' arrears, and other liabilities. This will help policymakers to understand where the public sector jute mill stands and how these mills could be operated in a vibrant manner. It is also important to take necessary actions against allegations of corruption in public sector jute mills.

Third, the huge past debt burden, for both public and private sector jute mills, has created a dead-weight burden on their current operation and overall sustainability. In order to make operation of jute mills financially viable, the debt burden needs to be restructured and written off where necessary. An appropriate mechanism has to be found in this regard.

Fourth, a rationalisation of the size of jute mills, especially for those in the public sector, is urgently required. In view of the relatively slow pace of growth in the demand of jute goods, operation of jute mills on a large scale would be risky in terms of mobilising the necessary working capital, selling products in time with minimum inventory, amount of fixed costs required, etc. The survey found that when firms were operating on a small scale, they were likely to make more profits. An optimum size appeared to be small and medium size, and not a large one.

Fifth, rationalisation of size of the workforce in BJMC mills is urgently required. In the case of retrenchment, BJMC must ensure required level of funds for paying workers' overdue amount were available. It was found in the course of the survey that not all the

14,000 retrenched workers received their arrears, and those that had, did not receive it to the fullest amount. This is unacceptable, and the government should find the resources to pay all arrears of workers on an urgent basis.

Sixth, there is an opportunity for establishment of new jute mills. But in such cases, unutilised machines in public and private sector jute mills can be put into operation. With minimum repair and cost of maintenance of the unused machines, new mills could be set up. Entrepreneurs should be encouraged to set up mills of products which have potential of high growth in the coming years.

Seventh, all outstanding bills of traders and dealers need to be immediately paid by public and private sector jute mills. An ensured flow of capital is essential to encourage the dealers/traders to improve quality, quantity and punctual delivery of jute goods.

Eighth, marketing system of BJMC jute mills needs to be changed. An aggressive marketing strategy is required on the part of public sector jute mills involving areas such as market search, price offering, timely delivery of goods, etc. Adequate human resources for these specialised functions need to be taken under consideration.

Ninth, the "Jute Policy" needs to be reviewed and revised, and in this context the government's initiative to design a new jute policy is a well-timed initiative. However, the draft policy will need to be substantively improved to provide strategic directions to the jute sector and come up with an effective and realistic plan of action for short, medium and long term outlook. Jute policy of the country needs to take into account the prospects of global demand for jute and jute goods in the coming years, which is absent in the draft policy and come up with a realistic growth target. A vertically integrated production chain needs to be considered for jute and the jute manufacturing sector of Bangladesh.

The idea of an independent "Jute Board" may be considered in this regard, where there will be representation of major stakeholders. The Board will take all policy related decisions pertaining to the jute sector. The Board will set plan of action, offer guidance, monitor performance and provide support on an ongoing basis. One of the major tasks of the Board will be to establish "rules of the game" so that all mills, private and public, are operated on a market-based approach.

The reform measures in the jute manufacturing sector, as mentioned in the draft policy, envisage gradual privatisation of the public sector jute mills, and also mention that the public sector mill will need to enhance their operational efficiency. The operative word should be 'efficiency' and not whether it should be a blanket of privatisation or not. The proposed Board could take the policy decision in this context. In this connection, public-private partnership could be explored as a possible strategy. Indeed, a number of sample jute mills, operated under public-private partnership, were found to operate profitably.

The Jute Board is also expected to take measures to ensure high value addition of jute fibre in the country. Designing an appropriate strategy for higher domestic use of raw jute, for more domestic value addition, ought to be seen as a major task of the proposed Jute Board.

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