CHAPTER ONE

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CHAPTER - I

INTRODUCTION

1.1 GENERAL INFORMATION

Jute ranks next to cotton as the most important natural fibre. It is an agricultural crop growing abundantly in the regions of South Asia that constitute a contiguous geographical entity in this regard. Over sixty million farmers in Bangladesh, India, Nepal, Burma, and Thailand are critically dependent on jute and its allied fibres for their income. More than ninety percent of global output of jute comes from these countries including China. But internationally, jute cultivation and production of jute goods are limited mainly to India and Bangladesh. It is the most important cash crop and the biggest foreign exchange earner of the same countries.

In India, nearly 20 lakh acres of land is devoted to jute cultivation producing around 80 lakh cattles (14.5 lakh tonnes) of fibre valued at about Rs. 650 crores at current (1990) prices. The total value of finished products in the industry sector is around Rs. 1200 crore of which about Rs. 300 crore worth is exported annually. Being a labour intensive agro-based industry, it provides sustenance to millions of cultivators, workers, and to others engaged in the manufacturing, transport and marketing activities relating to jute industry. At present, the industry provides direct employment to about 2.5 lakh workers and some 40 lakh rural farmers dependent on it for a living. Indeed, jute industry is generating significant foreign exchange earnings and intimately concerned with the wellbeing of the social fabric of the Eastern States of India.
Jute had its preeminence as the single largest item of Indian exports and contributed nearly 23 per cent to the total export earnings in the late 1960s. But in recent years that percentage has fallen to 5-6 per cent owing to extremely adverse conditions like rising costs, depressed prices, labour forces' aversion to modernisation, severe competition from jute exporting countries and synthetic fibres, production cuts, antiquated technology, etc. Even then, Indian jute industry is earning precious foreign exchange of around Rs. 300 crore annually. The health and viability of the industry and trade are, therefore, a matter of deep concern.6

In Bangladesh, jute is a leading sector of the economy. Its importance in agriculture, trade and manufacturing as well as country's gross domestic product (GDP) has hardly been overemphasised. Although jute occupies hardly ten per cent of total area under crops in Bangladesh, it is the chief cash crop for a large number of farmers. A total of 50 lakh farmers are estimated to be involved in jute cultivation along with their dependents.7 It provides employment to 2.50 lakh people equivalent to about 45 per cent of the total workforce engaged in the large-scale manufacturing industries.8

A few years ago, Bangladesh jute industry was the only earner of huge foreign exchange. It contributed 88 per cent of the total export earning during 1970s. Presently, this rate has declined to only 40 per cent due to the shrinkage of jute goods market both in domestic and overseas segments. Still the annual turnover of jute industry amounted to Taka 783 crore equivalent to Rs. 500 crore of Indian currency.9
Bangladesh jute industry is now in the grip of countless serious problems, and its overall performance and conditions have been deteriorating. As per latest reports, the Bangladesh jute sector is plagued with an accumulated loss of nearly Taka, 3600 crore since 1972.

1.2 HISTORICAL PERSPECTIVE

The historical evolution of jute industry from its early days till the recent period has been traced out in this section. To facilitate understanding and systematic presentation the evolution period has been divided into three distinct phases.

1.2.1 Phase I (Ancient Period till the Advent of Industrial Revolution)

Jute has been a part of the Eastern Indian economy since time immemorial. Through sixteenth to eighteenth centuries, jute fibre was produced as a garden plant and its leaves were used as vegetables or as medicine. The use of raw jute plant as the material of making twine, ropes, matting, and clothing for the poor was not known to the people. It was, however, produced for domestic consumption in the villages of Eastern Bengal (now the state of West Bengal and Assam in India, and Bangladesh). The fibre value of the plant came to be known later. In other words, over 125 years ago jute was not at all an important crop to be grown by the farmers on a large scale. The farmers just used to grow jute for their domestic use along with other fibre crops.

Infact, before the advent of Industrial Revolution which was characterised by scientific inventions and technological development, the growth of jute industry was
not so remarkable. The concept of industry in general and jute industry in particular emerged during the period of Industrial Revolution. Hence, information regarding different aspects of jute like acreage, yield, production, consumption trade etc. for this phase are not found in the literature.

1.2.2 Phase II (Development from Advent of Industrial Revolution Till World War II)

Jute industry was in its embryonic stage during the early eighteenth century. It undertook the shape of handloom industry and created the ground for hand-spinning and hand-weaving. Ropes, screen, matting and gunny clothing for garments and bedding materials were the outcome of the industry at this stage. Domestically invented jute processing devices helped Bengal to export hand-made jute fibre to American market as early as the eighteenth century.12

It was East India Company which made the jute and jute products familiar to the customers/users outside India. In 1793, the Bengal Board of Trade sent a small quantity of 100 tonnes of jute fibre sample to the UK for experimentation related to mechanical processing.13 But till 1830 the manufacture of gunny bags, and jute cloth was the monopoly of Bengal hand-loom weaver.14 The breakthrough came in 1830 when the first steam-powered jute mill was set up and jute fibres were spun mechanically at Dundee in Scotland. Thus the years following 1830 saw a rapid decline in jute handloom industry in Bengal.

The first weaving mill was set up in 1938.15 Jute industry soon mushroomed all over Western Europe with Dundee
as its main centre. To meet the rising demand of raw materials of Scotland based jute industry, British-India was impelled to produce and export raw jute rather than produce gunnies in the Bengal handloom. From 1840s to 1870s, Dundee had a near monopoly of the world's factory made jute cloth based on sub-continental supplies of raw jute.16

The rise of jute manufacturing in Indian sub-continent started around 1855 at Rishra on the river Hooghly, 21 kms. upstream from Calcutta. That machine-manufacture of jute textile based on steam power was a small jute spinning mill and was established by a Scottish merchant, George Ackland.17 For this new achievement, in fact, India furnished land and labour; Scotland the brain and careful oversight.18 Ackland's unit was not successful, but it apparently showed enough promise to Borneo Company, a trading enterprise in Calcutta, to start an integrated spinning and weaving mill based on steam power in 1859.19 During 1855-1870, the growth of British Indian jute industry was fairly rapid and led to the appearance of five mills comprising of 950 looms. This tremendous growth was facilitated because of the favourable conditions like the rise of free trade in Europe, the development of railway and merchant shipping, and the sharp fall in freight rates. Finally, the opening of Suez Canal in 1869 contributed towards a rapid increase in the volume of world trade, particularly the movement of voluminous agricultural commodities which required jute packaging materials.

Industrial revolution came first in Britain and, accordingly, its industrial economy was stimulated expeditiously. Indian overall industrial sector, especially jute industry, felt the impact and achievement of this
revolution much later. So jute industry initially flourished in Britain and other Western European countries. The growth of jute industry in India became more conspicuous only between 1870s and 1940s. The number of jute mills rose from 20 in 1885 to 35 in 1901. By 1894, the raw jute intake of Indian jute industry was higher than that of its British counterpart. On the eve of first world war, the Indian jute industry comprised 64 mills with over 3600 looms capacity. This growth was again reflected in the immense increase in the export of raw jute and jute manufactures from India. It is worth mentioning that jute industry remained largely in the European hands as late as 1915 when the number of mills stood at 72, all under European control.

Analysis of growth of jute industry during post-First World War shows an interesting feature: the number of looms and spindles increased by a higher ratio than the number of hands employed. This was the effect of the introduction of better machinery that reduced the necessity of human labour. During 1914-1930, number of mills increased from 64 to 68, looms from 36000 to 1,14,000 and persons employed from 2,16,000 to 3,43,000. Besides, British Indian export of raw jute was high at that period as the demand of jute expanded in the countries other than Britain e.g., Germany, France and Belgium. The Great Depression (1929-33) affected the industry badly. It resulted in sharp fall in trade volume, price and productivity. Still the industry was able to face the crisis much better at the cost of its adequate reserves. At the close of 1930s, the jute industry had 107 mills, 1.37 million spindles and over 68,000 looms, and an employment figure of about 3,00,000 workers.
The Second World War (1940-45) was a period of great prosperity for the industry since the demand of gunny bags from the army and civilian population increased enormously. The industry worked at its fullest capacity; profit rose to peak level during the war period. It is noticed that, while in 1945 the index of profit for all industries had increased to 234, that for jute was 328 taking 1939 as the base year. On the other hand, export earning from jute which amounted to $46.2 million annually between 1935 and 1939 came down to only $26.1 million between 1940-45 despite a rise in price. On the whole, the jute economy of India showed a strikingly uneven pattern of development during the period 1940-45.

1.2.3 Post World War II and Recent Growth (1946 onward)

Production of Jute: After the World War II, exports of jute and jute manufactures recorded a marginal recovery and the prosperity of jute industry continued for two years immediately following the war. At the time of partition (1947) of British India, the number of mills, looms, and spindles stood at 107, 65,000, and 1.09 million respectively. The production capacity rose to 8.05 million bales. In 1947, out of 107 mills in undivided India, not a single one of the mills fell to Bangladesh's (erstwhile East Pakistan) share although Bangladesh belt accounted for two-thirds of the world's raw jute production and had a virtual monopoly in the finer variety of fibre.

Bangladesh's share in world jute production declined from two-third in 1950 to about 45 per cent in the latter part of 1950s. In 1964-65 to 1969-70, jute production fluctuated mildly. The political turmoil in 1970-71
surrounding Bangladesh's emergence, resulted in even a more drastic reduction in its share of world raw jute production which fell to between 26-36 per cent. During 1975-1980, jute production in Bangladesh was below the level of late 1960s. The production started increasing again in 1985-86.

With the rise of China, Nepal and Thailand as new jute producing countries, and owing to the increased acreage of India, Bangladesh's share in world jute production stepped down from 28 per cent during 1976-80 to 17 per cent in 1981-86. This further rose upto 25 per cent in the year 1987-88 which is not at all a hopeful trend comparing its growth trend of the early days of 1950s.

India's history of raw jute and allied fibre's production is also noticeable. In fact, India's production of jute fibres showed an upward trend after partition. At that time 75 per cent of jute growing areas were under Bangladesh (erstwhile East Pakistan) and, therefore, the Indian Government made concerted efforts to increase the production of raw jute within the country. As a result, area under jute cultivation increased from 6.52 lakh acres in 1947-50 to 14 lakh acres by 1951-55 and the output of raw jute rose from 3.80 lakh tonnes to 7.42 lakh tonnes in the same period. Until mid-sixties, India had imported raw jute from Bangladesh to feed its giant industry. This trade was discontinued entirely in 1965 due to war between India and Bangladesh (the then Pakistan). Subsequently, Indian Government's policy of 'Green Revolution' resulted in more production of jute fibre which stood at more than 17 lakh tonnes in the later half of eighties. Presently, India accounts for 44 per cent share of world jute production in 1990-91 against 40 per cent in 1987-88 as per FAO Statistics.
Besides Bangladesh and India, Thailand had become an important producer of raw jute and allied fibres in 1960s. Its share in world jute production rose sharply to 11 per cent in 1966-70. In 1970s its share remained between 11 per cent to 7 per cent (Exhibit 1.1). China's production rose phenomenally from 0.35 lakh tonnes in 1944-49 to 2.06 lakh tonnes in 1985-86 and now it is 6.60 lakh tonnes as in 1989-90. Both China and Thailand are progressive so far as the total production and per hectare production are concerned.

Export of Raw Jute: In tracing the evolution of world export trade of raw jute and allied fibres, it is observed that India did not have any participation in global trade for several years following the partition in 1947 and till 1965 it was the major importer of raw jute from Bangladesh. 28 Bangladesh has been the single largest exporter of jute fibre in the world market. Before 1953-54, having no jute mills, Bangladesh had to exports its entire raw jute to the importing countries of Western Europe, USA and India. Until 1960, Bangladesh's share in world export market was about 85 per cent which reduced to 80 per cent between 1960 and 1965. As most of the Western European countries had started setting up synthetic packing materials manufacturing industry since mid-sixties, their imports of raw jute from Bangladesh have declined in the subsequent period. Between 1976 and 1980, Bangladesh jute exports further came down to 65 per cent. The rise in Thai exports may also have had a partial adverse effect on such a downswing trend in Bangladesh jute exports.

The export of Bangladesh raw jute and allied fibres further rose from 63 per cent in 1981-82 to 83 per cent in 1986-87 which is quite an encouraging trend in world
## Exhibit 1.1


<table>
<thead>
<tr>
<th>Year (July-June)</th>
<th>Production of Raw Jute ('000 metric tonnes)</th>
<th>Export of Raw Jute ('000 metric tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>World</td>
<td>B.Desh</td>
</tr>
<tr>
<td>1966-70</td>
<td>17087</td>
<td>6077</td>
</tr>
<tr>
<td></td>
<td>(25)</td>
<td>(14)</td>
</tr>
<tr>
<td>1971-75</td>
<td>19007</td>
<td>4955</td>
</tr>
<tr>
<td>1976-80</td>
<td>20060</td>
<td>5634</td>
</tr>
<tr>
<td></td>
<td>(28)</td>
<td>(31.6)</td>
</tr>
<tr>
<td>1981-82</td>
<td>3998</td>
<td>868</td>
</tr>
<tr>
<td></td>
<td>(22)</td>
<td>(29)</td>
</tr>
<tr>
<td>1982-83</td>
<td>3950</td>
<td>879</td>
</tr>
<tr>
<td></td>
<td>(22)</td>
<td>(23)</td>
</tr>
<tr>
<td>1983-84</td>
<td>3905</td>
<td>954</td>
</tr>
<tr>
<td></td>
<td>(23)</td>
<td>(26)</td>
</tr>
<tr>
<td>1984-85</td>
<td>4290</td>
<td>837</td>
</tr>
<tr>
<td></td>
<td>(19)</td>
<td>(25)</td>
</tr>
<tr>
<td>1985-86</td>
<td>5741</td>
<td>1153</td>
</tr>
<tr>
<td></td>
<td>(17)</td>
<td>(31)</td>
</tr>
<tr>
<td>1986-87</td>
<td>5681</td>
<td>907</td>
</tr>
<tr>
<td></td>
<td>(25)</td>
<td>(19)</td>
</tr>
<tr>
<td>1987-88</td>
<td>4524</td>
<td>982</td>
</tr>
<tr>
<td></td>
<td>(22)</td>
<td>(31)</td>
</tr>
<tr>
<td>1988-89</td>
<td>2959</td>
<td>799</td>
</tr>
<tr>
<td></td>
<td>(22)</td>
<td>(18)</td>
</tr>
<tr>
<td>1989-90</td>
<td>3197</td>
<td>825</td>
</tr>
<tr>
<td></td>
<td>(21)</td>
<td>(21)</td>
</tr>
<tr>
<td>1990-91</td>
<td>2641</td>
<td>846F</td>
</tr>
<tr>
<td></td>
<td>(24)</td>
<td>(20)</td>
</tr>
</tbody>
</table>

**Sources:**
1. IJMA Bulletin
2. BMJMC Bulletin
3. FAO Production Year Book
4. Bangladesh Ministry of Jute

**Explanation:** Figures in parentheses represent per cent quantity of total world production.

* Figures include China's export

F = F.A.O. estimate

N.A. = Not available
export trade. This trend could still be maintained as Bangladesh jute has comparatively better quality and cost advantages if compared with its traditional competitor, India.

India could only export a small quantity of raw jute as almost all its raw jute stock is consumed by the jute industry. It can only export in the year of good harvest. From the Exhibit 1.1, it is seen that its contribution to the world export of raw jute market varies from 1.0 per cent to 8 which is again highly inconsistent. Moreover, its export trade is restricted to the lone importer, USSR* which purchases mainly the superior grade of fibre like TD/2 and TD/3. Export of raw jute by other jute growing countries are not significant.

**Jute Goods Production:** Bangladesh established its first jute mill only in 1951, after the partition of British-India. Availability of cheaper and better quality jute fibre as well as the continuous expansion of overseas jute products market/demand, worked as facilitating factors for the rapid growth of jute industry in Bangladesh. The number of jute manufacturing units had become 50 between 1951 and 1970. But during post-liberation period (after 1971) this growth trend gradually shrinked and 27 mills were set up during the 70s and 80s. Thus the total number of mills stood at 77, out of which 70 mills of Bangladesh jute industries are functioning smoothly both in public and private sectors.

Indian jute industry established 112 jute manufacturing companies by 1950. About half of total mills

* In all cases 'USSR' would mean the erstwhile USSR.
have closed down their shutters between mid-seventies to mid-eighties due to continuous financial loss, shortage of raw materials, increase in cost, frequent labour unrest and some other reasons. There were 67 jute mills under operation in 1985-86. The situation now has improved because of several economic and financial policy packages and legislative support provided by the Government of India. At present, the number of closures have reduced to 6 units and there are 73 jute mills actively undertaking jute goods production.

The pattern of growth of jute industry shows that India is the largest producer of jute goods and has had a dominant position for nearly a century. It is still dominant and large so far as its production capacity is concerned. World's loomage roughly estimated in the year 1981-82 was 1,09,275 of which Bangladesh's share was 25,250 and Indian share was 44,200. With this capacity, Bangladesh and Indian jute industry are manufacturing nearly 5 lakh tonnes and 13 lakh tonnes of jute products respectively per annum. Besides this two major jute and jute goods producing countries, other countries of western Europe, the USA, Japan, USSR, Argentina, Brazil, China, Egypt, Kenya, Thailand and Zaire are also manufacturing jute goods in small quantities.

**Distribution of Jute Goods:** Bangladesh consumes a small portion of the total quantity of jute goods produced in its jute industry. About 80 per cent of the products are sold in the overseas market. It entered in the world export market in the mid-1950s. The share in world market which was 6.7 per cent during 1951-60 went upto 18.93 per cent in 1961-65. It accounted for about 31.47 per cent (Exhibit 1.2) of world market share in 1966-70. This continuous increase
EXHIBIT 1.2

WORLD TRADE OF JUTE GOODS (1961-1990)
('000 Metric tonnes)

<table>
<thead>
<tr>
<th>Year/Period</th>
<th>World export</th>
<th>Bangladesh</th>
<th>India</th>
<th>Other countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961-65</td>
<td>6603</td>
<td>1250(18.93)</td>
<td>4324(65.49)</td>
<td>1029(15.58)</td>
</tr>
<tr>
<td>1966-70</td>
<td>6886</td>
<td>2167(31.47)</td>
<td>3598(52.25)</td>
<td>1121(16.28)</td>
</tr>
<tr>
<td>1971-75</td>
<td>6245</td>
<td>1981(31.72)</td>
<td>2949(47.22)</td>
<td>1315(21.06)</td>
</tr>
<tr>
<td>1976-80</td>
<td>5966</td>
<td>2391(40.07)</td>
<td>2268(38.01)</td>
<td>1307(21.92)</td>
</tr>
<tr>
<td>1980-81</td>
<td>1354</td>
<td>516(38.1)</td>
<td>490(36.19)</td>
<td>348(25.71)</td>
</tr>
<tr>
<td>1981-82</td>
<td>1255</td>
<td>548(43.7)</td>
<td>369(29.4)</td>
<td>338(26.9)</td>
</tr>
<tr>
<td>1982-83</td>
<td>1201</td>
<td>535(44.55)</td>
<td>323(26.89)</td>
<td>343(28.56)</td>
</tr>
<tr>
<td>1983-84</td>
<td>1017</td>
<td>521(51.2)</td>
<td>234(23.00)</td>
<td>262(25.8)</td>
</tr>
<tr>
<td>1984-85</td>
<td>1113</td>
<td>484(43.5)</td>
<td>278(24.91)</td>
<td>351(31.52)</td>
</tr>
<tr>
<td>1985-86</td>
<td>1100</td>
<td>494(44.9)</td>
<td>255(23.18)</td>
<td>351(31.92)</td>
</tr>
<tr>
<td>1986-87</td>
<td>1091</td>
<td>530(48.6)</td>
<td>268(24.56)</td>
<td>293(26.84)</td>
</tr>
<tr>
<td>1987-88</td>
<td>1050</td>
<td>500(47.6)</td>
<td>277(26.38)</td>
<td>273(26.02)</td>
</tr>
<tr>
<td>1988-89</td>
<td>1009</td>
<td>488(48)</td>
<td>224(23)</td>
<td>297(29)</td>
</tr>
<tr>
<td>1989-90</td>
<td>1032</td>
<td>460(45)</td>
<td>226(23)</td>
<td>346(32)</td>
</tr>
</tbody>
</table>

Explanation: 1) Figures in paranthesis represent per cent quantity of total world export.

2) Average measures (1st four rows)

Sources:  
(1) IJMA Bulletin; (2) BJMC; (3) FAO Trade year Book & FAO Production year book; (4) Bangladesh, Ministry of jute and (5) FAO Quarterly.
in market share was disrupted till the later half of 70s due to the inroads of synthetic substitutes. The situation further improved in 1987-88 and as such Bangladesh has exported about 5 lakh tonnes of jute goods capturing 47 per cent share of the world trade.

The analysis of the evolution of Indian export trade reveals that, India was a principal exporter of jute goods. But this growth and prominence in world market declined during 1950s after the establishment of jute industry in Bangladesh. Moreover, from mid-sixties, polypropylene has emerged as a close substitute of jute. Consequently, India now faces a severe competition in global markets.

Exports of Indian jute goods, which had been rising slowly during fifties began declining since mid-sixties (Exhibit 1.2). Volume of exports, which was on an average 65.49 per cent of the world export in 1961-65, dwindled gradually to 38.01 per cent in 1976-80. In 1971-86 global exports of jute goods again declined by 2.54 lakh tonnes to 10.96 lakh tonnes. In the same period, Indian exports fell from 4.90 lakh tonnes to 2.55 lakh tonnes while the country produces 14 lakh tonnes of jute goods a year. Domestic consumption is about 11 lakh tonnes. In recent years, Indian export of jute goods have declined because of higher cost and qualitative inferiority compared with other competitor's product. However, India is still earning nearly Rs. 300 crores annually from the export of jute goods.31

1.3 JUTE CULTIVATION

Jute is the commercial name of the fibre derived from a special type of plant and belongs to Genus Chorchorus in the family Tiliaceace under the botanical name classification
order. The genus *chorchorus* consists of many species of which two: *chorchorus olitorius* and *chorchorus capsularis* commonly known as Tossa (Desi jute) and Bogi (white) are grown in a number of countries in large areas. Allied fibres of jute viz. kenaf (Thailand), Mesta (Bangladesh and India), Rosselle and *Urenatobata* (Zaire) are considered lower grade of jute. Flax and hem are other good fibres. Jute growers undertake different steps in process of cultivation of jute plant to get ultimate raw jute fibre as a product. The steps can easily be understood from the diagram shown in Exhibit 1.3.

**EXHIBIT 1.3**

**THE PROCESS OF JUTE CULTIVATION**

- Ploughing
- Sowing and Manuring
- Weeding, Hoeing and Thining
- Steeping and Retting
- Extracting
- Harvesting
- Preparation for sale

1.3.1 Ploughing

During the month of November-December the land is prepared for sowing the seeds of jute plant. The ploughing and cross ploughing followed by laddering and horrowing are done for several times to mark the land ready for sowing. Sometimes more ploughings are needed depending on the soil condition of the land.
1.3.2 Sowing and Manuring

Jute seeds are sown during February and May according to the position of the land, nature of soil, and the amount of rainfall. The usual and optimum time of planting is 15th March to 15th April for capsularis (white) and 15th April to 15th May for Olitorius (Tossa). The system practised in sowing seeds is called seeding. There are two types of seedings; row seeding, and broadcasting seeding. The former type is more advantageous and scientific. Row seeding ensures best weed control, efficient use of sunlight, and better yield.\(^{32}\)

For better yield and quality fibre, jute growers of Bangladesh and India are using fertilizer in the jute cultivation. Generally when the plant is six or seven months old, farmers put both locally available green manures and chemical fertilizers. They use cowdung, composite ashes, well rotten or even dried water-hyacinth etc. as local manures, and Nitrogen, potassium, urea, and Triple sulphur phospate etc. as chemical fertilizer.

1.3.3 Weeding, Hoeing and Thinning

Weeds and excess plants are required to be removed carefully from the field so that young plant can easily derive nourishment from the soil, air, heat and water. After sowing, it takes three to eight weedings and hoeings for the proper growth of jute plants.

1.3.4 Harvesting

Jute plants are ordinarily ready for harvesting about four months after sowing. But for seeds and high fibre yield it takes nearly six to eight months. The plants are cut
close to the ground and tied together in bundles and left in the field for four to five days to shed leaves.

1.3.5 Steeping and Retting

Harvested plants are required to be steeped for early retting. The plants are steeped in running or stagnant water for 15-25 days to bring about a fermentation process, which dissolves the soft tissues surrounding the fibre. The effect of the process, known as retting, is that the fibre can be easily separated from stem. The quality of the fibre depends greatly on the care exercised in retting. The nature of the weather (Hot/Cold), water used in retting, the duration for which the fibre is steeped in water, and suitability of material used for weighing down the plants to keep them submerged are among the factors which enter into the final quality of the product.

1.3.6 Extracting

The fibre which is situated in an outer layer of the stem, between the wood and the stick on the inside and the cortex on the outside, is extracted through stripping which is in essence a process of jerking the stem free of fibre.

After stripping, the fibre is washed and then dried in the sun, two or three days exposure being adequate, given enough sunshine. Once dried, it is made up into bundles preparatory for marketing. Different types of bundles of different weights are prepared and this practice varies from place to place depending upon the requirement of the market.

1.4 JUTE MANUFACTURING

In normal practice, jute fibre produced by the farmers undergoes three different forms to reach the
mill-gate and at the export points such as (1) from the village to the primary market or haat (2) from primary market to the bailing centre; and (3) from the secondary market to the mill-gate or shipping points. The trade middlemen who operate at the various stages and constitute the set up of the jute markets are Farias, Baparis, Arathder, Broker, Dalals, Kuccha balers, Pucca balers and Shippers.

Broadly speaking, the manufacture of jute cloth entails first the production of yarn and then weaving of the yarn into different varieties of jute fabric. The principal stages of manufacturing process of jute goods are shown in Exhibit 1.4.

**EXHIBIT 1.4**

**DIFFERENT STAGES IN MANUFACTURING**

1.4.1 Assortment and Bailing

Assortment means the tying of jute fibres into small bundles for easy operation and handling. This is usually done at the farmers level. But sometimes, it has to be done in the jute mill if the farmers fail to assort their fibres. Small bundles thus made are again tied together into a standard weight which is called bales. Each of the bale
contains fibres weighing 400 lbs or 181.44 kgs (in British measures).

1.4.2 Batching

The blending of fibre in varying qualities and grades in such a manner as to ensure that the different lots produced of each type of yarn are uniform in strength and colour and softening of the fibre with the aid of mineral oil, water and emulsifier (soft soap) to render the somewhat rough and stiff raw material smooth, pliable, and easy to work upon. This process of softening in jute fibre to make it ready for spinning is termed as batching.

1.4.3 Carding

In this phase, the hard form of jute fibre is broken down sufficiently into an entangled mass and converted finally into a ribbon form. The weight of the fibre delivery then becomes uniform per unit of length. The carding is done by two types of machines: Breaker and Finisher.

1.4.4 Drawing and Doubling

The regular and uniform elongation of ribbon to make it lighter is called 'drawing' and the running of two or more ribbons at delivery is called 'doubling'. The straightening of the fibre into a continuous ribbon is called a 'sliver'.

1.4.5 Spining, Reeling and Twisting

It is the final stage of yarn production where ribbons are converted into yarn of uniform thickness and
strength which is ultimately used in weaving textile. Reeling consists mainly of winding the yarn on the circumference of a reel of definite size into 'skeins' and 'Hanks' of a definite continuous length. Making a thread of strong and compact form, single yarn are twisted, doubled, folded or plied together, and this process is named as 'twisting'.

1.4.6 Winding, Dressing, and Sizing

Winding is the operation of transfer of yarn from one package to another, such as, winding from bobbin to spool for warp and winding from bobbin to cops for weft. The winding is also done into spools and cops for storage and sometimes to direct sale of yarn. 'Dressing' enables coating of the warp yarn with some adhesive while beaming sized yarn helps weaving operation by minimising friction, adds weight to the yarn and provides a good finish.

1.4.7 Weaving

It is a process carried out on looms, for forming a web of cloth by insecting threads. It is an art by which two or more series of the threads crossed at right angles to each other, are bound together to produce cloth. Woven cloth consists of lengthwise thread termed warp and cross-wise threads called weft.

The device which produces woven fabric by the interplacement of two sets of threads is known as loom. Generally power looms and broad looms are found in every mills. Circular looms are new addition which are more sophisticated. Broad looms are meant for weaving wide cloth for carpet backing.
1.4.8 Finishing

It includes a series of processes like damping, cloth repairing, calendering, measuring, cutting, sewing, cropping, bag banding, hand hemming etc. designed to improve quality of the materials, the character of the yarn, structure of the fabric and to render it suitable for the purpose it is intended to serve. It is in the finishing section of a mill that jute bags and other products of several sizes and varieties are produced. Finally, these products are packed and made into bales with the help of hydraulic presses, which are powerful machines capable of packing large quantities of cloth and bags into a relatively small compass. Thus the products are made ready to send either in the domestic or in overseas market for trade.

1.5 MANAGEMENT ASPECTS OF JUTE INDUSTRY

The management aspects of jute industry are quite distinct as applicable to other industries. To have a clear understanding, factors like nature of raw materials, processing in jute industry, jute products, marketing of jute products; technological development, and the requirement of human skill have been highlighted in the following sub-sections.

1.5.1 Nature of Raw Materials

Jute fibre, an agro-based and natural fibre, is used as raw materials in jute industry. Sometimes mesta and other allied fibres are also used by the same industry. It is largely produced in the north-eastern states of India and in whole of Bangladesh. The availability of jute fibre is subject to fair climatic conditions, drought, excessive rainfall, flood, cyclone etc. are affecting normal growth of
jute plant and thus the supply of raw materials is also affected.

Being a seasonal crop, the price of raw jute fluctuates every now and then. The price of jute fibre constitutes nearly 40 per cent of total cost of final products. Better quality of raw material at a minimum cost, therefore, results in better profit to the industry. Hence, the cost of raw jute is a matter of great concern to the management of the industry. As an important cash crop, the Governments of the growing countries undertake necessary measure to control the price of jute fibre on the one hand and, on the other, ensure a remunerative price for the jute growers. The jute industry of Bangladesh and India enjoy the benefit of having supply of raw materials which are abundantly produced in the agricultural sector of both the economies. Other jute good producers like UK, America, China, Thailand and European countries have to import jute fibre as raw materials used in their jute industries.

1.5.2 Process in Jute Industry

Generally, jute fibre is processed into thread/yarn which is used for weaving jute cloth/fabric. The cloth is further converted into sacks/bags. In some cases, jute fibre and yarn are treated as final products of the jute industry. These raw jute and yarn are sold in both domestic and overseas market, especially to other jute goods processing units. Raw jute fibre sold as a final commodity is processed in the bailing machine to categorise the fibre into different grades, based on quality, and thus made ready for sale in the ultimate market.

The end product of spinning process is yarn. Plant layout in this process is vertically arranged and is quite
distinct from weaving layout. Yarn is treated as an intermediary product while the weaving process continues upto the finishing stage of manufacturing process. The finished products thus produced are hessian, sacking and CBC, which are conventional jute products, used and sold in packaging markets. There are other processes in manufacturing jute goods other than traditional packaging products. In these processes, only jute fibre, yarn or jute fabric are used for making decoratives, wall-coverings, school bags, designed apparels, etc. But these activities are well confined to the handloom, small and cottage industry sectors, and cooperative sector. There are a few jute manufacturing companies undertaking the processing of value added non-traditional and diversified items, which have a good response in jute goods market both inside and outside the traditional jute-producing economies of Bangladesh and India.

1.5.3 Jute Products

Jute industry produces goods which are basically used for the purpose of packing or wrapping of other commodities. The products are industrial in nature when used in other industrial concern for further processing; consumer products where the ultimate buyer consumes it; and shopping products when used as decorative or fancy items. Jute products are again termed as traditional and non-traditional items. Traditional items like hessian, sacking and carpet backing cloth are still the principal product items accounting for about 90 per cent of the business activities. Whereas, non-traditional product items are not yet largely produced though they are getting priority in latest policy considerations. The non-traditional and valued-added items in the product line includes jute carpet, wall-covering,
curtains, shoulder bags, shopping bags, school bags, upholstery, shoes, blankets, decoratives, apparels and so on. Non-traditional items are gaining popularity among the customers both in domestic and international market segments of the jute industry.

1.5.4 Marketing of Jute Product

Jute products are marketed both in the domestic and international markets. The marketing policies of Bangladesh jute industry are fully export-oriented while Indian jute industry sales are mainly in the home market. Both Bangladesh and India are the major jute exporting countries competing with each other in the world jute market. This competition often becomes intense. Besides, both the industries face severe competition from substitute synthetic packaging materials.

In the marketing mix, products are more or less traditional - hessian, sacking, and CBC. Other value-added and diversified products, under the process of manufacture, are produced in a limited quantity. The non-traditional products are sold to special market segments.

The price of the jute product is a major consideration especially in a competitive market. Generally, prices are fixed according to the cost-plus policy system. Practically, the policy is very troublesome to execute because a number of inherent problems arise affecting the price policy. Moreover, the price structure followed in both domestic and overseas market differ to a great extent. Being a Government supported industry, jute industries' policy is all the while dictated by the concerned Governments. Jute Mills associations of both Bangladesh and
Indian Jute industry, particularly in the private sector, are sometimes fixing common price applicable to all members units. Prices in the world jute goods market are always fixed by the Dundee based jute market or by the Exporters/ Shippers' Associations.

Promotional policies are less pronounced in the jute industry because of the conservative nature of the product as well as the market. However, limited promotional measures are launched every year with a view to expand market and increase sales. Government takes interest in this regard with the help of separate organisations exclusively meant for promoting jute goods market. Steps have been undertaken most recently by both the jute producing countries to popularise the non-traditional and diversified products among the prospective customers in domestic as well as overseas market.

Direct distribution is a common practice in the case of distribution policy of jute industry. Sometime trade middlemen also share the function of distribution by providing additional channels. However, channels maintained in domestic and overseas market are not alike. Both Bangladesh and Indian jute industries are actively involved in evolving new ways and means to market the jute goods to hold the maximum share of the packaging materials market.

1.5.5 Technological Development

Jute industry, started in this sub-continent nearly a hundred years ago, is no longer in a position of strength. It is responsible for much of the machinery in use being old and based on an outdated technology. Efforts for modernisation and upgrading of technology have been made at
different times. In fact, between 1951 and 1956 the speed of modernisation of machinery throughout the mills was quite fast. A short-fall came in 1957-58 but again between 1959 and 1963 considerable work was done in this direction. After that, both Bangladesh and Indian jute industries are using, more or less the same kind of old machinery with some modernisation and repairing. Several attempts have been taken for the modernisation and upgrading of technology. But the programmes have only partially materialised due to adverse attitude of the workers, inadequate financial support, and other such reasons.

Some jute mills have installed latest technology evolved in the area of textile business. The introduction of circular looms and composite looms are the examples. Lately, both Bangladesh and Indian jute industries are encouraging the policy of modernisation and development of technology to face the competition from synthetics producing industries. Governments of the concerned countries have allocated sufficient funds and liberalized some provisions to enable the constituent jute mills to enjoy the benefits of modern textile technology. Especially, jute industry of India has already come up with certain effective technology, used at different stages of processing at the Indian Jute Industry Research Association (IJIRA).

1.5.6 Requirement of Human Skill

Human resource is one of the important factors for the successful operation of jute industry. As the industry is highly labour-intensive, its long-term productivity, profitability and overall development depends upon the state of human resources in the industry. The jute industry requires a large number of efficient and skilled people at
the middle as well as lower-level management. The industry has to spend a big amount for the payment of salary/wages which accounts for about 40 per cent of the total cost of finished goods. The talented and skilled workforce is, therefore, required to reduce the cost of production, which would ultimately make the end product's price more competitive and profitable.

Because of long experience, Indian workforce is more efficient, skill, and productive compared with Bangladesh. However, in terms of manday/tonne the industrial workers of China and Thailand are showing better performance than that of Bangladesh and India taking comparatively less time in production process.

The elements like people's commitment to job, high morale and sense of responsibility, amicable labour-management relations, etc. essential for jute industry, have greatly being affected by unfair labour practices of the labour organisations during the period between mid-1960s and mid-1970s. Bangladesh and Indian jute industries similarly suffered great financial loss for this unhealthy organisational climate. At present, the labour-management relations in jute industries have improved from confrontation to cordiality. Employee-workers participation in management of jute industry has now become a common phenomenon. Moreover, every jute goods producing country has launched effective training and human resource development programmes placing more emphasis on the development of human skill.
REFERENCES


