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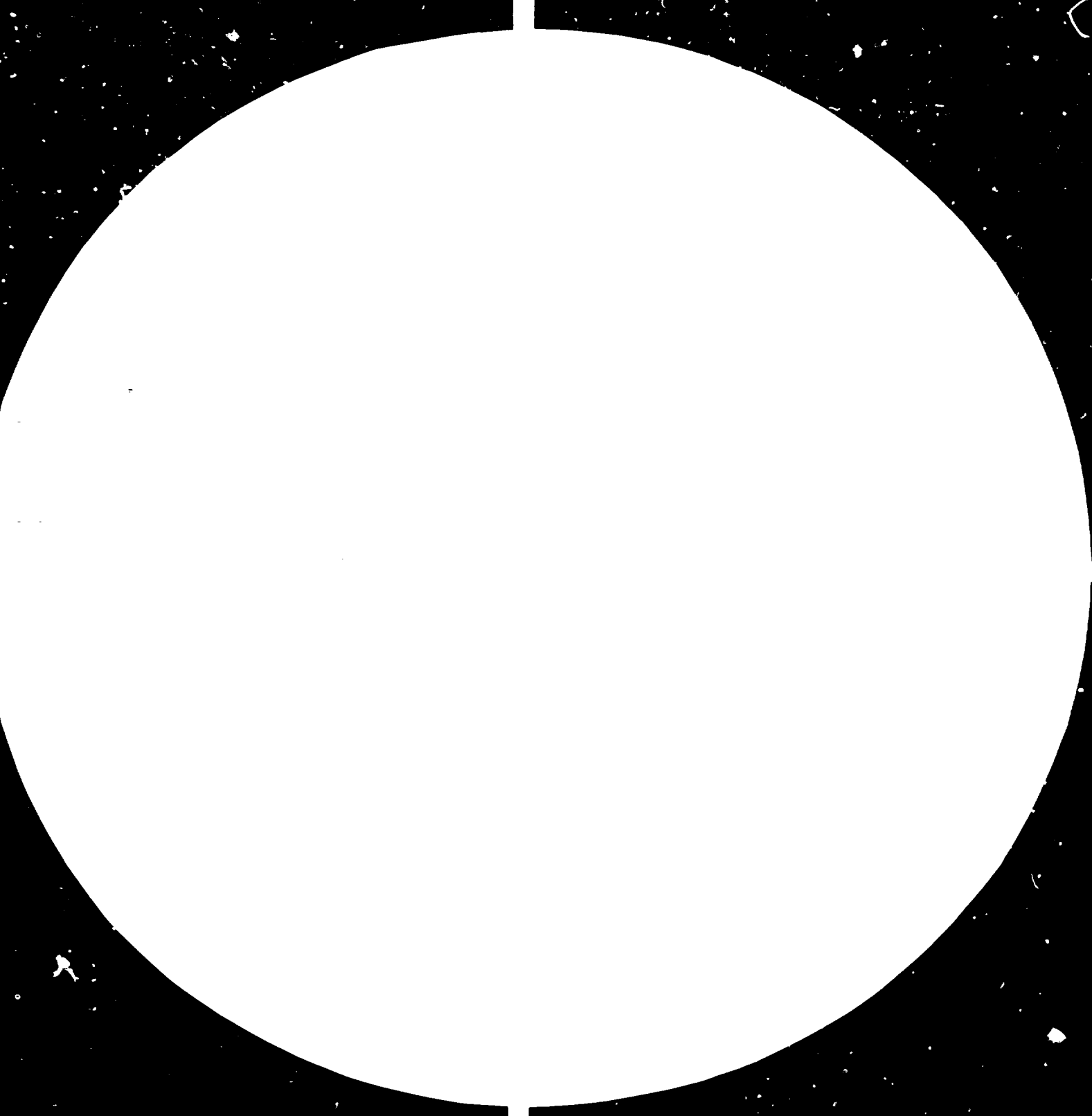
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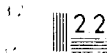
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Visual acuity is the ability to resolve detail. It is measured by the minimum angle of resolution (MAR) of the visual system. The MAR is the smallest angle between two points that can be distinguished as separate. The MAR is inversely proportional to the spatial frequency of the visual stimulus. The spatial frequency is the number of cycles per degree of visual angle. The MAR is expressed in cycles per degree. The MAR is the reciprocal of the spatial frequency. The MAR is the smallest angle between two points that can be distinguished as separate. The MAR is inversely proportional to the spatial frequency of the visual stimulus. The spatial frequency is the number of cycles per degree of visual angle. The MAR is expressed in cycles per degree. The MAR is the reciprocal of the spatial frequency.

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COST REDUCTION IN THE JUTE INDUSTRY.

(SI/RAS/79/801)

Report of a fact-finding mission to
India, Nepal, Bangladesh and Thailand

Prepared by J.S. Coventry, jute industry consultant,

and

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Explanatory notes

The monetary unit in India is the rupee (Rs). During the period covered by the report, the value of the rupee in relation to the United States dollar was \$US 1 = Rs 8.

References to "tons" are to metric tons.

The following abbreviations are used:

tons per annum t/a

tons per day t/d

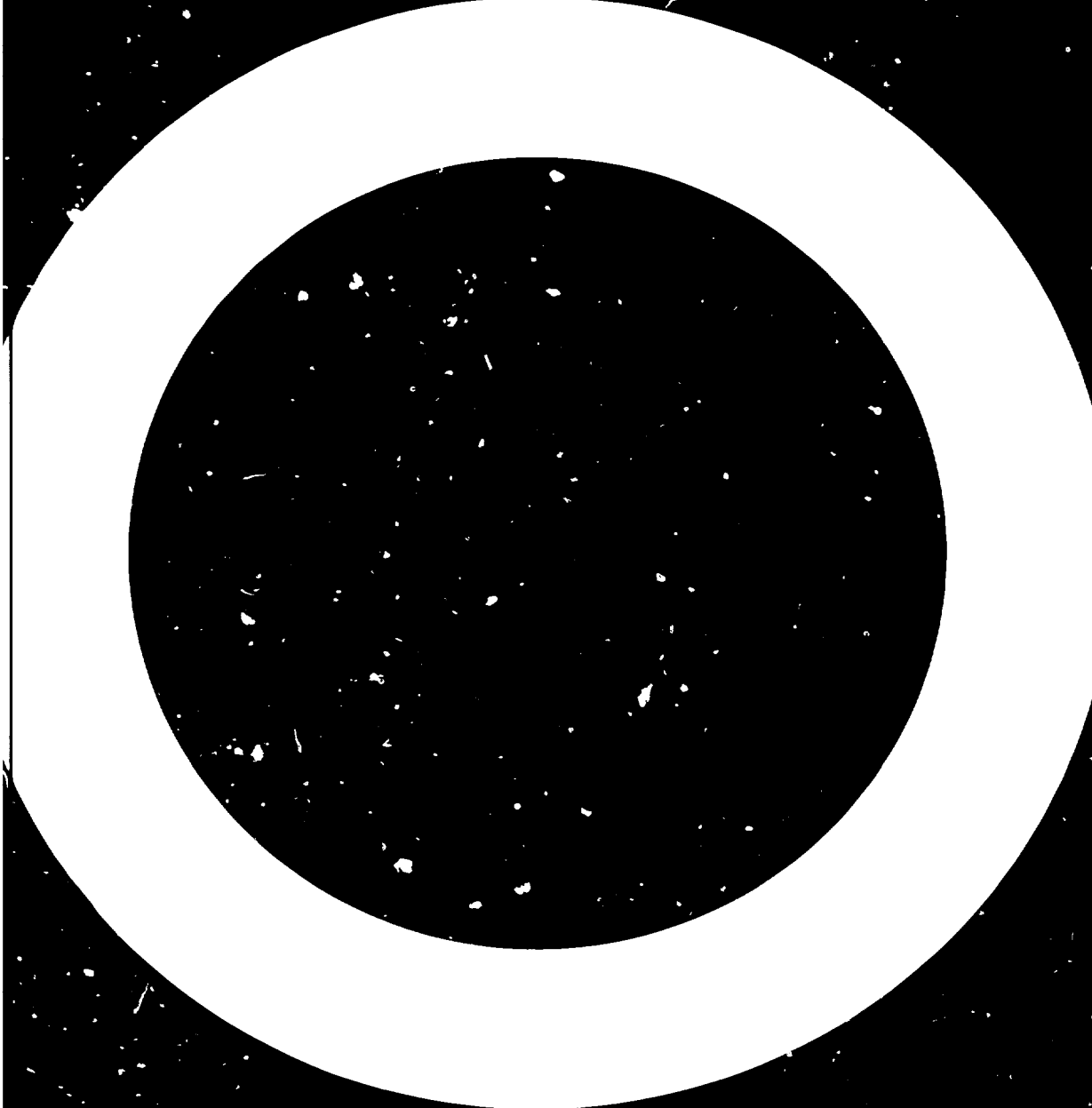
ABSTRACT

The Fifth Preparatory Meeting on Jute and Jute Products held under the UNCTAD Integrated Programme for Commodities in July 1978 "requested the UNCTAD Secretariat, with respect to cost reduction in industry, to invite the Executive Director of UNIDO to undertake the preparation of an immediate programme of priority projects, and to estimate the cost" (TD/B/IPC/JUTE/14, chapter II, paragraph 6(2)).

During the Sixth Preparatory Meeting on Jute and Jute Products, held in April 1979, UNIDO expressed reservations about the proposed study but upon the insistence of UNCTAD, agreed to launch a fact-finding mission to investigate, in a round of discussions with the authorities concerned, whether and what measures could be taken by the international community to reduce the cost of processing jute.

In December 1979 the Mission, composed of a UNIDO staff member and a jute industry consultant, visited India, Nepal, Bangladesh and Thailand, in that order, and had extensive discussions with the representatives of the jute industry and government and trade authorities in each country.

The Mission concluded that the measures required to reduce the cost of processing jute varied from one country to another and from one mill to another to the extent that it was not possible to design a meaningful programme of internationally applicable projects; the nature of the problem required it to be handled at the national level.



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INTRODUCTION

Within the framework of the UNCTAD Integrated Programme for Commodities, the jute producing and consuming countries are negotiating an international agreement on jute and jute products to cover:

Research and development

Market promotion

Cost reduction

A mechanism for a regular exchange of information and for consultations on competition between jute and synthetics

Market intelligence.

The international agreement should further provide for the establishment of an international jute council that would be responsible for the implementation of all the programmes and activities covered by the agreement.

The Fifth Preparatory Meeting on Jute and Jute Products held in July 1978 "requested the UNCTAD Secretariat, with respect to cost reduction in industry, to invite the Executive Director of UNIDO to undertake the preparation of an immediate programme of priority projects, and to estimate the cost" (TD/B/IPC/JUTE/14, chapter II, para. 6(2)).

Referring to that request, the Ministry of Commerce of India on 19 October 1978 asked UNIDO to conduct a survey of the jute industry on the basis of the following terms of reference:

"Review and summarize ongoing bilateral and multilateral programmes to reduce costs of production in the jute manufacturing sector in Bangladesh, India, Nepal and Thailand.

Identify the gaps in this field and formulate a five-year programme for cost reduction, including a cost/benefit analysis of the programme and the finance required for specific projects, in particular in the following areas:

- (i) Adoption of improved processing techniques through the introduction of new machinery and through the adaptation in mills;
- (ii) Introduction of more efficient cost saving machines in different stages of processing wherever such machines are available;
- (iii) Balancing of mills in terms of strengthening some sectors of the mills so as to match with other sectors;
- (iv) Study of adaptation of modified batch composition of raw jute for production of specific end-products in order to have the raw material cost reduced."

During the Sixth Preparatory Meeting on Jute and Jute Products in April 1979, and in its reply to the Government of India, UNIDO expressed certain reservations about the proposed study, summarized as follows:

(a) The solution to problems of improving productivity and lowering processing costs lay largely in the hands of the Government, local manufacturers' associations, and the manufacturers themselves;

(b) Many of the measures that might be taken did not involve significant financial outlay: those were better utilization of labour, improved balance of production, process control, maintenance, cost control, and utilization of raw materials;

(c) The problems, and measures to overcome them, were well known to the industry or could be readily analysed by experts available in the country;

(d) The assumption underlying the proposed terms of reference for the study, that the cost of processing could be reduced simply by replacing machinery, was, in its view, false.

Those reservations notwithstanding, UNIDO declared its preparedness to co-operate with the Government of India and other jute producing and processing countries in implementing a programme of activities to improve productivity and reduce processing costs in the jute industry provided that it was carefully elaborated and carried out with appropriate involvement of the Governments and jute manufacturers' associations concerned in addition to UNDP.

The reservations expressed by UNIDO were fully supported by the study made by the UNDP appointed Jute Fact-Finding Mission in 1970-1971^{1/} which concluded, after an extensive investigation that included briefing by FAO, UNCTAD/ITC, UNDP and UNIDO and field visits to all major producing and consuming countries, that:

"Jute and kenaf are no longer to be thought of as agricultural commodities, but as industrial fibres competing with other industrial fibres and requiring to use similar resources, similar techniques and to adopt the same commercial marketing attitudes as their competitors."

Based on three models, all man-made fibre producers, the International Institute for Cotton and the International Wool Secretariat, the Jute Fact-Finding Mission advocated the mobilization of joint resources for trade promotion, technical assistance and research and development. Modernization

^{1/} "Jute fact-finding mission 1970-1971, Report to Administrator", vol. 1 (UNDP, August 1971).

and rehabilitation of the jute processing industry in the producing countries was recognized as a necessary ingredient for success but one that belonged to domestic activities rather than to joint international action in market promotion and research and development.

In outlining the implementation plan for the recommended actions, the Jute Fact-Finding Mission maintained that:

"A substantial part of the recommendations made will have to be implemented within the producing countries themselves. These are in particular the measures relating to increasing yield per acre; to improving industrial efficiency (technical, financial and managerial); to management and staff training; to introducing more efficient marketing systems and reducing handling costs; to agricultural and technical research; and to domestic market development."

The report went on to say:

"A strengthened programme of domestic activity will be greatly facilitated by the consolidation within each of the producing countries of all the many organizations which are working for jute, but sometimes at present in competition."

The international action proposed by the Jute Fact-Finding Mission should revolve around the following issues:

Economic analysis and market research

Appropriate fields of agricultural research

The more sophisticated areas of fundamental technical research and the rapid development of new and improved products

Technical service providing close contacts with manufacturers wherever situated and also with consumers of the ultimate product

Promotion and publicity including the launching of new or improved products

World-wide market expansion covering developed, developing and centrally planned economies.

Recognizing that the main producing countries, despite the great stake they had in jute and the potential contribution they could offer individually towards achieving a successful outcome to any common effort to protect their interests, had "up till now been unable to co-operate in any meaningful manner", the Mission singled out the above areas for joint

international action because they were the least controversial of all the actions that would ultimately be required. Once work was in progress in those less controversial areas the scope of co-operation could be broadened.

Owing to the fact that the UNCTAD preparatory meetings on jute and jute products had been unable to agree either on a definition of "cost reduction" or on whether and what criteria should be applied when selecting projects for implementation by the international community, the task for the UNIDO Mission was not as specific as would have been desirable.

On the question of definition of "cost reduction", the Mission interpreted it to mean mainly the improvement of processing efficiency, and of the criteria proposed by the representatives of the United States of America and the European Economic Community^{2/}, the Mission regarded as indispensable the first one that all projects "should yield benefits to the jute economy as a whole and be relevant to all producing member countries".

The objective of the Mission was to investigate the situation through interviews with key representatives of the jute industry, trade and government departments concerned with jute with a view to decide on one of the following apparent alternatives or a combination of them:

- (a) To prepare a programme of joint projects for international financing or approach the problem at the national level;
- (b) To elaborate the terms of reference submitted by India in such a way that they could subsequently be used as a basis for the preparation of international projects;
- (c) To identify a limited number of priority projects that applied equally to all producing countries without favouring one over another and would be acceptable also to the consuming countries.

The Mission, consisting of a UNIDO staff member and a jute industry consultant, visited India, Nepal, Bangladesh and Thailand during the period from 3 to 20 December 1979, and then prepared this report. The countries are discussed in the order in which they were visited.

^{2/} Report of the Sixth Preparatory Meeting on Jute and Jute Products, Geneva, 23-28 April 1979 (TD/B/IPC/JUTE/20, annex A).

CONCLUSIONS

Throughout the Mission's extensive interviews in India, Nepal, Bangladesh and Thailand with representatives from the jute industry and with government and trade authorities, no one was able to identify one meaningful and feasible project on cost reduction in the jute industry within the sphere of UNIDO, for international financing, that would apply equally to all producing countries without favouring one country or one mill over another, and that would also be acceptable to the consuming countries.

Cost reduction should be tackled on a national basis as cost problems differ from country to country and from mill to mill and do not lend themselves to international action in the sense that a common project could be identified that would apply to, or would benefit, all countries alike.

The view was unanimous that the biggest reduction in costs could be made by reducing the cost of raw jute, the price for which represents approximately 50 per cent of the cost of converting the jute into yarn. Various ways to achieve this are:

(a) To increase the yield of fibre per acre of land under cultivation; to improve retting facilities and techniques and to establish scientific retting ponds to improve the quality of the fibre produced. (This is a research and development problem.);

(b) To use the least costly grades of fibre in the batch mix to meet the standard required by the end user of the product for each fabric construction produced in the mill. (This is a national problem as no two countries have the same grading standards, nor is grading of fibre standardized in individual countries.);

(c) To stabilize the production and price of the raw material. (This is mainly a political problem.).

Labour, which accounts for approximately 30 per cent of conversion costs, is also a main area in which costs could be reduced through rehabilitation; conversion of machines (including modernization where necessary, and the introduction of modern weaving machines); replacement of old and obsolete machines; and balancing, but only if these are combined with a reduction of the labour force.

Although the price of raw jute and labour are the two areas where the biggest reduction in costs could be made, the Government of India will not support any schemes that would reduce the price paid to the farmer for jute,

or reduce the labour force in mills. To remain competitive with other substitute commodities, such as synthetics, mills must introduce labour-saving modern machines and devices, and at the same time rationalize their labour force.

Other factors that affect conversion costs are:

- (a) Productivity of machines; effective maintenance of machinery; plentiful supply of good quality spares;
- (b) Satisfactory batch compositions to produce a good sliver for efficient spinning and a yarn of good strength for weaving;
- (c) Productivity of labour; incentive schemes for management, supervisors, production workers and other employees;
- (d) Continuous power supply to avoid load-shedding.

Cost reduction requires to be tackled on a national basis at mill level in the form of a study similar to that which was recently conducted in Bangladesh by a foreign organization, covering the following:

Pricing policies and marketing of raw jute and jute products

- (a) Pricing policy for raw jute at the farmgate;
- (b) Internal marketing structure of raw jute and associated marketing costs to achieve significant reductions in internal marketing costs of the raw material from farms to terminal sales points, including mills;
- (c) Pricing policies for the export of raw jute and jute goods aimed at maintaining stability of jute production and prices at competitive levels;

Investment requirements of the jute products industry

- (d) Assessment of the total investment requirements for the Bangladesh industry for rehabilitation, replacement of machinery (including modernization, where necessary) and balancing, together with the resultant cost savings;
- (e) Target levels of production in the light of projected demands for jute products (including non-traditional products);
- (f) Economic and financial internal rates of return, taking into consideration the closure of uneconomic mills and establishing the production, efficiency and financial targets for individual mills;

Labour and management

- (g) The state of labour and management skills in the industry, and training requirements;

(h) Review of pay structures at management level; introduction of appropriate incentive schemes covering management, supervisors, productive employees and other employees;

(i) The main areas for which expatriate technical co-operation is required;

Organization

(j) Changes required in the organization or structure of the industry.

The Mission concludes that it is not feasible to prepare a meaningful programme of joint projects for international financing, and that the problem of cost reduction in the jute industry of jute producing and processing countries, should be dealt with at a national level.

FINDINGS ON THE JUTE INDUSTRY, AND SUMMARIES OF
DISCUSSIONS ON COST REDUCTION IN THAT INDUSTRY

India

Background

From one mill in 1855, the jute industry around Calcutta rapidly expanded and by 1910 there were 59 mills with 30,685 looms. The tempo of expansion continued unabated till 1939-1940 when there were 108 mills with 68,000 looms. There was very little expansion during the years of the Second World War, nevertheless, by 1945 there were 111 mills in India with 68,542 looms. By 1963, the number of mills had been reduced to 92 due to amalgamation and closure of uneconomic units. Since then the number has been further reduced for the same reasons and there are now 70 mills with 44,594 looms. There is an overwhelming concentration of jute mills on the banks of the river Hooghly in West Bengal and only a few mills elsewhere in India. According to the 1976 statistics for the industry, the distribution of looms in India was:

<u>Area</u>	<u>Mills</u>	<u>Hessian</u>	<u>Sacking</u>	<u>Broad</u>	<u>Others</u>	<u>Total</u>
West Bengal	58	22,387	10,169	6,254	1,985	40,795
Andra	4	202	1,130	-	50	1,382
Bihar	3	171	845	-	-	1,014
Uttar Pradesh	3	276	646	79	32	1,033
Madhya Pradesh	1	35	185	-	-	220
Assam	<u>1</u>	<u>50</u>	<u>100</u>	<u>-</u>	<u>-</u>	<u>150</u>
Total	70	23,121	13,073	6,333	2,067	44,594
Approximate production (t/a)		300,000	536,000	110,000	78,000	1,024,000

Prior to the Second World War, the Indian jute industry had a virtual monopoly in the world, and there was no urgent need for the industry to consider technological developments or raise productivity. After the War, while the jute industry in Dundee and on the Continent of Europe was being equipped with modern automatic high-speed machines, India began to lose its advantages of cheap jute and labour: the loss of the jute-growing areas in East Bengal to Pakistan in 1947 and the increase in wage costs increased the cost of production. Accordingly, the question of modernization and rationalization of the jute industry assumed great importance.

From 1950, several foreign firms agreed to manufacture certain categories of jute machinery in India, including cards and sliver spinning frames, and the Government of India agreed to provide the necessary facilities to permit import of other machinery that was not available locally, which considerably increased the rate of modernization of mills. A planned programme of modernizing plants and rationalizing production techniques was adopted in the country's five-year plans. Modernization up to spinning was completed by March 1963 in approximately 80 per cent of the mills. Several technological changes were made to increase productivity, and the introduction of sliver spinning permitted a greater use of low quality jute. Higher productivity, labour-saving machines and reduced batch costs reduced the conversion costs in the processing operation. India was committed to modernizing the industry in a way that would cause the minimum displacement of labour by keeping it within the limits of natural wastage only, namely, through death, superannuation etc. Other forms of rationalization were adopted by the managements of mills by the concentration of production in the larger units and closure of uneconomic ones.

Much of the equipment, which has been used on a treble-shift basis since the last phase of modernization, needs to be replaced or rehabilitated, and looms, which in many cases have been operating since the establishment of mills, need to be replaced with modern machinery.

India, having been mechanically processing jute for more than 120 years, has the advantage over the other three countries in the study, Nepal, Bangladesh and Thailand, in having skilled operatives, technical knowhow in management and supervision, and a good training establishment, the Institute of Jute Technology, in Calcutta.

Today, most of the industry in India is in the private sector and controlled by approximately eight large concerns that have interests apart from the jute industry.

Under the market conditions prevailing at the beginning of December 1979, mills are assumed to be operating profitably based on the following estimated costs and selling prices:

Conversion costs (Rs per ton)

<u>Fabric</u>	<u>Batch</u>	<u>Labour</u>	<u>Others</u>	<u>Total</u>	<u>Selling price</u>	<u>Profit/ton</u>
Carpet backing	3,120	2,300	1,530	6,950	12,500	5,500
Hessian	2,650	1,820	1,230	5,700	10,954	5,254
Sacking	2,250	1,350	900	4,500	5,500	1,000

Regarding investment in capital equipment, the industry encounters many difficulties in securing loans from the Industrial Finance Corporation of India; the licensing policy of the Government for the import of machinery and the high rate of import duty is reported to be over 50 per cent of the landed value. The duty imposed by the Government applies not only to machinery but also to the import of components and spares to maintain machinery in a satisfactory operating condition. From April 1978 to March 1979, the import of jute mill machinery was banned even though new products with a high unit value and more sophisticated in construction could be produced using imported machinery. The only way in which jute mill machinery could be imported under the licensing policy was to obtain an import licence with 100 per cent export guarantee for the production from the imported machines. The importing company was required to give a bond agreeing to fulfil the export commitment and had also to be backed up by bank guarantees.

It is feared that with so many difficulties and restrictions imposed on managements, the finance generated by the jute industry will be channelled into other industries and a situation similar to that experienced by India after the Second World War will develop.

Discussions

Discussions were held in Delhi with the Joint Secretary, Ministry of Commerce, Government of India, who has been the spokesman for the jute producing countries at the preparatory meetings on jute and jute products held under the auspices of UNCTAD.

Reference was made to the request from India, submitted to UNIDO through UNCTAD, by the Ministry of Commerce, for a survey of the jute mills to investigate the possibilities for "cost reduction" and the reservations

that UNIDO had expressed, especially as no progress had been made on an agreement of the definition of "cost reduction" at the preparatory meetings. The meetings had also been unable to decide whether and when certain criteria should be applied in selecting projects for international implementation. It was the opinion of the Joint Secretary that one of the most important problems identified in the jute sector was how to compete with synthetics and that the solution lay in reducing the processing cost, from the entry of the raw material into the mill to the finished product. Hence that was one of the reasons for the introduction of a "cost reduction" programme as one of three key issues on which the jute agreement would focus. He stated that research and development projects had been identified in broad outline as had "market promotion" projects, and proposals for cost reduction were awaited from UNIDO, no matter whether they were controversial or not.

In Calcutta, at the meeting with the Jute Commissioner and the Joint Secretary, Ministry of Industry (Jute), the Mission was clearly informed that any cost reduction that would reduce the price that the growers receive for raw jute would not be acceptable nor would measures that would reduce the labour force. Discussions centred on the economic strength of the mills, the condition of the current machinery, modernization, replacement of parts, spares, balancing equipment, technical improvement to existing machines and finance relating thereto. The fact that Bangladesh had been able to get financial assistance for projects in the jute sector from various organizations, such as the World Bank and UNDP, was mentioned by the Government representatives. Other topics relating to cost reduction were the batch mix composition to lower the cost without affecting the quality of the end product (no project is possible in this sphere as grades have not been standardized in all jute-producing countries); improvement of management practices; maintenance of machinery etc. But all those measures were country and mill related and could not form the basis of an internationally implementable project on cost reduction.

Several meetings were arranged with representatives from the Indian jute industry. The Mission was surprised to learn that the request for a cost reduction study, as put together and submitted by the Ministry of Commerce of the Government of India to UNCTAD and UNIDO, had not been referred to, or based on adequate consultations with, representatives of the jute industry or any person with a thorough knowledge of that industry. Representatives

of the industry stated that the biggest area of cost was raw material, ranging from 48 to 55 per cent of the total manufacturing cost, and the price was escalating because of the Government's desire to give more money to the growers. If measures were taken to increase the yield per acre, it was felt that the growers would be able to get a better return from the area under cultivation and the farmer could afford to reduce the unit price of raw jute, assuming that the cost of cultivating the unit of land did not increase.

It was stated that in India there was no scope for cost reduction because reduction of the labour force was not acceptable to the Government. It was also stated that productivity could be improved or increased in two ways:

(a) Increased productivity by machines, and especially the spinning machines. Compared with a ring spinning frame in the cotton industry, where the speed of the spindles had been considerably increased, jute spinning frames had been operating at the same speed for the past 10 to 15 years, and accordingly an increase in productivity from those machines was not possible. Modern weaving machines were available for installation in mills and had a considerably higher rate of production, but the installation of such machines would not be a viable proposition without a considerable reduction in the labour force, which would not be acceptable to the Government;

(b) Increased productivity by labour. Wages in most areas did not bear any relation to productivity, and a real incentive to increase productivity was lacking. Forty per cent of the workers were time rated; 60 per cent were piece rated, of which 85 per cent were on fixed wages and the work of only 15 per cent related to productivity. Further, the employer found it impossible to take disciplinary action so far as the work of an employee was concerned.

Through continuous load shedding, an inadequate supply of power from the power-generating establishments, oil prices, and diesel oil not always being available to run the generating units of mills, conversion costs had increased during the last three years by as much as from 15 to 20 per cent, the power costs having increased sixfold.

It was stated that the areas in which the biggest contribution could be made towards reducing conversion costs were (a) raw material, which accounted for approximately 50 per cent; and (b) labour, which accounted for approximately 30 per cent. The remainder was for power, spares, overheads, depreciation etc. There was much scope for cost reduction in the agri-

cultural field through increased yield of fibre per acre, improved retting facilities and techniques to enhance the quality of the fibre produced and to upgrade it, use of the centre portion of the jute plant through research and development for the production of cellulose, paper etc.

The consensus of opinion of the jute industry community was that there was scope for international projects in the raw material production aspect but, although there was a lot of scope for identification of cost reduction projects at mill level on a national basis, it was very difficult to identify one in the industry that would lend itself to international action.

Nepal

Background

The jute industry in Nepal started in 1936 when the Biratnagar Jute Mill was established in Biratnagar, close to the Indo-Nepalese border. Ten years later, the Shree Raghupati Jute Mill was erected in the same neighbourhood. The mills were erected in Biratnagar because of its central location among the jute growing districts, and its proximity to rail facilities connecting Nepal with the port of Calcutta.

The equipment installed originally was mostly second-hand and obsolete. Some modern spinning and ancillary machinery was installed in 1954-1965 and between 1972 and 1974 in both mills. The Asian Development Bank's modernization and rehabilitation schemes (1972 and 1974), by operating the mills on a treble-shift basis, envisaged a production of:

Biratnagar

	<u>t/d</u>	<u>t/a</u>	<u>Number of looms</u>
Hessian	27.15	8145	264
Sacking	<u>19.71</u>	<u>5914</u>	<u>80</u>
Total	46.86	14059	344

Raghupati

Hessian	12.75	3825	124
Sacking	<u>12.32</u>	<u>3696</u>	<u>50</u>
Total	25.07	7521	174

Biratnagar Mill. Recently a survey of all activities has been carried out by a team of consultants in an endeavour to improve all aspects of mill management and operations within the mill. The directors are nominated by the shareholders which are divided into three groups, namely, the Government, R.K. Chamaria - Managing Agents, and members of the public. Each of these groups has a quota of directors in the ratio of 1:3:4.

Raghupati Mill. It is understood that the Government of Nepal is the biggest shareholder in this mill. The supply of power is a problem in Nepal. The Asian Development Bank approved a bank loan of \$US 18.6 million to finance part of the cost of the third power project on 21 December 1979. Part of this loan will be for the rehabilitation of the distribution system around Biratnagar by construction of substations and distribution lines and rehabilitation of existing substations.

Discussions

Opinion on cost reduction in the Nepalese jute industry was similar to that of the representatives in India, namely, that there was a very limited scope to raise productivity at the factory level to reduce costs as to increase productivity of labour, excess labour had to be retrenched, which politically was not feasible. Measures could be taken at the farm level to reduce the cost of the raw material by raising the yield per unit of land through improved seeds, fertilisers etc. and also by improvement in retting techniques, to upgrade the quality of the fibre produced and the grading of jute. At mill level, the problems in Nepal were domestic, related to interruptions in the power supply, output of machinery, labour productivity and other local problems.

An opinion expressed in Nepal was that research and development and cost reduction techniques should go side by side. The results from research and development projects should be applied to the industry and they would be expected to result in a cost reduction in the industry.

Bangladesh

Background

The jute industry started in Bangladesh in 1951 and by December 1977 there were 75 mills operating in Bangladesh (69 spinning and weaving and 6 spinning only). The mills are distributed among the five zones by the Bangladesh Jute Mills Corporation (BJMC), a Government body under the jurisdiction of the Ministry of Jute, as follows:

<u>Zone</u>	<u>Mills</u>
Adamjee	2
Dacca 1	19
Dacca 2	20
Chittagong	16
Khulna	18

Productive looms installed are:

<u>Hessian</u>	<u>Sacking</u>	<u>Broad</u>	<u>Others</u>	<u>Total</u>
13,486	7,592	2,141	157	23,376

The approximate production (in tons per year) is:

166,500	227,000	70,500	26,000 ^{a/}	490,000
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^{a/}including yarn and twine etc.

Some of the machinery which was initially installed had some manufacturing defects. Consideration has been given to replacement, rehabilitation and conversion of the machines, but due to various problems, little has been done. In the planning of the various units for the production of hessian and sacking minimum production targets (8 lb per loom/hour for hessian and 23 lb per loom/hour for sacking) were emphasized and sufficient machinery was procured and installed.

Regarding fibre utilization, India, using lower grades of fibre, averages approximately 10 lb per loom/hour for hessian and 23 lb per loom/hour for sacking, compared with the current Bangladesh averages of approximately 7.5 lb per loom/hour for hessian and 20 lb per loom/hour for sacking.

In many instances, low weaving production is due to an insufficient supply of yarn, mainly because of the poor condition of spinning machinery. Also because of the condition of the machinery, any increased use of low-grade fibre will add to production problems.

The jute industry in Bangladesh has been the subject of several studies carried out by various foreign organizations (a) to assess the total investment requirements for the industry, including requirements for rehabilitation, replacement and modernization where necessary to achieve the maximum feasible level of efficiency and output; and (b) to estimate the resulting net industry savings in operating costs on the assumption that increased output will generate cost savings elsewhere in the industry. Other aspects of cost reduction have been studied by various organizations, and several projects in various sectors of jute production and processing are being implemented.

Discussions

Conversion costs are similar to those in India: raw jute represents approximately 50 per cent of the total; labour from 25 to 30 per cent, and the balance for power, spares, depreciation, overheads etc.

The problems mentioned by representatives of the industry in Dacca were as follows:

- (a) Reduction of the cost of raw jute. Chemical treatment at the retting stage was suggested to enhance the quality and so reduce the amount of low-grade fibre being produced;
- (b) Productivity of labour, which was poor compared to that in India;
- (c) Machinery and equipment. Age and mechanical condition did not permit the efficient processing of low-grade fibres;
- (d) Load shedding due to power shortage. That represented the biggest single burden that the Bangladesh industry has had to bear;
- (e) Management and supervision. Expertise was poor compared to that in India and training facilities, such as the Institute of Jute Technology, were non-existent in Bangladesh;
- (f) Spares. At least 30 per cent of the required spares and replacement parts had to be imported whereas India produced most of its requirements locally.

It is the opinion of the Mission that apart from the first item, which is a research and development matter and common to all jute producing countries, thus qualifying for international action, the other items are domestic issues. It was not possible to identify one project in the field of cost reduction in the industry that would qualify for international action.

Thailand

Background

Although Thailand is classified as a jute producing country, the fibre, kenaf (Hibiscus cannabinus), produced and processed in Thailand, is, in comparison to jute that is mainly produced and processed in the other three countries of the study, somewhat coarser and less supple but has more tenacity and lustre. Kenaf can be spun on jute machinery without much modification to machines, and can be used for most of the purposes for which jute is used. However, it cannot be spun down to the fine counts required for some special purposes for which jute is used.

After partition of Bengal in 1947, India showed an interest in kenaf fibre from Thailand and production of the fibre was increased considerably.

The first mill in Thailand was established in 1952 and there are now 12 mills with a total of approximately 2,857 looms (over 1,000 of which are modern weaving machines); the mills produce annually approximately 140,000 tons of woven fabrics and approximately 38,000 tons of twine etc. Three of the mills are managed and/or controlled by the Government (one by the Ministry of Industry and two by the Ministry of Finance); the others are privately owned.

Most of the managerial and supervisory staff in the mills have received no training in jute technology. Their knowledge of the industry is limited to what they have learned while acting as supervisors. The Government of Thailand is studying the possibility of establishing a jute technology centre for training mill personnel and for research and product development. Meanwhile a few of the mills in the private sector are pursuing product development and diversification for the benefit of the individual company.

The condition of the machinery in most of the mills compares favourably with that in the mills of the other three countries.

Discussions

As in the other countries that were visited, discussions centred mainly on raw material, which is the biggest element in conversion costs in the industry in Thailand. Stability of the production of raw material was considered to be a most important factor in stabilizing the price of raw jute and kenaf. It was maintained that when a large crop was produced, the price of the raw material declined and resulted in the farmer reducing the area for jute cultivation the following year, which caused the unit price to soar.

Regarding labour costs, there was scope for a reduction of costs in the area by the introduction of new machinery, especially weaving machines; one employee could operate up to 10 modern looms, against only one ordinary flat-bed loom. The Mission agreed but pointed out that any reduction in the labour force was not acceptable in some of the other jute processing countries, especially India.

Thus, without rationalization of labour through modernization in mills and reduction in the unit price of the raw material, areas which accounted for approximately 80 per cent of the conversion costs in the industry, cost reduction projects for international action were difficult to identify.

It is the opinion of the Mission that much is required to be done in labour and management training in Thailand, but, again, this is a national problem.



