OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

FAIR USE POLICY

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

RESTRICTED

18073

DP/ID/SER.B/667
23 January 1990
Original: ENGLISH

REVIEW OF THE JUTE INDUSTRY

SI/NEP/89/801

NEPAL

Terminal report*

Prepared for the Government of Nepal

by the United Nations Industrial Development Organization,

acting as executing agency for the United Nations Development Programme

Based on the work of
J. Balfour, Jute Technologist
C. Pearce, Financial Analyst

Backstopping officer: J.P. Moll, Agro-based Industries Branch

United Nations Industrial Development Organization

Vienna

* This document has not been edited.

V.90-80598

ACKNOWLEDGEMENTS

The Consulting team wishes to acknowledge and thank all individuals and institutions listed who contributed towards the finalisation of this report.

Dr. B.N. Chalise, Joint Sect., Ministry of Industry & Planning.
G.L. Rajbhandari, Additional Secretary, Ministry of Industries.
M. Satyapal, Chief Technical Adviser, UNIDO.
R.D. Sharma, Chairman, Shree Raghupati Jute Mills Ltd.
B.M. Singh Pradan, General Manager, Nepal Bank, Kathmandu.
G. Bajracharya, Eastern General Manager, Nepal Bank, Biratnagar.
Bidur Acharya, Manager, Rastriya Banijya Bank, Biratnagar.
L.L. Shreshta, Chairman, JDTC.
T.N. Adhikari, Jt Director, JDTC.
B. Koirala, Jt Director & Co-ordinator, Jute Information Service.
R.N. Dhungel, Chairman & General Manager, ESC Ltd.
K.P. Sharma, General Manager, Shree Raghupati Jute Mills.
D.B. Pandey, Assistant General Manager, Shree Raghupati Jute Mills.
S.B. Kapung, Financial Manager, Shree Raghupati Jute Mills.
G.P. Sapkota, Admin. Manager, Shree Raghupati Jute Mills.
P. Nepal, Mill Manager, Shree Raghupati Jute Mills.
R.P. Upadhyay, Assist. Director, JDTC, Biratnagar.
N.C. Jha, Assist. Director, JDTC, Biratnagar.
P.P. Basnayatm, Jute Grader, JDTC, Biratnagar.
S.R.K. Upadhyay, Chief Planning Division, JDTC, Biratnagar.
G.P. Risal, Director, Nepal Jute Industries, Biratnagar.
S. Rizal, Director, Nepal Jute Industries, Biratnagar.
B.P. Sapkota, Chief Accountant, Biratnagar Jute Mills.
G.B. Singh, Mill Manager, Biratnagar Jute Mills.
J.K. Rayarra, Marketing Chief, Biratnagar Jute Mills.
R.L. Upadhyay, Jute Technologist & Engineer, Biratnagar Jute Mills.
Bhaguan Dass, Director, Guheshwary Twine Plant.
Dr. Tennyson, Chief Project Officer, Watershed Management Project.
Ray Brown, Chief Technical Adviser, UNCTAD/GATT/ITC, Geneva.
T.R. Upadhyay, Chartered Accountant, T.R. Upadhyay & Co.

GLOSSARY OF TECHNICAL TERMS

KUTCHA BALE:	A loosely packed bale of Jute for local use.
MORAH:	A large bundle of Jute reeds.
CUTTINGS:	The root ends of the Jute plant.
BATCHING EMULSION:	An oil in water mixture applied to Raw Jute.
MOISTURE REGAIN:	The weight of moisture in the material expressed as a percentage of its oven dry weight.
RELATIVE HUMIDITY:	The ratio of the absolute humidity of a given volume of air to that of an equal volume of saturated air at the same temperature and pressure.
COUNT OF YARN:	Expressed in lbs per Spyndle, i.e. the weight of 14400 yds of yarn.
TWIST:	The number of turns per unit length, i.e. per inch.
TWINE	Two or more single threads twisted together to form a plied yarn.
QUALITY RATIO:	The single thread breaking load of a yarn in lbs force expressed as a percentage of the Yarn Count.
BLENDED YARN:	A yarn spun from fibres of different types, i.e. Jute and Acrylic.
WARP:	The threads of a fabric running parallel to the selvedge.
WEFT:	The threads of a fabric running from selvedge to selvedge.
HESSIAN:	A plain woven cloth where warp and weft threads are approximately the same count.
SACKING:	A coarse woven cloth where either Warp or Weft is a heavy count.

TWILL:	A weave producing diagonal lines on the face of a cloth.
PICK OR SHOT:	A weft thread or threads inserted during one rev. of the loom crankshaft.
GEOTEXTILE:	A textile fabric used for erosion control also to reinforce and stabilise roads, walls and embankments.
PORTER:	The term used to indicate the density of warp threads in a fabric.

INDEX

		PAGE NOS.
SECTION I		
SUMMARY & RECOMMENDATIONS		
1.1	Market Summary	7 - 10
1.2	Technical Summary	11 - 13
1.3	Financial Summary	14 - 17
1.4	Management Summary	18 - 19
1.5	Recommendations	20 - 22
SECTION II		
GENERAL INFORMATION		
2.1	Introduction and Background	23 - 24
2.2	Company Details	25 - 26
2.3	Corporate Details	27
2.4	Loans and Other Agreements	28 - 29
SECTION III		
SALES & MARKETING		
3.1	Main Products Distribution and Uses	30 - 31
3.2	Market Demand and Growth	32 - 33
3.3	Product and Market Development	34 - 35
3.4	Product Pricing	36 - 42
3.5	Quality of Products	47
SECTION IV		
TECHNICAL EVALUATION		
4.1	Present State of Plant and Description of Process	48 - 52
4.2	Technology Evaluation. Balancing and New Processes Recommended	54 - 57
4.3	Materials	58 - 60
4.4	Production Bottlenecks	61 - 62
4.5	Maintenance	63 - 64
4.6	Introduction of Quality Assurance	65 - 66
SECTION V		
MANAGEMENT AND PERSONNEL		
5.1	Top Management	67 - 68
5.2	Alternative Management Approach	69 - 71
5.3	Staff and Labour Requirements	74 - 75
5.4	Training and Development	76
5.5	Management Information	78 - 79

SECTION VI
FINANCIAL EVALUATION

6.1	Sales Analysis	80 - 88
6.2	Profit and Loss Account	93 - 95
6.3	Balance Sheet Analysis	98 - 101
6.4	Working Capital Needs	105 - 107
6.5	Capital Expenditure	108 - 110
6.6	Corporate Restructuring	111 - 114
6.7	Social and Economic Impact	115 - 117
6.8	Ratio Analysis	118
6.9	Potential for Privatisation	121 - 122

APPENDICES

1.	Potential Production at Raghupati Jute Mills	125 - 134
2.	Potential Production at Biratnagar Jute Mills	135 - 142
3.	Information Questionnaire	143 - 154
4.	Information Statements	155 - 162
5.	Estimated Expenditure on Rehabilitation and Balancing	163 - 165
6.	Calculation showing Cost per ton for Hessian	166

SCHEDULE OF CHARTS AND EXHIBITS

			PAGE NOS.
EXHIBIT	1.	Production and Consumption of Jute Products	43 - 44
"	2.	Sales and Prices of Jute Products	45 - 46
CHART A.		Process Flow Chart	53
EXHIBIT	3.	Organisation Structure for Case A, Separate Mills	72
"	4.	Organisation Structure for Case B, Rationalised	73
"	5.	Preliminary Training Programme for 1990-91	77
"	6.	Hessian Sales Analysis	89
"	7.	Sacking Sales Analysis	90
"	8.	Twine Sales Analysis	91
"	9.	Sales Summary	92
"	10.	Raghupati Profit and Loss Account	96
"	11.	Biratnagar Profit and Loss Account	97
"	12.	Raghupati Assets	102
"	13.	Raghupati Liabilities	103
"	14.	Biratnagar Assets	104
"	15.	Biratnagar Liabilities	105
"	16.	Raghupati Ratio Analysis	119
"	17.	Biratnagar Ratio Analysis	120
"	18.	Raghupati Relative Distribution of Benefits	123
"	19.	Biratnagar Relative Distribution of Benefits	124

SECTION I

SUMMARY AND RECOMMENDATIONS

1.1 MARKET SUMMARY

1.1.1 The basis of Nepal's economy is agriculture, which accounts for around 60% of the country's gross domestic product. The importance of the local Jute Industry as a supplier of packaging for food and cement cannot be underestimated. Furthermore, as crop yields continue to increase with the introduction of modern methods of cultivation, so the demand for Jute Goods will rise. Jute hessian, bags and twine are products based on domestic agricultural inputs with relatively little imported inputs. They are strongly resource based and the jute agricultural sector requires strong Mills to provide a stable outlet for the crop.

1.1.2 During the past decade the market for jute bags has been adversely affected by the penetration of synthetics, in particular polypropylene. This has not only reduced the demand for jute products but has also adversely affected prices. In general, prices of jute products in Nepal are only now recovering to the levels that prevailed five years ago. However, the growing environmental concern internationally may reverse the trends and recreate a growth in demand for natural fibres. Such a reversal is likely to be promoted by the psychology of environmental sensitivity in general as much as more tangible factors such as the non-bio-degradability of synthetic materials or their potential health hazards. Such considerations lead to a more optimistic view about the potential for Nepal increasing its exports to countries other than India and where prices have often been higher than in India.

1.1.3 As an export orientated industry, relying to only a small extent on imported inputs, it can make a large direct foreign exchange contribution by its exports and by the savings in materials that would otherwise have to be imported. A calculation shows that the two mills have the combined potential to generate a net benefit of more than R145 million per annum by 1991/92 and much more than this if the full potential of the mills is utilised and aggressive export marketing is undertaken. At present Nepal has less than 1% of the world market for jute products so the potential for improvement during the nineties should be considerable. With this in view, the forecast made in the Financial Section of this study include expenditures of R19 million per annum for market development, trade fairs, promotion and commissions.

1.1.4 The two jute mills have been using local traders both for purchasing of jute and for selling jute products. The traders exert an unfavourable impact on jute prices and the mills end up paying 20% more than they would without the traders. Official statistics show that prices obtained from India, presumably through the traders have been much lower than other export markets, so it is probable that some form of transfer pricing has been taking place. A much more detailed evaluation would be needed to verify this but there is potentially a situation which is not in the interests of the mills. It does seem desirable, therefore, that the mills take control over the jute purchase by acquiring and storing their requirements for the year, during the three month harvest period. Equally, the mills should take control of the selling side both on the domestic and export markets. In essence this means relying on local traders and agents to the minimum possible.

1.1.5 During the past five years, the best performance of the two mills in sales volume terms has been as follows:-

	RJM	BJM	TOTAL
Hessian	2700	2900	5600
Sacks	3000	6800	9800
Twine	300	600	900
Total	6000	10300	16300

1.1.6 This compares with the latest figures for 1988/89 as follows:-

	RJM	BJM	TOTAL
Hessian	1400	2300	3700
Sacks	2800	6000	8800
Twine	200	300	500
Total	4400	8600	13000

1.1.7 With the re-equipping and rehabilitation programmes proposed the production potential will be as follows:-

	RJM	BJM	TOTAL
Hessian	3000	4100	7100
Sacks	8600	10300	18900
Twine	300	600	900
Total	11900	15000	26900

1.1.8 The sales assumed for 1991/92 for the financial forecasts on a cautious basis, do not take into account the full benefits that are potentially obtainable. The estimates are as follows:-

	RJM	BJM	TOTAL
Hessian	2700	2700	5400
Sacks	3000	6800	9800
Twine	300	600	900
Total	6000	10100	16100

1.1.9 The figures shown in the preceding paragraph demonstrate the potential for the mills to increase their sales if export markets can be developed. For 1991/92 the domestic demand based on an historical growth rate of 8% would be about 10,200 but this can easily be increased to 12,200 with aggressive marketing and the development of new products. In this respect such products as blended yarns and soles for roped soled shoes will make a small contribution. However, the development of Geojute for geo-textile applications (to save soil and arrest land erosion) promises to offer the greatest potential.

1.1.10 In 1987/88 the two companies exported 15,900 tons of jute products (albeit at low prices) mainly to India. The Indian market closed in 1989 and while there is a strong possibility of it re-opening, Nepal would be prudent to develop wider export markets and reduce its reliance on the one nearby market. While the potential is enormous, the mills have to improve product quality and consistency (here decorticators are needed to improve jute quality) and need to employ an international market expert or find a joint venture partner that can provide the international market expertise. Much more emphasis must be placed on building up a good marketing and procurement management team. For 1991/92 a cautious assumption has been made for the financial calculations that 80% of the hessian output will be exported and no sacking or twine will be exported.

1.1.11 Market prices have been very variable over the past five years. In the case of hessian, mill prices have been increasing at 16% to 18% in the past two years but have only just recovered to the 1984/85 level. In the case of sacks, there has recently been a 26% increase which has taken current prices just a little above the 1984/85 level. By contrast, twine prices which have just increased by 19% to 24% in the past two years, are still 14% lower than the 1984/85 level.

1.1.12 Price assumptions made for the 1991/92 financial forecasts assume a 17% rate of inflation for hessian and 31% for sacks. For exports to countries other than India, a 50% increase in prices is assumed, but to assist in market penetration discount of 30% is assumed. A comparison with 1984/85 prices is as follows:-

R. per ton	1984/85	1991/92	Increase %
Hessian	18,100	24,300	4.1/2% p.a.
Sacking	14,600	23,200	6.1/2% p.a.
Twine	15,100	23,100	6.1/2% p.a.

1.1.13 The volume and price data leads to the following revenue data:

	1991/92	Part Max
Hessian	R 134.4 Million	R 79.5 Million
Sacking	R 227.4 Million	R 120.8 Million
Twine	R 20.5 Million	R 11.5 Million
Total	R 382.3	R 191.8

1.2 TECHNICAL SUMMARY

1.2.1 Because of the present closure of Biratnagar Jute Mill and the two Twine Mills it has not been possible to carry out an in-depth and conclusive Technical study on these units. However, in the case of Shree Raghupati Jute Mill a comprehensive study from the Technical operation of the Plant and equipment was carried out. The technology and process machinery in both Raghupati and Biratnagar are similar therefore comments made are relevant to both Mills. The Twine Mills were not inspected therefore comments on these cannot be made.

1.2.2 Batching Department: Both Mills have a modern type Emulsion Plant and apart from required improved control of application at Raghupati the units are suitable to cater for any modernisation programme.

1.2.3 Softeners: In both Mills these machines are in poor mechanical condition with Rollers badly worn and little or no spring pressure on these, resulting in poor softening of the Jute. No change in present day technology for this process.

1.2.4 Breaker Cards: In both Mills the Breaker Cards are old and require replacement or at least thorough overhaul. Although with present day technology, the improved carding techniques give greater benefits in terms of Carding efficiency resulting in the use of lower and cheaper Batch costs.

1.2.5 Finisher Cards: Because of the importance of the 1st Carding in the processing of Jute any modernisation of the Carding sections should be limited to the Breaker Cards and with the Finishers being renovated the Carding should be adequate for any changes in Spinning technology that may take place in the future. In both Breaker and Finisher Card lines the Roll Formers require major overhaul.

1.2.6 Drawing Frames (Light & Heavy Yarns): In both Mills these require major overhaul or eventual replacement. In the case of Raghupati the 2nd and Finisher Drawings are a bottleneck and it is recommended these be overhauled as soon as possible.

1.2.7 Spinning: This is the department where the greatest changes in technology have been made. At present Slip Draft Spinning is installed and while this is not totally outdated many Mills have replaced this by installing Apron Draft Spinning manufactured by James Mackie & Sons or Centrifugal Pot Spinning manufactured by Gardella ISI, Genoa, Italy. The advantages claimed with these modern types of spinning is greater yarn regularity with lower batch costs and reduced labour requirements. If the new spinning process is to be adopted this should be considered on a long term basis with an interim step being rehabilitation of existing frames unless Foreign Government Grants are made available to ease the burden of high Foreign Exchange expenditure on the Mills.

1.2.8 Winding (Warp): No great change has been made in present day technology with regard to Warp Winding. However in the case of Raghupati the winding frames are in very poor condition and it is recommended that these are extensively overhauled or replaced.

1.2.9 Winding (Weft): With the present type of looms in use (shuttle) the winding of Cops is necessary. The quality being produced at Raghupati due to the poor mechanical state of the Cop machines leaves room for considerable improvement. Depending on the eventual modernisation policy of the looms then a decision will be necessary to determine whether the Cop machines should be scrapped or overhauled according to Cop requirements.

1.2.10 Dry Beaming: In the case of Raghupati the quality of Sacking Beams being produced is poor. If however, the Gardella scheme for installation of new Prebeaming and Direct Beaming goes ahead then this will do much to improve Beam quality in Sacking.

1.2.11 Dressing Machines: With the present system of creel fed dressing machines for Hessian the ultimate quality of Loom beams being produced is poor. It is therefore strongly recommended that an additional operation of Prebeaming of all Hessian Warps be introduced to drastically improve the quality of Loom Beams. This is a present day trend in technology. It should be noted that due to shortage of fuel, Raghupati is at present running the Dressing machines without steam. Although a weak starch solution is being applied, this is a very dangerous practise and could result in mildew being formed on the beams giving badly damaged Hessian Cloth.

1.2.12 Looms: Present day weaving technology has seen the gradual replacement of traditional Shuttle Looms by high speed Rapier Looms. In the case of Sacking Fabrics a new type of cloth is produced known as Reverse Weave where the Heavy yarn becomes the Warp and the Light yarn is inserted as a double weft to give a fabric basically with the same weight and characteristics as the traditional fabrics. If the Italian Government Grant is given to Raghupati then the new type Gardella Tegard 1001 Rapier looms will be installed thus giving the Mill an introduction to modern weaving techniques.

1.2.13 Finishing of Fabrics: Technology in this department has made little or no change since Raghupati and Biratnagar first installed their machines therefore apart from the following recommended action no change is required in the process.

1.2.14 Damping Machine: Requires overhaul but machine is basically sound.

1.2.15 Calenders: Both machines require re-dressing of paper bowls. This can normally be achieved on site by fitting a turning attachment to themachine and refacing the bowls in situ.

1.2.16 Cutting Machines: In reasonably good condition. No change in present day technology.

1.2.17 Overhead Sewing Machines: These are requiring thorough overhaul but no change in present day technology.

1.2.18 Hemming Machines: Require overhaul but no change in present day technology.

1.2.19 Heracle machines: Require overhaul no change in present day technology.

1.2.20 John Shaw Baling Press: This is an ideal Export Baling Press with 1130 Ton Capacity. Unfortunately the press is only operating at approximately 50% pressing capability due to a cracked foundation. Recommend foundation be repaired and new pump unit fitted. The above comments relate to the Shree Raghupati machinery but it is believed that many of the points raised would also be applicable to Biratnagar Jute Mills which unfortunately was not operational during visits to that Mill.

1.3 FINANCIAL SUMMARY

1.3.1 The equity capital issued and paid up for the two companies is as follows:-

(a) Biratnagar Jute Mills - R 10.6 Million
of which Government has 12.5%

(b) Raghupati Jute Mills - R 7.1 Million
of which Government has 67%

1.3.2 The present financial situation of the two Mills is currently extremely poor with accumulated losses far in excess of the paid up capital and reserves. The position at the end of financial year 1988/89 was as follows:-

(a) Biratnagar Jute Mills - R 101.6 Million losses of which the 1988/89 loss was R 3.9 Million

(b) Raghupati Jute Mills - R150.0 Million losses of which the 1988/89 loss was R 22.0 Million

(c) The estimated 1989/90 combined net worth of the two companies is minus R 251 Million.

1.3.3 The fragile financial state of the two companies is currently being maintained by two local banks, the ADB and other unspecified creditors. The local banks, by levying unrealistically high rates of interest, applying penalties for non-payment and exerting little or no financial discipline over the companies operations have contributed to the poor state of the companies. The companies liabilities as of 1988/89 can be summarised as follows:-

	BJM	RJM	TOTAL
Bills/Accounts Payable	69.6	20.3	89.9
Overdraft	29.8		29.8
Short term loans	28.5	85.3	113.8
Long term loans	14.8	20.9	35.7
Other liabilities	26.9	97.9	124.8
Totals	169.6	224.4	394.0

1.3.4 An analysis of the financial ratios of the two companies demonstrated that for the Raghupati Mill most of the funding ratios have been very poor. For example the debt to issued equity ratio has been very high at 15:1 and the company has been generating inadequate profits and cash flow to cover its interest liabilities and loan repayment commitments. Asset utilisation has been very poor, as measured by the ratio of sales to capital employed and control over current assets has been minimal as shown by very high debtor and stock levels. By contrast the Biratnagar Mill has generally maintained better ratios although there is room for improvement. Forecasts for 1991/92 are, amongst other things, based on the assumption that both mills adopt sound financial planning, budgeting, costing and control systems and maintain stocks and debtors at realistically low levels, achieve higher asset utilisation rates and establish a sounder capital structure.

1.3.5 The first priority is for the companies to adopt policies that will lead to profitable operation. This study demonstrates that one fundamental issue is that of stabilising and effectively reducing the jute raw material input price, but by-passing the traders and purchasing direct from the growers. The extra working capital needs for this operation can, to a large extent, be generated by the tight control of debtors and finished stocks. A second issue is that of product and market development. The companies need a much more aggressive marketing operation to expand the domestic demand (new products, substitution for imports and new demand by organisations such as the new cement plants), in order to generate a much higher utilisation of assets and produce a higher output. In addition, domestic selling prices of jute products need to be allowed to rise for the next two or three years (albeit at rates of increase no greater than in recent years) to generate higher revenues. Finally, costs need to be held down and, in particular, the impossibly high level of interest liabilities must be reduced to a manageable level.

1.3.6 The actions summarised above and described in detail in this Study, using cautious assumptions relating to sales and capacity utilisation, will enable the companies to become profitable by 1991/92 The projections show that the two companies can generate over R 60 million profits before tax as separate entities and possibly as much as R 70 million if some rationalisation takes place. The calculations show that, using an interest cover ratio (profit before interest divided by interest) of 3:1, the two businesses could afford to pay R 30 million annual interest by financial year 1991/92.

1.3.7 Capital expenditure requirements in the short term are R 79.1 million for Raghupati (replacing burnt out plant) and R12.0 million for Biratnagar (for ongoing replacement) and would exceed R 100 million additional for rehabilitation if the funds can be mobilised. A full feasibility study would be needed before commitments were made for the latter. R 65 million of the Raghupati programme is expected to be obtained through an Italian Government grant. A maximum of R 80 million (for both mills combined) would be required for jute purchasing with an annual average requirement of R 40 million. Tight control over finished stocks (to 30 days) would reduce the need to R 25 million while strict control over receivables would reduce the capital need to R 37 million. By 1991/92 the combined net working capital will be approximately R 100 million if the appropriate control actions are taken. (This is distributed between the two companies in the ratio of 60% BJM and 40% RJM approximately).

1.3.8 Besides injecting the R 65 million (Italian grant) into the Raghupati Mills as equity, the Government must also put in a further R 25 million new equity and R 40 million into Biratnagar. To bring Raghupati Mill to a positive net worth, R 36 million of losses need to be written off as well. Overdraft levels should be established at around 70% of current assets, part of the accumulated interest and penalties need to be written off by the banks and long term loans with repayment periods of ten years need to substitute for existing short term finance. Interest rates, currently over 20%, should be put down to more realistic levels, namely 15%. The banks should accept a moratorium on interest for the next two years and accept the principle that the company should not pay more than one third of its pre-interest profits as interest payments.

1.3.9 With the restructuring programme and rationalisation of the two mills, the results of the two mills combined, is projected for 1991/92 as follows:-

(a)	Profit before interest	R 100 million
	Affordable	R 30 "
	Depreciation	R 10 "
	Distributable profit	R 60 "
	Cumulative losses	R 170 "
(b)	Issued & paid up cap. + reserves	R 26 "
	New equity	R 126 "
Total		R 152 "

(c) After writing off R 20 million losses the net worth becomes approximately R 4 Million.

(d) Liabilities become:

Shareholders funds	R 4	Million
Creditors	R 6	"
ADB Loan	R 15	"
Overdraft	R 85	"
Loans	R 106	"
Total	R 216	"

(e) Equity not used for capital expenditure is R 46 Million and net profits for 1990/91 and 1991/92 amount to R 69 million making total funds of R 327 million compared with R 372 million at present. Hence the banks will have to write off R 45 million and convert the balance of existing principle and unpaid interest into overdraft and long tern loans at the terms and conditions already mentioned.

1.3.10 The forecasts made for 1991/92, although based on fairly cautious assumptions, do give a much brighter financial picture. This picture is obtainable if all the steps (technological, marketing, management, rationalisation, financial injections and restructuring) are firmly taken. It requires some sacrifices and much effort from all parties but is achievable. The alternative would seem to be mounting losses which would ultimately lead to closure of the mills and the demise of the Nepal Jute Industry. Once the mills are operating satisfactorily then the issue of privatisation can be seriously considered.

1.4 MANAGEMENT SUMMARY

1.4.1 The team was unable to get all the information it needed mainly because the management systems are not comprehensive. Planning and budgeting systems have not been fully developed and costing and accounting data is often out of date. Audited accounts were several years behind in the case of Raghupati and monthly information systems have not been established. The whole operation of management information, budgeting and planning needs to be tackled and a computerised accounting approach should be installed.

1.4.2 Apart from fundamental problems in information supply and management systems, there would seem to be a need for tight control at all levels. An internal audit function needs to be created. The consulting team looked at three alternative management approaches namely streamlining the existing situation, or combining the two mills under one management or under one holding corporation. The advantages of the latter may be to improve technology use, improve material supply, increase production, advance financial management while improving the marketing and procurement side. However a fuller evaluation would be needeed before embarking on such a radical approach. Meanwhile a management integration should bring about many of the benefits mentioned.

1.4.3 If this approach were followed there would be one board with a general manager and the following department directors:-

(a) Manning and Finance
(b) Production and Production Services
(c) Marketing Development
(d) Manpower Development
(e) Administration

1.4.4 Such a structure, possibly with a joint venture partner of international repute who might purchase the existing privately held shares at a heavy discount on par value, could help the mills to return to financial vaibility. A partner may be attracted by an offer of management with a fee of 1% of sales and 3% of profits. Once the company were turned around, privatisation (at the moment not a realistic option) could be seriously considered.

1.4.5 Whether or not a joint venture partner is found the companies requires three first rate international managers in technology, marketing and finance who can be employed as advisers as part of a technical assistance package. In addition, major training programmes need to be adopted in the areas of maintenance, quality control, budgeting and costing, export marketing and computerisation.

1.5 RECOMMENDATIONS

1.5.1 It is recommended that the two mills are rationalised under one integrated management team, shown below, reporting to the General Manager:-

(a) Planning and Finance Director
(b) Production and Production Services Director
(c) Market Development Director
(d) Manpower Development Director
(e) Administration Director

1.5.2 It is also recommended that a study be initiated to determine the potential benefit of establishing one holding corporation to control all the existing jute units, excluding the purely agricultural entities.

1.5.3 It is meanwhile recommended that strong efforts are made to identify a joint venture partner of sound international reputation to purchase existing privately owned shares at a discount on par value. The partner will provide management services and develop export materials.

1.5.4 In the absence of such a partner, three international experts should be recruited to strengthen management:-

(a) Technical expert
(b) Marketing expert
(c) Financial expert

1.5.5 It is a matter of prime importance that the existing management systems be developed as follows:-

(a) Market information system to monitor prices
(b) Production, quality and maintenance control systems
(c) Planning, budgeting, costing, M.I.S. & computerised accounting
(d) Receivables, materials and finished goods control systems

1.5.6 Coupled with the establishment of sound management systems is the need to undertake regular training in each of the areas mentioned.

1.5.7 It is further recommended that management establish clear targets for asset utilisation, working capital control, cost control, capital structure and funding.

1.5.8 In order to improve revenues and profitability an aggressive marketing strategy should be adopted as follows:-

(a) annual expenditure of R 19 Million on fairs, promotion, advertising and commissions

(b) minimise the use of traders so as to exert more control over domestic markets and stabilise jute prices

(c) promote the advantages of natural fibres, bio-degradability and favourable environmental impact in advanced countries

(d) promote geotextile applications as a priority as well as blended yarns and rope soles

(e) improve fibre quality by using portable decorticators

(f) allow domestic prices to rise sharply to 1991/92

1.5.9 Further, to increase production and improve capacity utilisation it is recommended that:

(a) the Gardella replacement programme be implemented

(b) prebeaming operations for hessian fabrics are introduced

(c) improved practices are established to minimise wastage

(d) a full feasibility study is carried out for future rehabilitation and replacement needs

(e) capacity is increased to 26,900 MT during the early nineties (70% above the 1991/92 level)

1.5.10 As far as the financial restructuring is concerned, the following steps need to be taken:-

(a) Government increases the equity capital by the R 69 Million obtained from the Italian grant

(b) Government injects a further R 57 Million for capital expenditure and repaying some loans

(c) R 20 Million of losses are written off in the company accounts

(d) The banks write off R 45 Million of unpaid penalties and interest

(e) Remaining liabilities are converted into R 85 Million overdraft and R 106 Million loans

(f) A moratorium on interest and penalties must be agreed up to 1991/92

(g) The banks must accept that interest payments should not exceed one third of the profit before interest

1.5.11 It is finally recommended that when all the preceding steps have been implemented and the mills financial performance has become satisfactory, that the privatisation issue then be evaluated in detail.

SECTION II

GENERAL INFORMATION

2.1 INTRODUCTION & BACKGROUND

2.1.1 Nepal has a small Jute Manufacturing industry comprising the following Mills, all of which are situated in the Biratnagar area:-

NAME OF MILL	PRODUCTS	ANNUAL PRODUCTION
(a) Shree Raghupati J.M.Ltd.	Hessian Sacking & Twine	7,800 MT
(b) Biratnagar J.M. Ltd.	Hessian Sacking & Twine	12,000 MT
(c) Nepal Jute Indus. Ltd.	Jute Twine	2,400 MT
(d) Guheshwary Twine Plant Ltd	Jute Twine	1,800 MT
(e) Guheshwary Jute Mills Ltd. (Not yet in Production but will produce Hessian Sacking & Twine 4,500 MT per annum)		

The total output from the above Mills with the exception of (e) Guheshwary Jute Mills which is not yet in production, is approximately 24,000 Metric Tons based on 24 hours working per 300 days per annum.

2.1.2 Guheshwary Jute Mill consists entirely of second hand machinery and their aim is to produce Hessian, Sacking and Twine at a production of approximately 15 Tons per 24 hour day giving additional finished goods of 4,500 MT. This will raise the total output from all Mills to around 28,500 Metric Tons per annum.

2.1.3 The industry has been facing extreme difficulties in recent years and the two main Mills, Raghupati and Biratnagar have suffered considerable losses. While both Mills have received extensive loans over the years, the liabilities on loan interest are proving to be a burden which has almost become insurmountable.

Lack of markets, complicated by the recent cessation of the trade agreement between India and Nepal has made the situation more difficult and at present there is excess production of Jute Goods as only some 45% of output can be utilised within Nepal.

2.1.4 In addition, the prices for finished goods previously sold to the Indian Market were far from remunerative resulting in a compounding of losses to both Mills. Pricing of RawJute fluctuates throughout the season and as the Mills do not have the liquidity to purchase stocks when prices are at their lowest, batch costs vary throughout the year without any increase in finished goods prices, again creating a loss situation to both Mills.

2.1.5 Raw material shortages are experienced from time to time and it has been known for the manufacturing units to be starved of material resulting in under-utilisation which leads to increased production costs. Productivity is low and, while the reasons are many, the existing plants require modernisation and rehabilitation with required improvement in management techniques and preventive maintenance schemes being introduced.

2.1.6 The continuing losses have made it necessary to study the technical, financial and managerial aspects of the operation of both Mills. Accordingly an UNIDO team comprising a Jute Technologist and Financial Analyst were requested to visit Nepal and assist in examining the possible remedial measures necessary to halt the decline of the Mills and propose a programme of action to turn these loss making ventures into successful and vibrant manufacturing units.

2.1.7 The Nepal Jute Industry is one of the few manufacturing industries that can obtain its Raw Material supplies from indigenous sources. As Jute cultivation is also an important Agro based industry in Nepal the utilisation of local Jute ensures a cash income and alternative crop to the Eastern Nepal farming community. Also the saving in the foreign exchange, because of indigenous raw material and local manufacture of packaging material, is substantial.

2.1.8 At present the combined output of all Mills is in excess of local requirements. Therefore identifying export markets and new products must be the priority to ensure that present production capability is fully utilised at prices which are renumerative to both the Mills and the farming community as a whole. To enter the export markets of the world, the Mills must concentrate on the introduction of tight quality control standards, and sell at prices which are competitive in the market place. To achieve both success in the export business and the introduction of new products will call for extreme effort on the part of the management, technical and sales staff of both Mills.

2.2 COMPANY DETAILS

2.2.1 The two jute mills evaluated by the team are as follows:

(a) Biratnagar Jute Mills Ltd.,located in Biratnagar

(b) Raghupati Jute Mills Ltd.,located in Biratnagar.

2.2.2 The Raghupati Mill was incorporated in 1936 while the Biratnagar Mill started up in 1946. They are essentially public companies with some Government participation. The share capital of the companies for year 1988/9 is as follows:

(a) Biratnagar Mills	R	15.0 million	authorised
	R	11.0 ~	issued
	R	7.1 ~	paid up
	R	3.5 ~	bonus issue
(b) Raghupati Mills	R	16.0 ~	authorised
	R	13.6 ~	issued
	R	5.5 ~	paid up ord.
	R	1.6 ~	~ ~ other.

2.2.3 There are 172 shareholders in Biratnagar Mill in addition to the Government interest which is said to be 12.5% of the ordinary equity. Only 10 of the shareholders own more than one thousand shares. One Indian shareholder holds about 22% of the approximately 100,000 shares issued to private subscribers - that is about 20% of all shares. Any restructuring or other proposals will have to take account of this major shareholder. However, the team was informed by the management of the Bank of Nepal that the shareholders would go along with any reasonable plan that would save the company. Nepali shareholders account for 50.2% of the equity while Shree Industries and other Indian shareholders account for 37.3%

2.2.4 In the case of the Raghupati Mill the Government holding is said to be 67% with private shareholders holding the remaining shares. A private individual named Golcha holds 12% and as such he will have to be involved in any major changes that may be proposed.

2.2.5 Both companies manufacture and market various jute products in the domestic and export markets. The main products are as follows:

Jute sacking
Jute hessian
Jute twine

2.2.6 As far as can be established there is no direct control over the operations of these companies either by the Ministry of Industry or the Ministry of Finance. There is no holding corporation which might control and coordinate the activities of the companies.

2.2.7 As far as can be determined the companies are carrying out no research and development,no product development,no market research and no manpower development. Hence there has been an undynamic approach in the past.

2.3 CORPORATE DETAILS

2.3.1 Raghupati Mills uses K.K.Singh as its external auditors. Its board composition is as follows:-

- Indu Bahadur Sahi	- Chairman
- Shanker Raj Pathak	- Member
- Babaram Shrestha	- ~
- R.N.Rimal	- ~
- Diwakan Golcha	- ~
- K.P.Sharma	- ~ & General Manager.

2.3.2 The board of the Biratnagar Mill is as follows:

- R.D.Sharma	- Chairman
- Zonal Commissioner	- Ex-officio Director
- C.P.Lohani	- Director
- Mrs.Jaya Sha	- Director
- B.R.Pandey	- ~ (in charge)
- J.Shamsher JBR	- ~
- S.N.Singhania	- ~ (resigned)
- B.R.Bhandari	- ~
- D.Bajoria	- ~

2.3.3 As far as can be determined the companies do not employ corporate secretaries so the various functions relating to board meetings,resolutions and records are presumably carried out by company personnel. There is some merit in employing independent external secretaries.

2.3.4 The only subsidiary identified is a small investment by the Biratnagar Mill in a workshop. Raghupati Mill appears to have little or no investments. Future capital investment plans,other than the Gardella proposal with respect to replacing burnt out equipment in Raghupati were unavailable. Similarly,minutes of board meetings,articles of association and other documentation was not made available. In any case everything is in Nepalese and,therefore, there would have been formidable translation problems and costs.

2.3.5 Apart from loan agreements, no other legal documents were in existence at the time of the visit to the mills. There are no joint venture agreements,management agreements, licensing agreements or related documentation,as far as could be determined.

2.4 Loans and other Agreements

2.4.1 Raghupati Mills has a mixture of debt from the Nepal Bank Limited and the Rastriya Banijya Banks. No overdraft facilities are said to be used.

2.4.2 The unaudited accounts for 1988/9 for Raghupati Mills shows a loan position as follows:-

(a) Short term loans	R	85.3 million
(b) Long term loans	R	20.9 ~
(c) Other liabilities	R	97.9 ~
TOTAL	R	204.1 ~

2.4.3 The Nepal Bank management said their exposure was R41.7 million made up of R 15.0 million principal and R26.7 accumulated interest and penalties. The remaining indebtedness is presumably to the Rastriya Banijya Bank.

2.4.4 In the case of the Biratnagar Mills the 1988/89 draft accounts show the following:-

(a) Short term loans	R 28.5 million
(b) Long term loans	R 14.8 ~
(c) Overdraft	R 29.8 ~
(d) Other liabilities	R 94.3 ~
TOTAL	R167.4 ~

2.4.5 The loan details are as follows:-

Asian Development Bank	R	14.8 mn(Govt.guarantee)
Nepal Bank overdraft	R	29.8 mn ~ ~
~ ~ ~	R	7.5 mn
Credit secured on stocks	R	22.2 mn
Work Capital secured on buildings	R	9.1 ~
TOTAL	R	83.4 ~

2.4.6 As of October the Nepal Bank position was as follows:-

	Principle	Acc.Int.		
19% Loans secured on finished goods	R 20.1	+ 0.5	=	R20.6 mn.
19% Loans secured on raw materials	R 2.0		=	R 2.0 ~
19% Work cap	R 9.1	+ 14.8	=	R23.9 ~
O/D Guaranteed by Govt.	R 29.8	+ 35.7	=	R65.5 ~
O/D	R 7.5	+ 0.1	=	R 7.6 ~
TOTAL	68.5		=	R119.6 ~

2.4.7 The Rastriya Banijya Bank exposure in October was as follows:-

secured	R	29.6	million
old	R	9.9	~
other	R	31.0	~
TOTAL	R	70.5	~

SECTION III

SALES & MARKETING

3.1 MAIN PRODUCTS - DISTRIBUTION & USES

3.1.1 Raghupati and Biratnagar Jute Mills are basically identical producers of Hessian, Sacking Fabrics and Twine. These Jute goods are sold directly by each Mill to the different Nepal Government organisations and the balance through local traders.

3.1.2 Hessian Fabrics: Specifications are as follows:-

(a) 11 x 12 x 10 oz x 40" Cloth

(b) 11 x 12 x 12 oz x 40" Cloth

(c) 9 x 9 x 7.1/2 oz x 40" Cloth

(d) 9 x 8 x 7 oz x 40"/45" Cloth

(e) 11 x 12 x 8.9 oz x 40" Cloth

The above fabrics may be sold in 100 yard lengths as Hessian Cloth or alternatively cut and made into bags to cater for transportation of food grains and seeds: The Hessian is generally made into 40" x 22" or 40" x 24" Bags.

3.1.3 Sacking Fabrics: Range manufactured is as follows:-

(a) A Twill - 44" x 26.1/2" x 2.1/4 lb Bag x 6 Porter x 8 Shots

(b) Heavy Cees (Cement) 18.1/2" x 28" Bag x 8 Porter x 8 Shots

(c) Heavy Cees 43" x 29" x 2.1/2 lb Bag x 8 Porter x 8 Shots

(d) B Twill 44" x 26.1/2" x 2.1/4 lb Bag x 6 Porter x 8 Shots

3.1.4 TWINE: Specifications as follows:-

(a) 2 Ply
(b) 3 Ply

In counts ranging from 10 lbs/Spyndle to 24 lbs/Spyndle.

3.1.5 The Heavy Cees cement bags are sold directly to the Government Cement factories. The Agricultural Marketing Corporation buy the Hessian Canvas and Hessian Bags for food grains and seeds. The Food Corporation is a large scale buyer of the B Twills and Heavy Cees. Sugar Mills are the main purchasers of the A Twills.

3.1.6 After meeting the requirements of the above Government organisations the balance Hessian Sacking and Twine is sold in the open market to the traders. It is understood that the prices are at present based on Calcutta market prices or even 10% to 15% below these. This dependence on Calcutta ruling prices is a serious threat to the viability of both Mills and true costs must be accurately recorded to determine what is a fair and reasonable price to the Mills.

3.1.7 Dependence on one export market is also a problem and a marketing arm for both Mills should be set up to cater for the export side of the business to America and Europe. The appointment of agents in the Capitals of the World is recommended. These agents would work on a commission basis therefore these marketing costs would not be a fixed overhead on the already strained resources of the Mills.

3.1.8 It may be noted that the two companies reply heavily upon local traders to market Hessian, Sacking surplus to Government needs and part of the twine production. The consequences of this policy are firstly that the companies have little control over the export marketing and correspondingly over product pricing. The traders not only make 15% to 20% margin (or more) on these sales but also receive Export subsidies which ought to go to the manufacturers.

3.2 MARKET DEMAND & GROWTH

3.2.1 Domestic demand for jute products has not been carefully analysed by the management of the mills and, therefore, the data available is limited. However, from the production and domestic consumption figures given in the official statistics and presented in the companies accounts (often contracdictory figures) domestic consumption appears to have been as follows:-

(000 tons)	Hessian	Sacks	Twine	Total
1979/80	0.1	2.7	0.3	3.1
1980/81	0.2	4.2	0.2	4.6
1981/82	0.2	3.8	---	4.0
1982/83	0.3	3.7	0.1	4.1
1983/84	0.3	3.5	0.1	3.9
1984/85	0.2	1.8	0.2	2.2
1985/86	0.3	5.3	0.3	5.9
1986/87	0.4	4.7	0.3	5.4
1987/88	na	na	na	6.0
Op Growth (79/80 to 87/88)	22%	8%	---	8%

3.2.2 From the above figures it can be seen that domestic demand for jute products was around 5400 tons in 1986/87 and demand has been growing at around 8% per annum overall. For hessian cloth the growth has been higher. If the historical rate of growth continues demand by 1991/92 would be about 8200 tons. However, the new cement factory planned to commence operations in 1992 will require a further 2000 tons sacking per annum.

3.2.3 Clearly the domestic market, even without significant product and market development, should be able to absorb over 10,000 tons of the companies production. This should absorb most of the sacking and twine production and a small proportion of the hessian production (say 20%). It is reasonable to suppose that a more aggressive marketing approach coupled with higher controls over illegally imported sacks and synthetics would enable the companies to market their total production of sacks and twine (about 11,000 tons) and 20% of hessian (about 1,200 tons) to domestic consumers.

3.2.4 Mill management have mainly sold their surplus production (that is the excess over the demand by Government enterprises) to local agents. The agents then sell to foreign buyers and in the process earn good margins, or conversely take their profits elsewhere through transfer pricing. The statistics are not very clear but exports in 1986/87 and 1987/88 appear to have been as follows:-

		1986/87	1987/88
Indian	Tons (000)	3.6	12.3
	Mn R	11.4	48.2
Other	Tons	3.5	3.6
	Mn R	22.0	30.8
Take	Tons	7.1	15.9
	Mn R	33.4	79.0

3.2.5 Sales of jute products for these years would have been approximately as follows:-

		1986/87	1987/88
Hessian	Mn R	77	80
Sacks	" R	97	101
Twine	" R	30	36 (incl other Mills)
Total		204	217

3.2.7 The preceding suggests that in value terms exports have been substantially below domestic sales. It also suggests that average revenues per ton arising from sales to India are much lower than from either domestic markets or other non-Indian export markets. Hence with keen pricing there would seem to be a major potential for penetrating non-Indian foreign markets. Currently Nepal holds less than 1% of worldwide markets for jute products.

3.3 PRODUCT & MARKETING DEVELOPMENT

3.3.1 Both Mills at present produce basically standard Jute goods detailed:-

Hessian Qualities

11 x 12 x 10 oz x 40"

11 x 12 x 12 oz x 40"

9 x 9 x 7.1/2 oz x 40"

9 x 8 x 7 oz x 40"/45"

11 x 12 x 8.9 oz x 40"

These qualities are also made up into Hessian Seed Bags.

Sacking Qualities

Heavy Cee Bags for Cement - 50 Kgs capacity 18.1/2" x 28"

A Twill Bags 44" x 26.1/2" 100 Kgs capacity for Sugar

Heavy Cees 43 x 29 x 2.1/2 lb for food grains

B Twills 44 x 26.1/2 x 2 lbs for food grains

Twines

2 and 3 Ply twines also produced according to market demand.

3.3.2 While it is important to produce traditional fabrics as detailed above, new fabrics must be developed to meet the ever increasing demand for technical fabrics such as Geotextiles. In Nepal there is the never ending battle against erosion and because Jute is Biodegradable it is the ideal medium to use before vegetation is established on newly formed slopes and embankments. The specially constructed Jute material provides protection to the loose earth against wind and rain and thus prevents the movement of soil until the plants take firm root. Once the roots are well established the Jute fabric mesh can degrade thereby allowing the plants to grow and spread without limit.

3.3.3 During the team's stay in Biratnagar a Geotextile construction was woven to the following specifications:-

Warp - 36 lbs/Spyndle
Weft - 36 lbs/Spyndle
Number of Warp threads per Inch - 2.7 (10.63 per 10 cms)
Number of Weft threads per Inch - 3 (11.80 per 10 cms)
Approximate weight of fabric 0.538 lbs/sq yd (292 Grms/sq/metre)

3.3.4 It is expected that the field trials will prove successful and demonstrate the suitability of Jute fabrics for erosion control.

In the field of technical fabrics there are many other uses such as separation of materials in the make up of roadways. Reinforcement of foundations can decrease the stress level in the soil and even out the stresses. The use of Geotextiles will increase the life expectancy of roads and also reduce the thickness of the road making material needed. Close co-operation between the Civil Engineers and the Jute Mills will be required to ensure fabrics are designed to meet the specifications required for particular applications.

3.3.5 The industry must enter the export market and by appointing commission agents in Europe, America and Africa the Sales network can be slowly built up on a world wide basis thereby decreasing the country's dependance on only one export market. To meet export standards, Quality Control will be of prime importance and the range of Jute goods covered would be Hessian, Sacking, Twine, Geotextiles and in a small way blended yarns, i.e. mixture of Jute, Acrylic or Jute/Viscose, but these yarns will only be a relatively small volume requirement.

3.3.6 In Europe the demand for Espadrilles (rope soled shoes) is high and in such countries as Spain and Italy there is a thriving business in the manufacture of this type of shoe. It is believed that agreement between the shoe manufacturers and Nepal could be made to supply the Jute Soles for these shoes.

3.4 PRODUCT PRICING

3.4.1 The Shree Raghupati Jute Mills management gave the mid 1989 local hessian selling prices for various grades and sizes as follows:-

(a)Hessian cloth (40x7)at R467.5 per 100 yds. + 10% tax = R514.2 per 100 yds
= 10,284.8 per bale

(b)Hessian cloth (45x7)at R525.6 ~ ~ ~ + 10% tax = R578.1 per 100 yds
= R11,562.6 per bale

(c)Hessian cloth(40x7.5)at R497.5 per 100 yds. +10% tax = R547.3 per 100 yds
= R10,945.2 per bale

(d)Hessian cloth(45x7.5)at R565.6 ~ ~ ~ +10% tax = R622.1 per 100 yds
= R12,443.0 per bale

(e)Hessian cloth(40x8.1)at R545.6 ~ ~ ~ +10% tax = R600.1 per 100 yds
= R12,002.8 per bale

(f)Hessian cloth(40x10)at R671.7 ~ ~ ~ +10% tax = R738.9 per 100 yds
= R14,777.8 per bale

(g)Hessian cloth(40x8)at R534.3 ~ ~ ~+10% tax = R587.7 per 100 yds
= R11,754 per bale

Average for hessian	R544.0	R598.4 per 100 yds
	---	---
		R 11,967 per bale

3.4.2 In the case of twills and bags the figures given by Raghupati Mill management are summarised below. It may be noted that in all cases the prices for the two mills are the same.

(a) B Twill(44x26.5) at R1522.8 per 100 bag + 10% tax = R1675.1 per 100 bags
= R5025.4 per bale (3)

(b)Hycees Green(43x29)at R1919.4 per 100 bag + 10% tax = R2111.4 per 100 bags
= R8,445.4 per bale (4)

(c)A Twill(44x26.5) ~ R2063.5 ~ ~ ~ ~ ~ = R2269.8 per 100 bags
= R9079.4 per bale (4)

(d)DW Plain(40x28) ~ R1192.4 ~ ~ ~ ~ ~ = R1311.7 per 100 bags
= R5246.6 per bale (4)

(e)DW Green(42x29) ~ R1292.5 ~ ~ ~ ~ ~ = R1421.7 per 100 bags
= R5684.8 per bale (4)

(f)Hycees Cement(28x18.5) at R796.0 per 100 bag + 10% tax
= R 875.7 per 100 bags
= R4378.3 per bale (5)

(g) ~ ~ (40x28) ~ R1726.9 ~ ~ ~ ~ ~= R1899.5 per 100 bags
= R7598.2 per bale (4)

(h) ~ ~ (30x28) ~ R1311.6 ~ ~ ~ ~ ~= R1442.8 per 100 bags
= R5771.2 per bale (4)

(i) B Twill(38x26.5) at R1322.3 per 100 bag + 10% tax = R1454.5 per 100 bags
= R4363.6 per bale (3)

(j)Hycees (30x29) ~ R1358.2 ~ ~ ~ ~ ~ = R1494.0 per 100 bags
= R5976.2 per bale (4)

Average Price: R1450 ~ ~ ~ ~ ~ = R1595.6 per 100 bags
= R6382 per bale

3.4.3 In the case of twine Raghupati management quoted a price per quintal (100 Kg) as follows:

Jute twine (3x24) at R1559.0 + 10% tax = R1714.9 per quintal

3.4.4 While the mills' prices have been affected by international price levels,especially those prevailing in the Calcutta market, the input price of the raw jute and its quality has been an important consideration in the mills'operations. Purchases are made largely through agents who in turn purchase directly from the farmers. Naturally the agents have their costs to meet and profits to make but there have been some suggestions that their affect on prices is to force them up during the months following the jute harvesting. Agents also control the export marketing of jute which in the past has gone mainly to India and there could well be an element of transfer pricing taking place,to the detriment of the Nepalese national economy and the operation of the mills.

3.4.5 While limited information is available,the trade statistics provide some information that supports the idea that there has been price manipulation at the expense of the mills. Clearly the evidence cannot be conclusive because of quality differentials,cost differentials for transportation and timing of sales. However, the following figures for 1986/7 to 1987/8 are illuminating:

		1986/7	1987/8 (est.)	Price Increase
Exports to India:	Tons	3564	12286	
	Rupees	R 11.4 mn.	R 48.2 mn.	
	R per ton	R 3199 per ton	R3923 pt	22%
Exports to Poland:	Tons	2601		
	Rupees	R 15.8 mn.		
	R per ton	R6075 per ton		
Exports to Czech:				
	Tons	898		
	Rupees	R 6.2 mn.		
	R per ton	R6904 per ton		
Overseas (others):				
	Tons	3499	3600	
	Rupees	R22.1 mn.	R 30.8 mn.	
	R per ton	R6316	R 8555 pt	35%

3.4.7 The above shows for the two years 1986/87 and 1987/9 that export market prices excluding India were 97% and 117% above the Indian prices. It also shows that the price increase in local currency terms between the two years was 59% higher for the non-Indian markets.

3.4.8 Exhibit 1 summarises the production and consumption statistics from the published statistics (for years 1979/80 to 1986/87) and the companies' accounts (for 1987/8 and 1988/9). While there are many inconsistencies in the basic data and different official sources, it is clear that production has always exceeded domestic consumption. In general, the volume of jute products available for export has been two to four times domestic consumption, although there are some indications that the domestic markets will grow rapidly in the near future because of the start up of new cement plants and sugar mills.

3.4.9 Obviously if the high degree of export orientation continues, then product prices will also continue to be set by ruling export prices. However, with a firmer control over jute purchases and jute product marketing the companies ought to be able to market their goods at higher export market prices than have hitherto been achieved on the Indian market. This would especially be the case if product quality can be maintained at a high level and European/US markets can be penetrated.

3.4.10 If on the other hand the domestic market expands as is forseen then the average selling prices of the mills will also increase because domestic prices are higher than international prices. The estimate given by the Ministry of Industry is 25% higher but that must be treated with caution because such a major price differential would merely encourage illegal border trade, which in any event is currently occurring.

3.4.11 Having discussed some of the circumstances surrounding product line pricing in recent years and assuming that steps can be taken to minimise profiteering and pricing on the part of the buying and selling agents, the question remains as to what prices are likely to be valid for 1990 onwards. In this respect the prices obtained by the mills for their different products and export prices (where available) are summarised in Exhibit 2.

3.4.12 The main conclusions to emerge from Exhibit 2 are as follows:-

(a) Hessian Prices: - Both mills' prices are close to each other

- Excluding the 1984/85 price which was historically high, the average price increase has been about 11% per annum
- Price increases have been higher in the latter years, between 16% and 18%
- As far as can be determined mill prices are close to international prices

(b) Sack Prices:

- Both mills' prices are close to each other except in 1987/8 when the BJM price was very low. This may be a translation error (note that the company accounts are in Nepalese and were translated for the team).
- Excluding the exceptionally high prices in 1984/85 and the unrepresentative figure for BJM in 1987/88, the average price increase has been about 6% per annum
- the price increase between 1987/88 and 1988/89 was 26%.

(c) Twine Prices:

- Again both mills have adopted similar prices
- Excluding the exceptionally high price in 1984/85 the average annual price increase has been about 10% per annum
- Price increases in recent years have been high at 19% and 24% in the past two years.

(d) Overall

- Latest prices for hessian have just returned to the reported level for 1984/85 while for sacks current prices are a little higher. In the case of twine 1988/9 prices are still 14% below the reported 1984/85 levels.
- Hessian prices per ton have historically averaged 22% above sack prices and have been as high as 30% above sacks. Twine prices per ton have been about 13% less than for sacking which probably is somewhat less than the cost differential.
- Only in the case of twine have the prices been significantly above the prevailing international level.

3.4.13 There are many factors at work which will influence the future production volume, the domestic/export market mix and the future prices that can be expected. There appears to be no reason why the mills, with adequate re-equipping and replacement programmes, should not produce at the levels reached in the mid eighties. That is as follows:-

(000 tons)	BJM	RJM	TOTAL
Hessian	3.2	3.0	6.2
Sacks	6.9	3.3	10.2
Twine	0.5	0.3	0.8
Total	10.6	6.6	17.2

Such an output matrix can be regarded as a reasonable target for1991/92 allowing for the current years to rehabilitate and restructure the units, if it is economically worthwhile and practically possible.

3.4.14 On current trends, it is likely that the entire production of sacks and twine can be absorbed on the domestic market. On the other hand probably around 80% of the hessian production will be for the export markets. Hence the domestic/export matrix may be as follows:-

(000 tons)	Domestic	Export	Total
Hessian	1.2	5.0	6.2
Sacks	10.2	-	10.2
Twine	0.8	-	0.8
Total	12.2	5.0	17.2

3.4.15 These assumptions plus the further factors elaborated below allow estimates of product line prices to be made. Hence in the case of Hessian international prices will have to be followed. However, the non-Indian prices have been nearly double the Indian prices in the past and Hessian has been the dominant product exported. In addition price increases of 16% to 18% have been secured in recent years in Rupee terms. For financial year 1991/92, the assumptions made here are as follows:-

(a) Two years inflationary effect at 17% per annum, taking into account also the likely resurgence in demand for natural fibres as a consequence of the environmental lobby.

(b) An increase of 50% as prices move towards the international level and corresponding quality improvements are made.

(c) A discount of 30% to help market penetration in possibly new export markets.

(d) An overall effect of 43.7% above current 1988/89 average price realisation per ton,or 26.7 (R000) per ton, applicable to 1991/92.

3.4.16 For sacks,prices increased by 31% from 1986/87 to 1988/89 and a further increase can be forseen for the period to 1991/92. At the same time, the domestic market is likely to absorb most of the production. The international demand for sacks offers less potential than in the case of Hessian and,therefore,the Indian market prices achieved in the past may be a more realistic reflection of achievable international prices. If this view is adopted then current prices plus the inflationary element would seem to be appropriate as a basis of calculation. In practical terms there will be protection against imports so a price of 15% above that level should be obtainable. That leads to a total increase of 50% or a price of 22.7 (R000) average realisation per ton.

3.4.17 For Twine a similar argument applies but for simplicity the calculation here is based on maintaining a relationship in 1988/9 between twine and sacking prices. That is 86% or for projection purposes 19.5 (R000) average realisation per ton.

3.4.18 In summary, the price assumptions based on the market evaluation for the revitalised and restructured mill, with greater domestic market orientation and little or no reliance on the Indian market, would be as follows for 1991/92:

Hessian : R 26,700/= per ton.

Sacks : R 22,700/= per ton.

Twine : R 19,500/= per ton.

(These prices are based on the market assumptions and are not necessarily used for profit and loss account projections).

PRODUCTION AND CONSUMPTION OF JUTE PRODUCTS EXHIBIT 1

(000 tons)	1979/ 80	1980/ 81	1981/ 82	1982/ 83	1983/ 84	1984/ 85	1985/ 86	1986/ 87	1987/ 88	1988/ 89
HESSIAN										
BJM prodn.	4.3	3.8	2.8	2.0	2.5	3.2	2.5	3.0	2.8*	2.9*
RJM prodn.	2.7	2.9	2.1	1.1	2.4	3.0	2.4	2.6	1.9*	1.5*
TOTAL Prodn.	7.0	6.7	4.9	3.1	4.9	6.2	4.9	5.6	4.7*	4.4*
Domestic Consumption	0.1	0.2	0.2	0.3	0.3	0.2	0.3	0.4	na	na
Available for Export	6.9	6.5	4.7	2.8	4.6	6.0	4.6	5.2	na	na
Exports							4.3	4.8		
SACKS										
BJM Prodn	5.1	5.2	6.2	9.2	8.6	6.9	6.1	7.2	6.5*	6.7*
RJM Prodn	3.4	3.6	4.1	5.6	4.6	3.3	2.8	2.9	2.4*	2.2*
TOTAL Prodn.	8.5	8.8	10.3	14.8	13.2	10.2	8.9	10.1	8.9*	8.9*
Domestic Consumption	2.7	4.2	3.8	3.7	3.5	1.8	5.3	4.7	na	na
Available for Export	5.8	4.6	6.5	11.1	9.7	8.4	3.6	5.4	na	na
Exports							4.7	5.6		
TWINE										
BJM Prodn.	0.3	0.2	0.2	0.2	0.4	0.5	0.4	0.4	0.5	0.4
RJM Prodn.	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3*	0.2*
Other	-	-	-	1.3	2.5	2.8	2.7	2.7	2.7**	2.7**
TOTAL	0.5	0.4	0.5	1.7	3.2	3.6	3.4	3.4	3.5	3.3

(000 tons)	1979/ 80	1980/ 81	1981/ 82	1982/ 83	1983/ 84	1984/ 85	1985/ 86	1986/ 87	1987/ 88	1988/ 89
Domestic Consumption	0.3	0.2	N	0.1	0.1	0.2	0.3	0.3	na	na
Available for Export	0.2	0.2	0.5	1.6	3.1	3.4	3.1	3.1	na	na
Exports							2.9	3.4		
TOTAL										
BJM Prodn.	9.7	9.2	9.2	11.4	11.5	10.6	9.0	10.6	9.8*	10.0*
RJM Prodn.	6.3	6.7	6.5	6.9	7.3	6.6	5.5	5.8	4.6*	3.9*
Other	-	-	-	1.3	2.5	2.8	2.7	2.7	2.7**	2.7**
TOTAL Prodn.	16.0	15.9	15.7	19.6	21.3	20.0	17.2	19.1	17.1	16.6
Domestic Consumption	3.1	4.6	4.0	4.1	3.9	2.2	5.9	5.4	6.0	3.6
Available for Exports	12.9	11.3	11.7	15.5	17.4	17.8	11.3	13.7	11.1	13.0
Exports							11.9	13.8	13.6	12.9

SALES AND PRICES OF JUTE PRODUCTS

EXHIBIT 2

	1984/85	1985/86	1986/87	1987/88	1988/89
HESSIAN					
BJM Volume	2710	2358	2945	2779	2280
mn R	49.3	33.1	39.8	44.0	42.7
R(000)Av.price/ton	18.2	14.0	13.5	15.8	18.7
RJM Volume	2702	2589	2693	2171	1390
Mn R	48.7	34.8	36.8	35.5	25.8
R(000)Av.price/ton	18.0	13.4	13.7	16.3	18.6
TOTAL Volume	5412	4947	5638	4950	3670
Mn R	98.0	67.9	76.6	79.5	68.5
R(000)AV.Price/ton	18.1	13.7	13.6	16.1	18.7
SACKS					
BJM Volume	4525	6772	6291	7744	5978
Mn R	68.7	82.8	71.7	65.3	90.9
R(000)Av.price/ton	15.2	12.2	11.4	8.4	15.2
RJM Volume	2743	3034	2142	3037	2801
Mn R	37.1	38.0	25.5	36.0	42.1
R(000)Av.price/ton	13.5	12.5	11.9	11.9	15.0
TOTAL Volume	7268	9806	8433	10781	8779
Mn R	105.8	120.8	97.2	101.3	133.0

	1984/85	1985/86	1986/87	1987/88	1988/89
R(000)Av.price/ton	14.6	12.3	11.5	9.4	15.1
TWINE					
BJM Volume	473	273	554	490	337
Mn R	7.2	2.7	4.7	5.0	4.4
R(000) Av.price/ton	15.2	9.9	8.5	10.2	13.1
RJM Volume	290	266	340	306	224
Mn R	4.3	2.7	3.2	3.3	2.9
R(000) Av.price/ton	14.8	10.1	9.4	10.7	12.9
TOTAL Volume	763	539	894	796	561
Mn R	11.5	5.4	7.9	8.3	7.3
R(000)Av.price/ton	15.1	10.0	8.8	10.5	13.0
EXPORT PRICES					
Hessian		13.7	13.6		
Sacks		11.8	11.1		
Twine		8.4	7.3		

3.5 QUALITY OF PRODUCT

3.5.1 The requirement of the export markets in terms of quality are considerably greater than these needed for the local markets. If the two Mills are to succeed in obtaining a foothold in overseas business then they must adhere to B.S. 1133 Packaging Code. In order to attain these standards the Mills will have to adopt the Quality Assurance procedures which are fully described in the Technical Section in Quality Control Section IV 4.6.

3.5.2 RAW JUTE

Quality of the Raw fibre should be carefully controlled at the factory gate point, in terms of colour, fibre strength, freedom from root and exogenous matter. Quality control at the input stage at the factory should be part of greater control procedures over all input materials.

3.5.3 YARNS

Yarn regularity, freedom from root, splices and thicks and thins and good knotting are requirements that must be met.

3.5.4 CLOTH

The cloth must be of good cover with correct number of threads both Warp and Weft way. Cloth weights should conform to specifications and be within the allowed tolerances and where appropriate should be of correct colour and texture.

3.5.5 SACKS

The sacks must be produced to correct size and specifications and all sewing must be to enable the sacks to withstand the bursting and drop tests.

Each bale of sacks must contain the correct number of sacks and total weight must fall within the ascribed parameters.

SECTION IV

TECHNICAL EVALUATION

4.1 Present State of Plant & Description of Process

4.1.1 The plant in both Raghupati and Biratnagar is more or less identical in technology as detailed on the Process Flow Chart given on Page No.52. Comments on the present state of the plant in each Mill are given in the paragraphs below:-

4.1.2 Shree Raghupati Jute Mills

(a) Waste Cleaner: Although very old the unit functions in a satisfactory manner and needs little in the way of renovation.

(b) Softeners: The Rollers and all bushes in very bad condition. The two Softeners should be replaced but an alternative could be renewal of all Rollers and Bushes and replacement of all pressure springs.

Light Yarn Systems

(c) Breaker Cards

There are four Breaker Cards, two of which are in reasonable condition and could be overhauled but the two J.F. Low Breakers should be replaced with new Cards.

The Roll Formers on all Breakers require major overhaul.

(d) Finisher Cards

Out of the five Finisher Cards two are fairly new with Single Doffer and three are old with Double Doffer. In view of the limited finance available these five machines could be retained and overhauled.

The Roll Formers on all Finisher Cards require major overhaul.

(e) Drawing Frames

1st Drawings: There are four Spiral 5 Head Drawings which require major overhaul.

2nd Drawings: There are four Spiral 5 Head Drawings, two with Doublings 4 into 1 and two with Doublings 3 into 1. All require major overhaul.

(f) 3rd Drawings: There sre six Spiral 5 Head Drawings. All require major overhaul.

(f) Slip Draft Spinning Frames: There are 30 Off 4.1/4" Pitch Light Yarn Spinning Frames each of 100 Spindles, of these 11 are stopped due to shortage of spare parts. All Spinning Frames to be overhauled and worn parts replaced. The majority of Drawing Rollers are bad'y worn but these can be realigned to move the worn parts of the Roller clear of the Sliver Path. This operation can be accomplished fairly easily and at nominal cost. Balance of parts to be changed where necessary.

(g) Warp Winding

The 4 x 32 Spindle Mackroll Winders require major overhaul with complete replacement of the Scroll Rollers and general replacement of wear parts.

There is also one x 96 Spindle JF Low Roll Winder which should be replaced completely.

It is proposed that the Gardella offer be amended to include two New Roll Winders and reduce the Rapier Looms from 20 to 18. The increased efficiency obtainable from the Looms because of better quality spools will balance the projected output of bags from the new installation.

(h) Heavy Yarn Systems

The Hard Waste Card is in reasonably good condition but requires overhaul.

(i) Teaser Cards

The two single Teaser Cards should be put into Tandem and given a general overhaul.

(j) Breaker Cards

There are two old J.F. Low Teaser Cards. Recommend these are replaced with new Breakers complete with Roll Formers.

(k) Finisher Cards

There are three J.F. Low Half Circular Finisher Cards. These to be retained but overhauled and fitted with finer pinning on the staves.

(l) 1st Drawings

There are two Mackhigh Pushbar 1st Drawings which require overhaul otherwise OK.

(m) Finisher Drawings

2 x 4 Head Finisher Drawing Frames and one old type Finisher Drawing.

NB. Should the Gardella Tegard Looms be installed and weaving efficiency were to increase, the Heavy Yarn section would require the following extra equipment to balance output.

1 New Teaser or Breaker Card with Roll Former
1 New Finisher Card
1 1st Drawing Frame
1 Finisher Drawing Frame

(n) Heavy Yarn Spinning

Of the 5 x 5.1/2" Pitch Vee Roller Spinning Frames installed one has been stopped due to shortage of parts. The remaining four are requiring extensive overhaul.

In addition, because of increased production requirements from the new Loom installation, a further 4 x 80 Spindle Spinning Frames are required or alternatively one Gardella Pot Spinning Frame of 96 Spindles.

(o) Cop Winding

There are 3 x 144 Spindle Cop Machines installed, these require extensive overhaul or replacement.

BEAMING DEPARTMENT

(p) Sizing Equipment

There are 3 Off 3 Cylinder Sizing Machines which require overhaul but with the addition of Prebeaming equipment these could continue to give good service for a number of years.

(q) Dry Beaming

There are two Dry Beamers which require overhaul but are still basically sound.

New Installation

Gardella have proposed 1 New Prebeamer and Creel with one Rebeaming machine. The installation of this new equipment will make a tremendous improvement to beam quality being produced.

(r) Looms

The Hessian and Sacking Shuttle Looms are old but can still be used providing good quality cops and beams are produced. The next step would be gradual replacement of the Sacking Shuttle with new Rapier High Production Looms.

(s) Finishing Department

The equipment in this department is basically sound but requires overhaul. The Calender Paper Bowls require dressing by turning and re-facing of the surface.

Sewing Machines require major overhaul.

(t) Baling Press

John Shaw 1130 Ton Press. Foundation cracked, requires repair and replacement of Pump unit.

Biratnagar Jute Mills

As this Mill was not in operation during the team's visit it was not possible to give an accurate assessment on the general state of the machinery and quality of material being produced. However examination of the plant in static condition indicated the following.

(a) Softeners: Require replacement or thorough overhaul.

(b) Teaser Cards: Old but reasonable condition, general overhaul required.

(c) Breaker Cards: Very old machines recommend replacement 10 Breakers.

(d) Inter Cards & Finishers: With renovation these would be suitable.

(e) 1st Drawings: All require major overhaul. Mackhighs are OK.

(f) 2nd Drawings: All require major overhaul.

(g) 3rd Drawings: All require major overhaul.

(h) 4.1/4" Pitch Spinning Frames: All Drawing Rollers worn but can be repositioned as described against Raghupati Jute Mills.

(i) 5.1/2" Pitch Spinning Frames: All Drawing Rollers to be changed also Retaining Rollers.

(j) Warp Winding: General overhaul replace Scroll Rollers.

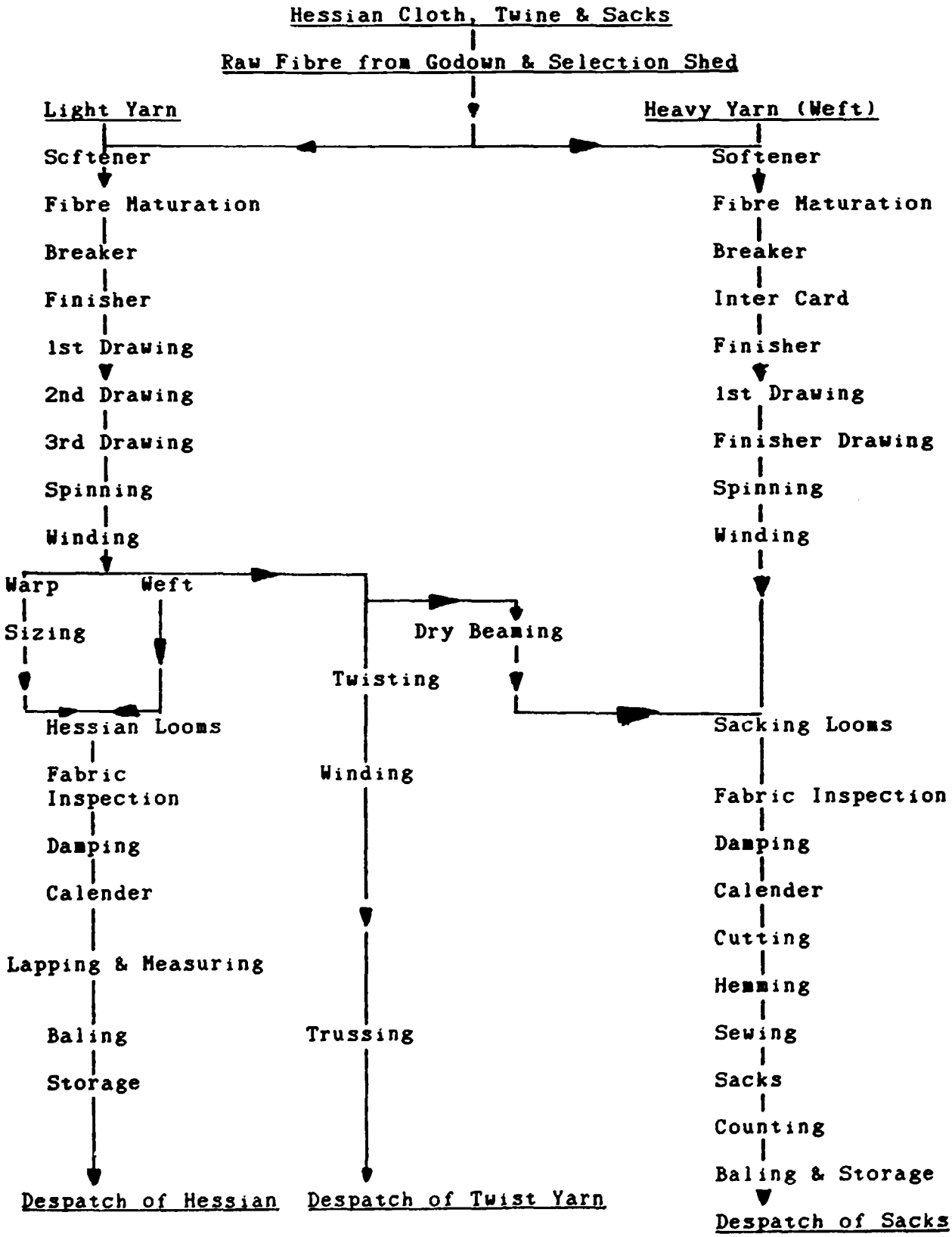
(k) Cop Winding: Require major overhaul or replacement.

(l) Sizing & Beaming: Require overhaul and addition of Prebeaming equipment.

(m) Looms: Shuttle Looms old but functional. Phased replacement of Sacking Looms.

(n) Finishing Department: Basically sound with machines requiring general overhaul.

PROCESS FLOW CHART CHART A



4.2 TECHNOLOGY EVALUATION

4.2.1 BALANCING & NEW PROCESSES RECOMMENDED

The technology in both Raghupati and Biratnagar Jute Mills is basically identical although Biratnagar is the larger of the two Mills.

In Appendices I and II a complete recalculation of possible production capability in both Mills has been carried out. The following efficiencies were used for both Mills as attainable and realistic targets: after rehabilitation and balancing.

Hessian Weaving efficiency (without prebeaming) 67% = 8.43 lbs/loom hour (3.83 Kgs)

Sacking Weaving efficiency (Shuttle Looms) 75% = 22.39 lbs/loom hour (10.16 Kgs)

NB. With prebeaming, Hessian Weaving efficiency could be at least 75% to 77%.

SPINNING EFFICIENCIES

	RPM	TWIST	COUNT	EFF.	OUTPUT/AV.LBS/HOUR
Hessian Warp	3600	4.25	8.25	85%	69 lbs/Frame/hour
Hessian Weft	3600	3.75	10.00	85%	94 lbs/Frame/hour
Sacking Warp	3600	4.0	10.25	85%	90 lbs/Frame/hour
Sacking Weft	1900	2.2	34.00	80%	217 lbs/Frame/hour

Roll Winding Efficiencies

Light Yarn-Mackroll 32 Spindles 70% eff. 330 lbs/Frame hour

Cop Winding Efficiencies

Light Yarn	144 Spindles	65% eff.	324 lbs/Frame/hour
Heavy Yarn	144 Spindles	60% eff.	1267 lbs/Frame/hour

4.2.2 Wastage

Calculations have been based on the following changes in percentages during the manufacturing process:-

PROCESS	LIGHT YARN	HEAVY YARN
Batching	100%	100%
Softener	124%	130%
Breaker Card	116%	119%
Finisher Card	110%	112%
1st Drawing	109%	110%
2nd Drawing	107.5%	108%
3rd Drawing	106%	---
Spinning	103%	104%
Weaving	98%	96%
i.e. Wastage Spinning to weaving	5%	8%

The Warp and Weft requirements have been based on the following fabric construction:-

	HESSIAN		SACKING	
Warp	44.89%		41.77%	
Weft	54.89%		56.43%	
Selvedge	0.22%	(Cotton)	1.80%	(Incl.sewing Twine)
	100.00%		100.00%	

Based on the above figures the recalculations indicate the attainable outputs against each Mill after balancing and renovation is carried out.

4.2.3 Raghupati Jute Mills

At present production is 1.083 MT/hour or 26 MT/day.

Possible output after renovation and balancing - 1.654 MT/hour or 39.70 MT/day, or 11,908 MT per annum which compares with an historical maximum annual output of 7,300 MT.

4.2.4 To attain this production, renovation of existing machinery and the addition of the following equipment will be necessary:-

1 - Breaker/Teaser Card complete with Roll Former

1 - Finisher Card complete with Roll Former and Roll Feeder

1 - 1st Drawing Frame

1 - Finisher Drawing Frame

4 - 80 Spindle Spinning Frames or 2 Gardella Pot Spinning Frames of 96 Spindles

4.2.5 The above equipment will be required to cater for the increased productivity as well as the output for 18 Tegard Looms. Note, the Gardella proposal originally offered 20 Looms but in view of the poor state of the Roll Winding section it is recommended that 18 Looms be installed plus 2 new Roll Winders. The increased weaving efficiency thus achieved will compensate for the two Tegard Looms which will be omitted. See also Appendix I. Installation of Prebeaming equipment for the Hessian Looms is also recommended.

Biratnagar Jute Mills

4.2.6 At present production is 1.667 MT per hour or 40 MT/day. Possible output after renovation and balancing - 2.09 MT/hour or 50 MT/day, or 15,000 MT/annum. Maximum historical 11,500.

To attain this production the renovation of all equipment as detailed under Section IV 4.1 is required and the addition of the following equipment is required.

2 x 80 Spindle 5.1/2" Pitch Spinning Frames or 1 x 96 Spindle Pot Spinner.

Installation of Prebeaming equipment for the Hessian Looms is also recommended.

For both Mills, the production of standard Hessian products as well as all types of Sacking and Twine Yarns should continue. However the manufacture of Geotextiles (Geojute) fabrics should be undertaken. The market requirements for these fabrics is considerable in Nepal alone but there are also the needs of the USA and Europe to be considered. Priority in the development of these technical fabrics should be given with the closest possible liaison being set up between the Mills and Soil Conservation, Watershed Project, Road Building etc. The market appears unlimited and to enter this field would mean an era of prosperity for the Jute Industry which would enable the Mills to wipe out all debts and enable them to modernise with new machinery and equipment rather than rely on the existing equipment being renovated.

A smaller market for Blended yarns may emerge such as mixtures of Jute and Acrylic or Viscose for the Tibet area. However, it is believed, that this will be a small output requirement and greater emphasis must therefore be placed on Technical fabrics. An additional market may well be production of heavy yarns for the making of Rope Soles for Espadrilles and a tie up with Italian, French or Spanish shoe manufacturers should be investigated.

4.3 MATERIALS

4.3.1 The Nepal Jute Industry is fortunate in that it has a supply of raw materials basically on its own doorstep as the main Jute growing areas are all within easy reach of the two main Mills. This ready availability should make the raw material so much cheaper and also save foreign exchange.

4.3.2 From the quality aspect, the specification of Nepal Jute is recognised on the following basis by the London Jute Association.

GRADE OF JUTE		SPECIFICATION
Export First	(a)	Light cream to straw colour. Fibre to be strong, of fine texture and good lustre. Free from Speck, discolouration and harshness. Clean in the body.
Export Lightning	(b)	Light to medium in colour, reddish fibre permitted. Good strength, Good texture and average lustre. Free from hard speck and crop end
Export Hearts	(c)	Any colour. Average strength, free from damaged fibre. Occasional bark and speck permissable. Slightly croppy gummy tops permissable. Well cut.
Dundee Tossa 4	(a)	Reddish to reddish brown in colour. Fibre to be strong of fine texture and good lustre. Free from speck, discolouration, harshness and loose stick. Clean cut and well handled.
Dundee Tossa 6	(b)	Light to medium in colour. Strong fibre of good lustre and texture. Clean in the body free from speck and loose stick. Well handled and clean cut.
Outport Tossa 2/3	(c)	Copper to grey in colour. Sound strength, average lustre. Free from hard speck and hard crop. Well handled and cut.

Outport Tossa 4	(d)	Mixed colour. Average strength, but free from dazed weak fibre. Occasional Bark and speck permitted. Slightly croppy and gummy tops permitted. Cut on the hand. A white or Tossa grade lower than hearts or Outport Tossa4 would amount to cut rejection.

RAGHUPATI JUTE MILLS

4.3.3 JUTE BATCH COMPOSITIONS & PRICES AS AT 1ST NOVEMBER 1989

Hessian Warp	Grade	%	per Ton	Cost
	Tossa Heart	73	Rs.7880	5752.4
	Sada Heart	27	Rs.7000	1890.0
		100%		Rs.7642.4 per MT

Hessian Weft & Sacking Warp & Twine

Tossa Heart	54.5%	Rs.7880	4294.6
Sada Heart	27.0	Rs.7000	1890.0
Good Middle	9.25	Rs.7630	705.8
Heart & Thread Waste	9.25	Rs.6027	557.5
	100%		Rs.7447.9 per MT

Sacking Weft

Middle	64%	Rs.6250	4000.0
Cuttings & Thread Waste Caddis	36	Rs.5902	2125.0
	100%		Rs.6125.0 per MT

4.3.4 Jute Batch compositions for Biratnagar not available due to Mill closure.

The local availability of Raw Jute should be a considerable advantage to the Mills in Biratnagar, however the problem of varying prices throughout a season is one which requires attention and our proposals to overcome this are detailed under Section I, 1.5 Recommendations. In addition however, quality of the Nepal Jute can vary and while as always there are many reasons for this, we believe that by slight changes in the Retting and Stripping process the overall quality of the Jute can improve substantially.

4.3.6 At present after retting in various qualities of water much of the fibre is badly stained which affects its ultimate value as well as the value of the finished goods. The water for retting can be a small river, a dam or even a pool of stagnant water, it is this latter that creates the Jute discolouration. The shortage of water is of major importance to the farmer. We believe the use of a simple Decorticator may be the answer to the shortage of water as the Decorticated ribbons require a nominal 3 to 4 days steeping in water. This shorter retting time will we believe reduce the staining of the fibre thereby producing a better quality fibre with greater sheen and cleanliness.

4.3.7 Finally, the method of stripping the bark from the fibre in Nepal is done by breaking up the stick into small pieces which are difficult to remove resulting in a sticky mass being entwined into the fibre. The decortication process is certainly worth trying out as not only would the locally produced finished goods improve in quality but there could also be an increased demand for cleaner fibre from overseas countries.

4.1 PRODUCTION BOTTLENECKS

4.4.1 From the calculations given in Appendices I and II it will be seen that both Raghupati and Biratnagar Mills could improve productivity by having various machines overhauled and with new equipment installed to balance output there could be possible increases of 52.66% output in respect of Raghupati (this takes into account the new Gardella Looms), and 25.82% in respect of Biratnagar. As mentioned earlier in the report, Biratnagar was not in operation therefore comments on production bottlenecks etc. can only be commented on in respect of Raghupati. This Mill has three problem areas which need immediate attention.

4.4.2 1. BATCHING AND CARDING

There is no adequate emulsion application control at the Softeners, which results in wide variation of emulsion application which can lead to all sorts of problems in subsequent processing. This is one item which can be attended to immediately. The Carding section requires immediate attention. None of the Breaker Cards have selvedge plates fitted, and their absence creates bad sides on the Sliver rolls causing stealing and bad unwinding giving irregularities. The Breaker Roll Formers are in bad shape and are producing rolls that are far too wide for the spaces between the Finisher Card divider plates. Instead of eleven rolls being fed into the Finisher Cards there are only eight rolls being unwound in the proper manner, while two are allowed to lie on the floor and the sliver is pulled from the centre. All these factors leading up to irregular sliver which gives ultimately poor quality yarn.

4.4.3 2. DRAWING FRAMES

The 2nd and 3rd Drawing Frames on the light yarn are a real bottleneck with the stoppages at the 3rd Drawing being a considerable source of trouble. The irregularities from the Finisher Cards as mentioned above are one of the causes of the chokes and jams on the drawings. Attention to the problem of bad rolls at the finisher would help improve the situation, also a slowing down of faller speeds by an average of 10% to 15% would help reduce stoppages.

4.4.4 3. WINDING

The wastage figure at present from the Weaving is 7.1/2% and the reason is the exceptionally bad quality spools and cops that are being made. However, while both the Warp and Weft Winding is mechanically bad the knot tying is basically non-existent. This point was made during a seminar held at Raghupati and it is a problem that can be overcome without renovating machines or changing technology. Attention must be given by the line overseers to ensure proper knots are tied at both Roll and Cop Winding otherwise the high wastage and low weaving productivity will continue. Attention to these and many other points would do much to raise both productivity and quality at Raghupati. It is appreciated the machinery is old and is in need of renovation but many of the yarn faults and stoppages are created not by old machinery but by bad practices by the workers. It is however the responsibility of management to ensure the workers are told why and how they are going wrong and shown how to correct these man made faults that are arising in the Mill.

4.5 MAINTENANCE

4.5.1 In both Raghupati and Biratnagar Jute Mills the general condition of the machinery is poor. This is due to a number of factors, the main one being, non availability of spares and accessories without which, even the best run Mills will face serious problems. There are limited engineering facilities in the Biratnagar area although it is believed that there is an Engineering repair workshop adjoining Biratnagar Jute Mills. These facilities should certainly be extended to the maximum and thus help the two Mills to become more or less self sufficient in their day to day requirements of wear parts.

4.5.2 As stated earlier in the report, Biratnagar Jute Mills was not in operation at the time of the survey so it is difficult to assess the general operational efficiency of the machinery. However sufficient was seen in both Mills to indicate the desirability of setting up Preventive maintenance schemes. Many of the machines are old and in certain instances the original machinery manufacturers are no longer in existence. However, the main equipment is largely of James Mackie & Sons manufacture and their preventive maintenance schemes should be adopted as quickly as possible.

4.5.3 In addition to Preventive Maintenance schemes being introduced, technical instruction courses should be started, and apart from meetings on Jute Technology, the engineering requirements of the equipment should be thoroughly discussed. It is only by knowing the requirements that it will be possible to train the staff and workers how best to maintain the Jute Processing equipment.

4.5.4 Maintenance can only be successful if the equipment is kept clean and well lubricated. Cleaning programmes should be set up with particular emphasis in the Carding, Drawing and Spinning sections. For example, the following cleaning schedules should be introduced.

(a) Cards

All rollers thoroughly picked, cleaned and brushed once per shift. In addition to this complete cleaning, the Doffers should be cleaned every four hours.

The above cleaning cycles apply to Light and Heavy yarn.

Each Card operator is responsible for cleaning the outside of his machine.

(b) Drawings

All faller bars and brushes to be picked and brushed once per shift. At the time of cleaning bars should be checked for bent or hooked pins.

(c) Spinning

Felt friction bobs must be cleaned regularly at least once per month. Blowdown cleaning by the spinner at intervals throughout the shift.
Each Spinning Frame to be thoroughly cleaned once per month.

4.5.5 The above procedures are only examples of the importance of keeping the machinery clean. A dirty Mill will create bad housekeeping and poor maintenance. Cleanliness is of prime importance and each departmental overseer should be made responsible for the general cleanliness in his respective department.

4.5.6 The lubrication schedules as laid down by the machine manufacturers should be strictly adhered to and the mechanical department overseer should periodically check that the schedules are being maintained.

4.5.7 Finally, the basis of successful Jute processing is in the Carding process particularly the 1st Cards, it is therefore of vital importance that the repinning and staving cycles are regularly maintained, e.g.

Teaser Cards - Cylinder repinned every 1200 hours
Breaker Cards - Cylinder repinned every 2400 hours
Inter Cards - Cylinder repinned every 3600 hours
Finisher Cards - Cylinder repinned every 4800 hours

All other rollers to be examined at time of repinning and pins renewed where necessary.

4.5.8 It would seem to be a matter of high priority that comprehensive training be established in preventative maintenance and Jute Technology. Overseas courses in Jute technology are no longer generally available and therefore it would be appropriate that such programmes be organised on site.

4.6 INTRODUCTION OF QUALITY ASSURANCE

Both Raghupati and Biratnagar Jute Mills must enter the export markets of the world and must therefore set standards that are at least compatible with British Standard Specification BS.1133 Packaging Code. To assist both Mills in attaining these standards it will be necessary to adopt the following quality assurance routines:-

(a) Raw Jute

Morahs should be made up to give ar individual weight of 1 Kg each and maintained at the average weight of 1 Kg + or - 15%.

Weights of groups of 25 Morahs.

Average 25 Kg + or - 5%

(b) Oil Content of Emulsion

Target percentage oil in total emulsion to be within Plus or Minus 2%

(c) Emulsion Application

Long Jute: 25 - 27%)Percentage Emulsion applied
Good Quality Cuttings: 28-32%)should be as high as possible
Low Quality Cuttings: 35-40%)consistent with trouble free running at the machines

(d) Humidity

This will vary with the season but ideally should be around 75% Relative Humidity (RH). It should never fall below 60% Godowns both Raw Jute and Finished goods are best kept at 70% RH.

Coefficient of Variation (CV) Norms for Sliver Irregularity

	Hessian Qual.		Sacking Qual.	
Breaker Card 10 yd lengths	Below 15%	Good	Below 15%	Good
	15 to 20%	Average	15 to 20%	Average
	Above 20%	Poor	Above 20%	Poor
Finisher Card 10 yd lengths	Below 6%	Good	Below 8%	Good
	6 to 9%	Average	8 to 10%	Average
	Above 9%	Poor	Above 10%	Poor

1st Drawing 10 yd lengths	Below 6%	Good	Below 6%	Good
	6 to 9%	Average	6 to 9%	Average
	Above 9%	Poor	Above 9%	Poor
2nd Drawing 10 yd lengths	Below 5%	S Warp	Below 6%	Good
			6 to 9%	Average
			Above 9%	Poor
Finisher Drawing 25 yds	Below 5%	Good	Sweft Below 6%	Good
	5 to 8%	Average	6 to 8%	Average
	Above 8%	Poor	Above 8%	Poor

(f) Yarn Count CV & Yarn Quality Ratio and CV

QUALITY	COUNT CV	YARN QR & CV	
Hessian Warp	6.5% Max 100 yd test	Hess.Warp	QR-80%-85% CV25% Max
Sacking Warp	7.5% " " " "	Sack.Warp	QR-70%-80% CV28% Max
Sacking Weft	8.5% " " " "	Sack.Weft	QR-65%-70% CV32% Max

(g) Yarn Twist Factors

Hessian	- 11.5	- 12
Sacking Warp	- 12	- 13
Sacking Weft	- 13	- 14

(h) MOISTURE REGAIN	HESSIAN	SACKING
Fibre	14 - 18	14 - 18
Breaker Card Sliver	28 - 32	30 - 34
Finisher Card Sliver	26 - 30	28 - 32
Fin. Drawing Sliver	20 - 24	23 - 27
Yarn on Bobbin	16 - 18	17 - 20
Yarn on Spool or Cop	15 - 17	16 - 19
Yarn on Beam	20 - 22	22 - 24
Hessian Cloth	14 - 16	---
Sacking Cloth	---	18 - 20

(i) Ends and Picks

Hessian Target + or - 4% Sacking Target + or - 5%

(j)		Hessian	Sacking
Bags	Width	+ 1" - 0"	+ 1.5" - 0"
	Length	+ 1" - 0"	+ 1" - 0"
	Weight	+ 8% - 0%	+ 10% - 0%

SECTION V

MANAGEMENT DEVELOPMENT

5.1 TOP MANAGEMENT

5.1.1 The top management team of the Raghupati Jute Mills Company was given as follows:-

General Manager	-	K.P.Sharma
Assistant General Manager	-	D.B.Pandey
Financial Manager	-	S.B.Khapung
Administration Manager	-	G.P.Sapakota
Mill Manager	-	P.K.Nepal
Stores Manager	-	K.N.Mishia

Other top posts were also quoted as follows:-

Mill Engineer	-	P.Marikrara
Shift Manager	-	N.B.Mangrati
Batching Manager	-	M.Bashnet
Labour Officer	-	K.K.Das.

5.1.2 In the case of Biratnagar Jute Mills Limited an Organisation Chart was provided and the top management posts are as follows:-

Resident Director	-	Vacant
Director in charge	-	B.R.Pandey
Sales & Marketing Division	-	J.K.Rayamajhi
Financial & Accounting Division	-	B.P.Sapkota
Administration Division	-	U.C.Shreshtha
Electricity & Maintenance Division	-	R.C.Upadhgay
Procurement Division	-	M.B.Malla
Labour Division	-	A.P.Nepal
Production Division	-	G.B.Singh

5.1.3 The organisation structure, at least in the case of Biratnagar Jute Mills Limited, groups the selling,procurement and financial functions under one ~Resident Director~ and administration. labour,production, electricity and maintenance under the ~Director in Charge~. It is a rather lopsided structure and could be modified with good effect.

5.1.4 A better top level structure for both mills would be as follows:

1. The Main Board.
2. The General Manager, reporting to the main board.

3. Department Directors for:
   (a) Production and Production Services.
   (b) Planning and Finance.
   (c) Manpower Development.
   (d) Marketing and Procurement.
   (e) Administration.

5.1.5 To provide better financial control,the Planning and Finance department should be responsible for:

1. Department plans.
2. Department budgets.
3. Internal audit
4. Financial control
5. Accounting
6. Costing and pricing
7. Liquidity and financing.

5.1.6 To provide better production control the Production and Production services department should be responsible for:

1. Production planning.
2. Production scheduling
3. Production control
4. Raw material control
5. Quality control
6. Process control
7. Maintenance and repair.

5.1.7 To provide a more dynamic management and manpower development potential,the Manpower Development Department should be responsible for the following:

1. Manpower planning
2. Manpower recruitment
3. Manpower training
4. Manpower motivation and incentives
5. Manpower health and welfare
6. Maintaining personnel records.

5.1.8 In order to improve the marketing and procurement services, the Marketing and Procurement Department should be responsible for:

1. Purchasing planning
2. Market planning
3. Market research
4. Product development
5. Research & development
6. Advertising and promotion.

5.1.9 There should be a middle manager for each of the 26 functions plus the administrative functions. Each mill should have the necessary personnel for these functions.

5.2 ALTERNATIVE MANAGEMENT APPROACH

5.2.1 Three options have been considered as follows:

(a) Organise the two mills with the departments already described and run each as an independent unit - Case A.

(b) Combine the mills so that one top management team supervises both - Case B.

(c) Create a new holding corporation which would carry out all the main management functions other than mill management - Case C.

5.2.2 Case A would be very much the present situation with some streamlining of management. There would be advantages in that procurement, marketing, personnel development and financial control would be given more emphasis. Another advantage is that there would be some competitiveness between the mills and the rationalisation of shareholdings would not have to be tackled. The disadvantages would be higher overall costs, less coordination and considerable duplication of marketing development and productive efforts. Exhibit 3 gives the organisation chart that would apply for Case A.

5.2.3 Case B would have the advantage over A of saving some overhead costs and effecting better coordination and control. It presupposes that the mills' ownership can be rationalised and that a merger will result in one board of directors and one top management team. The organisation chart for this case is shown in Exhibit 4 attached.

5.2.4 Case C is a much more far reaching proposal to form a separate holding company that would look after all the affairs of the jute and jute processing industry. Such a holding company would encompass any or all of the following organisations.

(a) Biratnagar jute Mills Company.

(b) Raghupati Jute Mills Company.

(c) Two Jute twine plants.

(d) A new jute mill under implementation.

(e) The jute Products Development Board.

5.2.5 Such a holding corporation would be responsible for the following:

(a) financial management and control of the existing companies and internal audit

(b) evaluation of proposals and preparation of feasibility studies for expansions,diversifications or new jute projects

(c) the promotion of supply of high quality jute

(d) development of core jute estates to help stabilise prices and supply in terms of both quantities and qualities

(e) research and development into new uses for jute and product development

(f) market research,market development,advertising and promotion

(g) general management planning and budgeting

(h) price monitoring and control of transfer pricing

(i) internal and external information systems

(j) mobilisation,generation and utilisation of economic resources

(k) management and manpower development and training.

5.2.6 An organisation chart for this possible approach has not been prepared because considerable evaluation and amplification would be needed first. That is if a decision in principle were made to follow this course. For example, such a holding corporation could be constituted as a government controlled entity or as a private sector organisation. It could involve foreign institutions either as joint venture partners or providing other forms of technical cooperation.

5.2.7 Whichever form of top management structure is adopted it is clear that the mills have to move forward rapidly in a number of areas simultaneously. These areas include:

(a) improving technology

(b) inproving material supply and control

(c) improving financial management and control

(d) improving quality of production

(e) improving procurement

(f) improving marketing.

5.2.8 It is felt that the management teams need technical assistance in some or all of the above areas. Hence it is suggested that international personnel from the technologically advanced countries be recruited for at least the following advisory functions:

(a) technical

(b) marketing

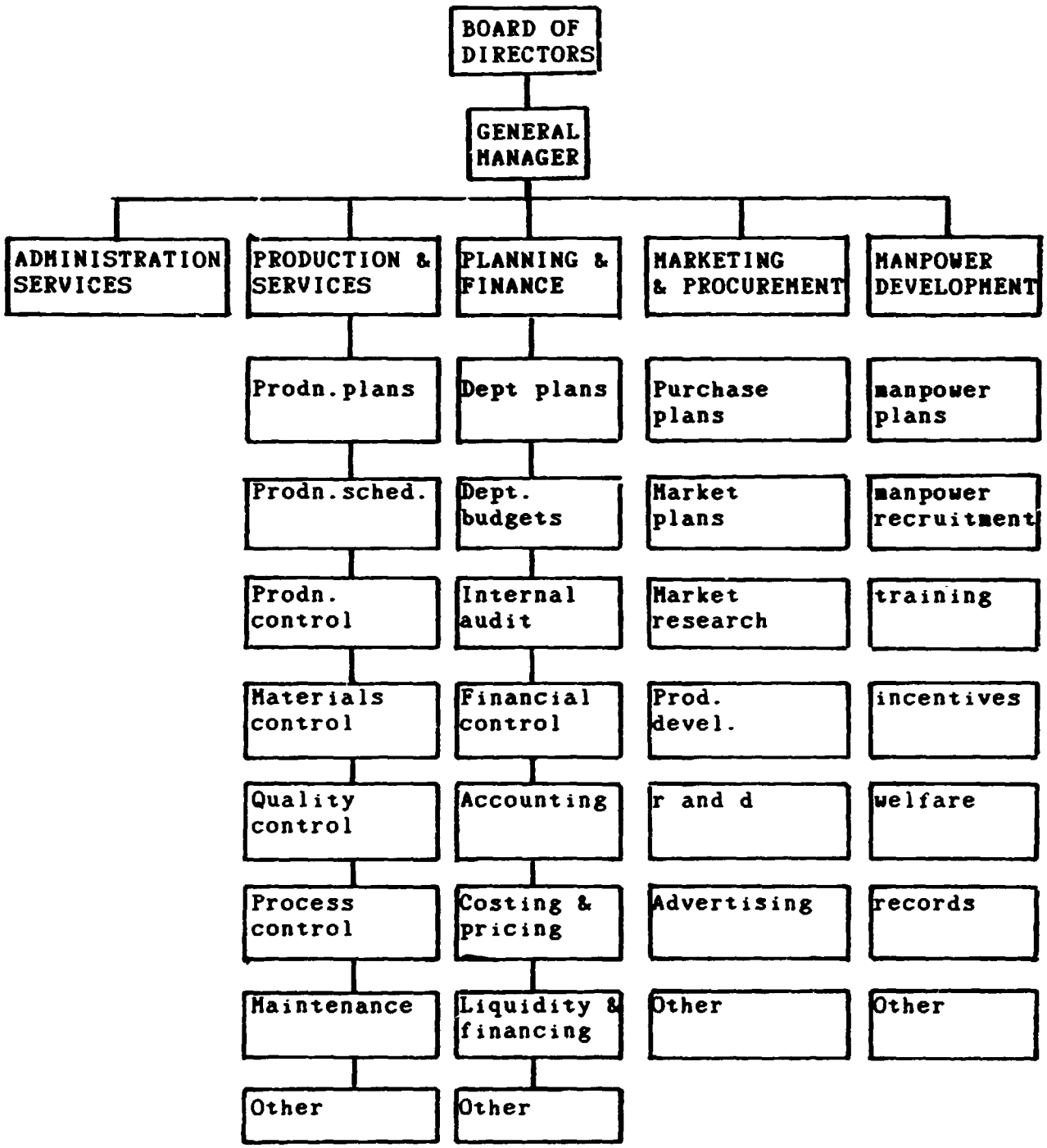
(c) financial

5.2.9 The technical expert should be able to assist in product development as well as production improvement, maintenance and quality control. Hence his knowledge should cover jute agriculture, machinery, processes, products, production control and quality aspects.

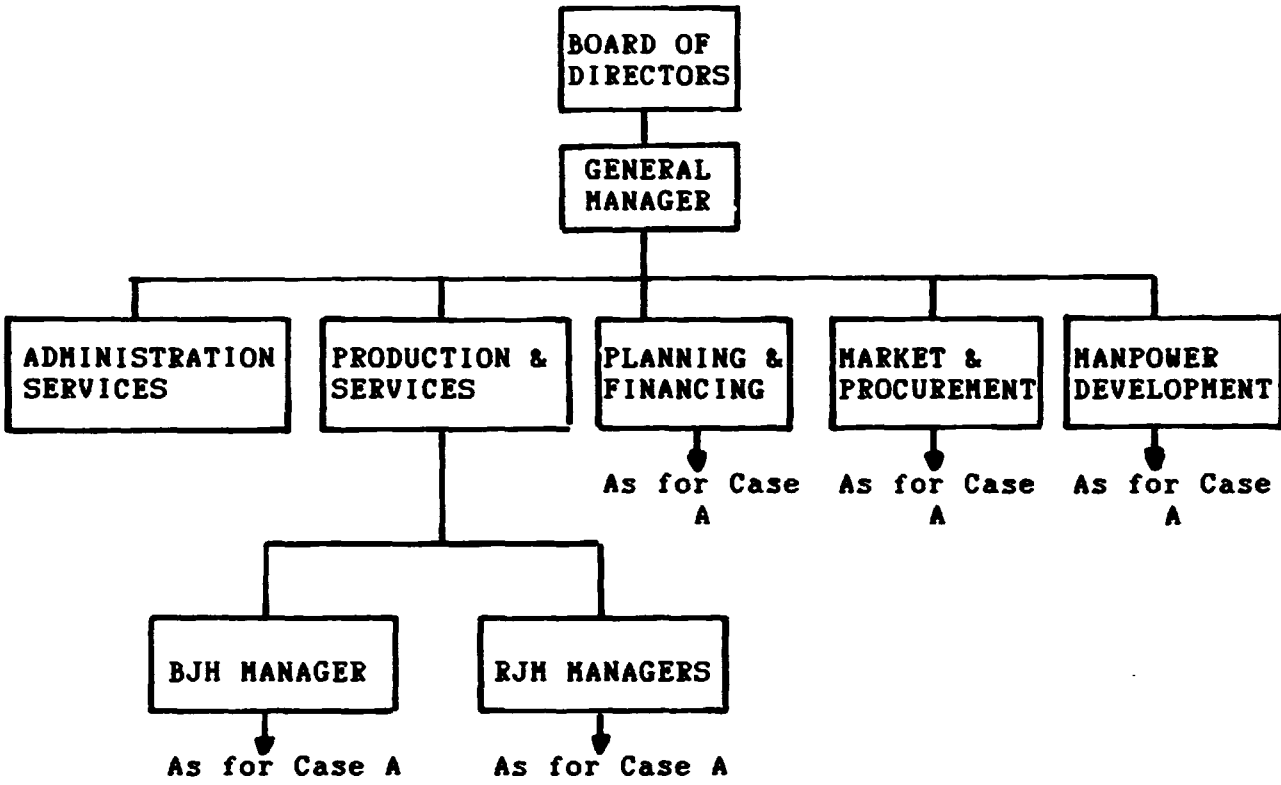
5.2.10 The marketing expert should have extensive experience in international jute products (and textiles in general) marketing. He should have high level contacts in large potential customers and be familiar with modern marketing methods including industrial market research, product differentiation and segmentation.

5.2.11 The financial expert should be familiar with modern methods of financial planning and control and be able to install a computerised system. He should be able to establish proper planning, budgeting and management information systems and supervise an internal audit team. Ideally he should be able to establish a price monitoring system for jute and jute products to minimise the potential for transfer pricing.

ORGANISATION STRUCTURE FOR CASE A - SEPARATE MILLS - EXHIBIT 3



ORGANISATION STRUCTURE FOR CASE B - RATIONALISED - EXHIBIT 4



5.3 STAFF AND LABOUR REQUIREMENTS

5.3.1 STAFF
RAGHUPATI JUTE MILLS

Apart from the Mill Manager, who is a Dundee trained Jute Technologist, the Mill staff has limited experience in Jute Technology. During a seminar held at the Mill it became apparent that courses in Jute Technology are urgently required to assist the overseers in understanding the requirements of day to day operation in the Mill. It is only through building a nucleus of skilled and experienced overseers that the workers can be trained to operate the machinery and gain a basic understanding of the process. It is recommended that courses should be held on a weekly basis to impart the knowledge necessary to the supervisory staff.

5.3.2 LABOUR

While a large proportion of labour required for Jute processing is semi-skilled it was apparent that the workers did not understand what was required of them, resulting in poor quality products being produced. In house training of the workers is therefore a priority.

5.3.3 LABOUR LOADING

It was apparent that the Mill at Raghupati is overmanned and as a guide the following criteria should be used.

(a) Hessian Processing
The total number of workers should be based on 2.5 Workers/Hessian Loom.

(b) Sacking Processing
The total number of workers should be based on 3.4 Workers/Sacking Loom.

In the case of Raghupati with a Loom complement of 110 Hessian and 70 Sacking Looms the total workers per shift should be:-

110 x 2.5	=	275
70 x 3.4	=	238
		513

Total workers including office, Stores Watch and Ward and Processing = 513

5.3.4 BIRATNAGAR

Because the Mill was closed it was not possible to view the plant operation but as in the case of Raghupati the same criteria should be used.

5.3.5 LOOM COMPLEMENT

150 Hessian Looms	@	2.5	=	375
150 Sacking Looms	@	3.4	=	510
				885

885 Workers required for office, Stores Watch and Ward and Processing.

5.4 TRAINING AND DEVELOPMENT

5.4.1 From a review of the two plants at Biratnagar and discussions with Mill management, the Ministry of Industry, the Jute Trading and Development Corporation and other bodies it became apparent that there are a number of problem areas in the industry, some of which have already been mentioned. The lack of documentation both in Kathmandu and the companies should be a cause for concern as should be the general lack of control and monitoring functions. This comment applies to the Ministries, the Banks, the Jute Development Corporation and the companies themselves.

5.4.2 At the factory level much more general care is required to keep the machines and premises clean and in good order. Preventive maintenance, management training programmes should be given in-house as should quality and material control training programmes. It is suggested that external trainers are employed to establish such courses and train local trainers to continue giving periodic programmes with annual updating.

5.4.3 On the financial side there is almost certainly the need for training both in the companies and possibly overseas in financial planning and control. On site training should be given in costing, budgeting and the establishment of management information systems. Training is also needed to computerise the accounting procedure to bring the accounts up to date (in one case they have not produced audited accounts for four years).

5.4.4. The marketing side requires immediate and urgent strengthening and training in areas such as product pricing, export marketing, industrial market research, product development and advertising would all be extremely useful. The procurement side also needs attention so training in purchasing and capital procurement should be given.

5.4.5 A preliminary training programme using external resources (personnel and technical assistance if possible) is summarised in Exhibit 5.

PRELIMINARY TRAINING PROGRAMME FOR 1990/91 EXHIBIT 5

TOPIC	NUMBER OF PARTICIPANTS	DURATION	NUMBER FOREIGN TRAINERS	APPROX. COST
Production Technology	25	2 weeks	1	$12,000
Preventive Maintenance	20	1 week	1	$ 8.000
Quality control	10	1 week	1	$ 8,000
Material control	20	2 weeks	1	$12,000
Financial plan & control	10	1 week	1	$ 8,000
Budgeting & costing	10	2 weeks	1	$12,000
Management information systems.	15	2 weeks	1	$12,000
Preliminary computerised accounts	10	3 weeks	2	$42,000
Product pricing and monitoring	10	1 week	1	$ 8,000
Export marketing	10	2 weeks	1	$12,000
Industrial market research	10	1 week	1	$ 8,000
Product development	10	1 week	1	$ 8,000
TOTAL	-	19 weeks	-	$150,000

(Cost assumes company responsible for local costs. includes two computer systems).

5.5 MANAGEMENT INFORMATION

5.5.1 The consultancy team was concerned at the lack of up to date information available on the month to month movement of goods and the general operating situation, as well as the deficiencies already mentioned.

In an effort to help the situation the team has prepared forms as a means of recording information.

The forms have been presented so that they can be incorporated into the present accounting and recording systems in both Mills. The basis of their success will depend upon accurate measurement of weights and values. An important aspect of the recording will be that each range of products should be calculated separately. i.e. Hessian, Sacking, Twine and Geotextiles under their respective headings.

5.5.2 Operating Statement. This is designed to show management the surplus or deficit in the respective company and each products trading. This should be prepared for each four week period and for the year to date.

This Statement should record the following:-

(a) Tons of cloth and bags delivered and the net sales value. The values expressed in Nepal Rupees.

(b) Sales values must be adjusted for increases or decreases in stocks.

(c) The expenses incurred on raw Jute and other direct materials, labour and overhead expenses are set out in detail.

(d) This statement should show the total income and expenditure in Rupees, percentages and Rupees per ton.

5.5.3 The summary sheet will show all stock movements during the period under review. The stock variations up to the end of the Spinning process are adjusted on the Jute consumed calculation.

5.5.4 Conversion of Raw Jute to Finished Goods Statement shows the cost of Raw materials which is the largest expense in the manufacturing cost, where strict control must be exerted.

5.5.5 The Jute Yarn production statement apart from recording the value of raw materials issued, shows the weight loss in production. The weight and value of any transfers between the individual batch qualities must be entered, so that all these transfers are weighed in the Mill.

Spinning frame efficiencies should be shown on this sheet, with the average count produced in the period.

5.5.6 Direct Labour Summary Sheets should be prepared by the wages department.

5.5.7 This is a summary of individual items of overhead expense.

NOTE. The Statements have been set out for Hessian and Sacking any additional items such as Geotextiles, Twine, etc., can be set out in the same format.

An overall summary sheet could show total tons and value for all operations together with the total surplus or deficit.

These Statements show average values per ton for the different qualities. However it is important that a costing system is eventually introduced which will allow individual product costs to be calculated.

Examples of suitable management information statements as described are included for reference purposes in Appendix 4. These are included for illustrative purposes only.

SECTION VI

FINANCIAL EVALUATION

6.1 SALES ANALYSIS

6.1.1 Exhibit 6 summarises the sales of hessian cloth by the two mills for the years 1984/85 to 1988/89 inclusive. The figures are drawn from the companies published and unaudited accounts with main headings translated by an economist from the Biratnagar Mill.

6.1.2 In the case of Raghupati Jute Mills Ltd., sales volume and revenues are split between India and domestic markets. It can be seen that export sales to India have accounted for 95% of sales by volume in 1984/85 and 1985/86 and the proportion has gradually reduced to 87% in the most recent year. Although the split in sales was not available for the Biratnager Mill, the overall average prices of both mills are quite close and this suggests that both mills have been exporting to India in roughly the same proportion.

6.1.3 For the current year the Indian market will have been closed for much of it. Indeed the Biratnager Mills will have been closed for several months and the years results will depend upon the domestic market absorbing a higher proportion of total output and new export markets being located. Mill management are actively seeking new markets and some positive indications have been achieved but much more has to be done.

6.1.4 Estimates for the current year, 1990/91 and 1991/92 are extremely difficult to make under the present very uncertain circumstances. Nevertheless some estimates have to be made if the financial position of the mills is to be determined. In general the assumptions made are on the cautious side and are summarised in the following paragraphs.

6.1.5 For Raghupati it is assumed that sales volume will be as follows:

(a) For 1989/90 - sales to India at 50% of the 1988/89 level, or approximately 600 tons.

- sales to new export markets will be 10% of 1988/89 exports or approximately 120 tons.

- domestic sales will be increased by 50% to approximately 230 tons.

(b) For 1990/91 - sales to India are assumed to be zero.

- sales to new export markets recover to 1988/89 export levels of 1200 tons.

- domestic sales increase by a further 10% to approximately 250 tons.

(c) For 1991/92 - sales to India are assumed to be zero.

- sales to new export markets are increased to 80% of the 1984/85 level of 2700 tons that is approximately 2200 tons.

- domestic sales are doubled to 500 tons as new product applications are identified.

6.1.6 For Biratnagar the split between sales to India and Nepal was not given. However, it is assumed (on the basis of similar prices) to be about the same as Raghupati. Hence the sales volume assumption are as follows:

(a) For 1988/89 - sales to India of 2000 tons approximately.

- domestic sales of 280 tons.

(b) For 1989/90 - sales to India of 50% of the 1988/89 level or approximately 1000 tons.

- sales to new markets will be 10% of the 1988/89 exports or 200 tons.

- domestic sales will be increased by 50% to approximately 420 tons.

(c) For 1990/91 - sales to India are assumed to be zero.

- sales to new export markets recover to the 1989/90 export level of 2000 tons.

- domestic sales increase by a further 10% to approximately 460 tons.

(d) For 1991/92 - sales to India are assumed to be zero.

- sales to new export markets are increased to 80% of the 1984/85 level of 2700 tons or approximately 2200 tons.

- domestic sales increase a further 10% to approximately 500 tons.

6.1.7 In volume terms, sales can be summarised as follows (based on the preceding assumptions) :

	1988/89	1989/90	1990/91	1991/92
Raghupati:				
Exports to India	1214	600	-	-
Exports to others	-	120	1200	2200
Domestic sales	176	230	250	500
Total Sales	1390	950	1450	2700
Biratnagar:				
Exports to India	2000	1000	-	-
Exports to others	-	200	2000	2200
Domestic Sales	280	420	460	500
Total Sales	2280	1620	2460	2700
Total:				
Exports to India	3214	1600	-	-
Exports to others	-	320	3200	4400
Domestic Sales	456	650	710	1000
Total Sales	3670	2570	3910	5400

6.1.8 Selling price assumption are as follows:

(a) For 1989/90 - price per ton for exports to India are 17% higher than 1988/89 (average of last two years increase) or 21,200 per ton.

- price per ton for non Indian exports to be increased by 17% also to R 21,200 per ton.

- domestic prices to be increased by 16% (the last two year's average increase) to R 25,100 per ton.

(b) For 1990/91 - the price per ton for non-Indian exports to be further increased by 17% and an additional 25% to allow for higher international prices compared with India. A discount of 30% is then applied to aid market penetration to bring the price to R21,700 per ton.

- domestic prices are assumed to increase a further 16% to R 29,100 per ton.

(c) For 1991/92 - export prices are assumed to be increased by a further 17% and an additional 25% to allow for higher international prices. The same discount of 30% is applied to assist market penetration. The price assumed becomes R 22,200 per ton.

- domestic prices are assumed to increase by a further 16% to R 33,800 per ton.

6.1.9 Selling price assumptions are summarized below:

	1988/89	1989/90	1990/91	1991/92
Indian exports (000R)	18.1	21.2	-	-
Other " "	-	21.2	21.7	22.2
Domestic "	21.6	25.1	29.1	33.8

Note, that the 1991/92 average price is approximately R 24,500 per MT compared with an estimate based on market factors of R 26,700 and is therefore a cautious estimate.

6.1.10 Using the volume data in paragraph 6.1.7 and the price data in paragraph 6.1.8 the value of sales is projected as follows:

(mn R)	1989/90	1990/91	1991/92
<u>Raghupati</u>			
India sales	12.7	-	-
Other exports	2.5	26.0	48.8
Domestic	5.8	7.3	16.9
Total	21.0	33.3	65.7

Biratnagar			
Indian sales	21.2	-	-
Other exports	4.2	43.4	48.8
Domestic	10.5	13.4	16.9
Total	35.9	56.8	65.7

6.1.11 Exhibit 7 summarises the sales of sacking by the two mills for the years 1984/85 to 1988/89 inclusive. The figures are also drawn from the companies published and unaudited accounts and were translated into English in Biratnagar. It is felt that the Biratnagar 1987/88 figure might be a translation error and, therefore, the figures for that year are treated with caution.

6.1.12 As for hessian the figures for Raghupati Mills are split between India and the domestic market. For sacking the proportion of sales to India in volume terms has fallen from 73% in 1984/85 to 37% in 1988/89 with considerable fluctuations in between. As Biratnagar Mills average prices have been approximately the same as the Raghupati Mills (except for the year 1987/88 as already mentioned), it can be assumed that the proportion of sales going to India is approximately the same for both mills.

6.1.13 For 1989/90 the Indian market will have been closed for a considerable part of the year. However, the domestic market will increase sharply with the implementation of new cement plants and sugar mills. By 1991/2 the mills should be able to achieve the results of 1984/5 and 1985/6 - that is their past best performance.

6.1.14 For Raghupati it is assumed that sales volume will be as follows:

(a) For 1989/90 - sales to India at 50% the 1988/89 level, or approximately 500 tons.

- domestic sales increase by 10% over 1988/89 to 1900 tons approximately.

(b) For 1990/91 - sales to India are assumed to be zero.

- domestic sales are assumed to account for all production of 2.800 tons (the 1988/89 level)

(c) For 1991/92 - sales to India are assumed to be zero.

- domestic sales are assumed to reach the historic maximum level of approximately 3,000 tons.

6.1.15 In the case of Biratnagar Jute Mills the assumptions are as follows:

(a) For 1988/89 - Sales to India of 2,200 tons

- Domestic sales of 3,778 tons.

(b) For 1989/90 - Sales to India at 50% of the 1988/89 level of 1,100 tons

- Domestic sales increase by 10% to 4,100 tons approximately.

(c) For 1990/91 - Sales to India are assumed to be zero

- Domestic sales are assumed to account for all production at the 1988/89 level of 6,000 tons approximately.

(d) For 1991/92 - Sales to India are assumed to be zero

- Domestic sales are assumed to reach the historic maximum level of approximately 6,800 tons.

6.1.16 In volume terms sales of sacking can be summarised below:-

		1988/89	1989/90	1990/91	1991/92
Raghupati:	Indian sales	1027	500	-	-
	Domestic sales	1774	1900	2800	3000
	Total	2801	2400	2800	3000
Biratnagar:	Indian sales	2200	1100	-	-
	Domestic sales	3778	4100	6000	6800
	Total	5978	5200	6000	6800
TOTAL:	Indian sales	3227	1600	-	-
	Domestic sales	5552	6000	8800	9800
	Total	8779	7600	8800	9800

6.1.17 Selling price assumptions are as follows:

(a) For 1989/90 price per ton for Indian sales is 16% higher than 1988/89 prices (average of last two years) or R 15,200 per ton.

(b) For 1989/90, domestic price per ton is 13% above the 1988/89 level (based on the last two years) at R 18,200 per ton

(c) For 1990/91 a further 13% is taken into account for domestic sales to reach R 20,600 per ton.

(d) For 1991/92 a further 13% is applied to reach R23,200 per ton.

6.1.18 Applying the volume figures in paragraph 6.1.16 and the above price assumptions, gives sales value estimates as follows:

(mn R)		1989/90	1990/91	1991/92
Raghupati:	Indian	7.6	-	-
	Domestic	34.6	57.7	69.6
	Total	42.2	57.7	69.6
Biratnagar:	Indian	16.7	-	-
	Domestic	74.6	123.6	157.8
	Total	91.3	123.6	157.8
TOTAL:	Indian	24.3	-	-
	Domestic	109.2	181.3	227.4
	Total	133.5	181.3	227.4

6.1.19 Exhibit 8 gives the historical sales of twine from 1984/85 to 1988/89, with the figures drawn from the mill accounts. A similar logic is used as for sacking for volume projections as follows:

(a) Raghupati 1989/90 Indian sales of 60 tons.

(b) ~ ~ Domestic sales of 110 tons.

(c) ~ 1990/91 ~ ~ ~ 220 ~

(d) ~ 1991/92 ~ ~ ~ 340 ~

(e) Biratnagar 1989/90 Indian sales of 90 tons.

(f) ~ ~ Domestic sales of 160 tons.

(g) ~ 1990/91 ~ ~ ~ 340 ~

(h) ~ 1991/92 Domestic sales of 550 tons.

6.1.20 Price assumptions for twine are as follows:

(a) Indian sales at 15% higher than 1988/89 price or R 13,600 per ton.

(b) Domestic prices increase at 17% per annum (matching the last two years increases) giving:

1989/90 R 16,800 per ton

1990/91 R 19,700 ~ ~

1991/92 R 23,100 ~ ~

6.1.21 Using the volume and price assumptions given, sales revenue projections are as follows:

(mn R)		1989/90	1990/91	1991/92
Raghupati:	Indian Sales	0.8	-	-
	Domestic Sales	1.8	4.3	7.8
	Total	2.6	4.3	7.8
Biratnagar:	Indian Sales	1.2	-	-
	Domestic Sales	2.7	6.7	12.7
	Total	3.9	6.7	12.7
TOTAL:	Indian Sales	2.0	-	-
	Domestic Sales	4.5	11.0	20.5
	Total	6.5	11.0	20.5

6.1.22 Exhibit 9 completes the sales analysis and summarises the projected revenue figures extracted from Exhibits 6,7 and 8. Miscellaneous revenue (largely sale of waste) is taken at the 1988/89 level for 1989/90 and 1990/91 and increased in line with the mills' volume increases for 1991/92.

6.1.23 In terms of annual growth rates the revenue increases between 1984/85 and 1991/92 are as follows:

(a) Hessian approximately 4% per annum.

(b) Sacks ~ 11% ~ ~

(c) Twine ~ 9% ~ ~

HESSIAN SALES ANALYSIS — EXHIBIT 6

	84/85	85/86	86/87	87/38	88/89	89/90	90/91	91/92
Raghupati Sales								
Tons to India/Exp	2568	2452	2521	1977	1214	720	1200	2200
Tons to Nepal	134	137	172	194	176	230	250	500
Total	2702	2589	2693	2171	1390	950	1450	2700
Mn R to India/Exp	46.0	32.4	34.0	32.0	22.0	15.2	26.0	48.8
Mn R to Nepal	2.7	2.4	2.8	3.5	3.8	5.8	7.3	16.9
Total	48.7	34.8	36.8	35.5	25.8	21.0	33.3	65.7
Price per ton(000)								
India & Export	17.9	13.2	13.5	16.2	18.1	21.2	21.7	22.2
Nepal	20.1	17.5	16.3	18.0	21.6	25.1	29.1	33.8
Total Price	18.0	13.4	13.7	16.4	18.6	22.1	23.0	24.3
Biratnagar Sales								
Tons total	2710	2358	2945	2779	2280	1620	2460	2700
Mn R total	49.3	33.1	39.8	44.0	42.7	35.9	56.8	65.7
Price per ton	18.2	14.0	13.5	15.8	18.7	22.2	23.0	24.3
Total Sales								
Total tons	5412	4947	5638	4950	3670	2570	3910	5400
Total mn R	98.0	67.9	76.6	79.5	68.5	56.9	90.1	131.4
Average prices	18.1	13.7	13.6	16.1	18.7	22.1	23.0	24.3
Difference Indian: Nepal prices %	12%	33%	21%	11%	19%	-	-	-
Difference RJM:BJM prices %	99%	96%	101%	104%	99%	-	-	-
% change in overall prices.		(24)%	(1)%	18%	16%	18%	4%	6%

SACKING SALES ANALYSIS — EXHIBIT 7

	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92
Raghupati Sales:								
Tons to India	1996	1244	690	1595	1027	500	-	-
~ ~ Nepal	747	1790	1452	1442	1774	1900	2800	3000
~ Total	2743	3034	2142	3037	2801	2400	2800	3000
Mn R to India	25.6	15.0	6.9	17.0	13.5	7.6	-	-
~ ~ ~ Nepal	11.5	23.0	18.6	19.0	28.6	34.6	57.7	69.6
~ ~ Total	37.1	38.0	25.5	36.0	42.1	42.2	57.7	69.6
Price per ton								
India	12.8	12.1	10.0	10.7	13.1	15.2	-	-
Nepal	15.4	12.8	12.8	13.2	16.1	18.2	20.6	23.2
Price per ton	13.5	12.5	11.9	11.9	15.0	17.6	20.6	23.2
Biratnagar Sales								
Tons total	4525	6772	6291	7744	5978	5200	6000	6800
Mn R total	68.7	82.8	71.7	65.3	90.9	91.3	123.6	157.8
Price per ton	15.2	12.2	11.4	8.4	15.2	17.6	20.6	23.2
Total Sales								
Total tons	7268	9806	8433	10781	8779	7600	8800	9800
Total Mn R	105.8	120.8	97.2	101.2	133.0	133.5	181.3	227.4
Average prices	14.6	12.3	11.5	9.4	15.1	17.6	20.6	23.2
Difference Indian: Nepal prices %	20%	6%	28%	23%	23%	-	-	-
Difference RJM:BJM prices %	89%	102%	103%	127%	99%	-	-	-
% change in overall prices.		(16)%	(7)%	(18)%	61%	-	-	-

TWINE SALES ANALYSIS — EXHIBIT 8

	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92
Raghupati Sales								
Tons to India	218	183	256	219	127	60	-	-
Tons to Nepal	72	83	84	87	97	110	220	340
Tons Total	290	266	340	306	224	170	220	340
Mn R To India	3.2	1.8	2.3	2.3	1.5	0.8	-	-
Mn R to Nepal	1.1	0.9	0.9	1.0	1.4	1.8	4.3	7.8
~ ~ Total	4.3	2.7	3.2	3.3	2.9	2.6	4.3	7.8
Price per ton								
India	14.7	9.8	9.0	10.5	11.8	13.6	-	-
Nepal	15.3	10.8	10.7	11.5	14.4	16.8	19.7	23.1
Price per ton	14.8	10.2	9.4	10.8	12.9	15.3	19.7	23.1
Biratnagar Sales								
Tons total	473	273	554	490	337	250	340	550
Mn R total	7.2	2.7	4.7	5.0	4.4	3.9	6.7	12.7
Price per ton	15.2	9.9	8.5	10.2	13.1	15.3	19.7	23.1
TOTAL SALES								
Total tons	763	539	894	796	561	420	560	890
~ Mn R	11.5	5.4	7.9	8.3	7.3	6.5	11.0	20.5
Average prices	15.1	10.0	8.8	10.4	13.0	15.3	19.7	23.1
Difference Indian: Nepal price %	4%	10%	19%	10%	22%	-	-	-
Difference RJM:BJM price %	97%	103%	111%	106%	98%	-	-	-
% change in overall price		(34)%	(12)%	18%	25%	-	-	-

SALES SUMMARY — EXHIBIT 9

	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92
Raghupati Sales								
Hessian mn R	48.7	34.8	36.8	35.5	25.8	21.0	33.3	65.7
Sacking mn R	37.1	38.0	25.5	36.0	42.1	42.2	57.7	69.6
Twine mn R	4.3	2.7	3.2	3.3	2.9	2.6	4.3	7.8
Miscellaneous mn R	0.1	0.2	0.2	1.1	0.3	0.3	0.3	0.4
TOTAL mn R	90.2	75.7	65.7	75.9	71.1	66.1	95.6	143.5
% change		(16)%	(13)%	16%	(6)%	(7)%	45%	50%
Biratnagar								
Hessian mn R	49.3	33.1	39.8	44.0	42.7	35.9	56.8	65.7
Sacking mn R	68.7	82.8	71.7	65.3	90.9	91.3	123.6	157.8
Twine mn R	7.2	2.7	4.7	5.0	4.4	3.9	6.7	12.7
Miscellaneous mn R	0.3	0.5	N	0.4	0.2	0.2	0.2	0.3
TOTAL mn R	125.5	119.1	116.2	114.7	138.2	131.3	187.3	236.5
% change		(5)%	(2)%	(1)%	20%	(5)%	43%	26%
TOTAL								
Hessian mn R	98.0	67.9	76.6	79.5	68.5	56.9	90.1	131.4
Sacking mn R	105.8	120.8	97.2	101.3	133.0	133.5	181.3	227.4
Twine mn R	11.5	5.4	7.9	8.3	7.3	6.5	11.0	20.5
Miscellaneous mn R	0.4	0.7	0.2	1.5	0.5	0.5	0.5	0.7
TOTAL mn R	215.7	194.8	181.9	190.6	209.3	197.4	282.9	380.0
% change		(10)%	(7)%	5%	10%	(6)%	43%	34%

6.2 PROFIT AND LOSS ACCOUNT

6.2.1 Exhibit 10 summarises the historical profit and loss account of the Raghupati Jute Mill while Exhibit 11 gives the same information for Biratnagar Jute Mills Limited. Both mills have made losses after interest charges for all years 1984/85 to 1988/89. According to the accounts data Biratnagar Mill made a gross profit before interest and depreciation in 1988/89.

6.2.2 Jute constitutes the largest cost element for both mills. Jute prices appear to have been very variable and Biratnagar Mill management quoted the following (figures in brackets are from another mill document, but in general the figures are close)

1984/85	R	10,200	per ton	(R9,800)
1985/86	R	4,600	~ ~	(R4,500)
1986/87	R	4,000	~ ~	(R4,000)
1987/88	R	5,100	~ ~	(R4,800)
1988/89	R	6,900	~ ~	(7,000)

During discussions a figure of R8,750 per ton was mentioned for 1989. The differences may be to some extent due to timing as jute becomes progressively more expensive after the harvest.

6.2.3 If the jute expenses are divided by the physical volume of sales and excluding 1984/85, the following costs per ton of sales are obtained:

R per ton Sales	Raghupati	Biratnagar	Average
1985/86	4700	4500	4600
1986/87	4900	4200	4600
1987/88	4500	4900	4700
1988/89	7900	8600	8300

6.2.4 Comparing the data given in paragraph 6.2.2 with the above, suggests that market prices and mill costs do not move together as they should. Adjustments for stock movements make the figures a little more consistent but the differences are still considerable. The increase between 1987/88 and 1988/89 in all cases is very large.

6.2.5 Company management need to take control of the jute purchasing and eliminate the agents to some extent. However, additional funds will be needed to finance the extra stock. Agent's margins are said to be 20% and this figure may very well increase as the year goes by. It is assumed here that the agents will be by-passed with a resulting saving of 20% in the cost per ton of sales. For 1989/90 the costs of the previous year will probably prevail because the mills are working at less than capacity (Biratnagar has been closed for some months) and the Indian market is not open.

6.2.6 The cost per ton assumptions are summarised as follows:

1989/90	R 8300 per ton	
1990/91	R 6500 ~ ~	(20% saving)
1991/92	R 7300 ~ ~	(10% inflation).

6.2.7 Batching oil costs are assumed to be constant at R3.5 million for Biratnagar and R1.6 million for Raghupati. Stores and spares costs are assumed to increase at 10% per annum for both mills. The same assumption is applied to electricity costs for 1989/90 and 1990/91 with an additional volume increase in 1991/92. Wages and salaries are assumed to stay constant for 1989/90 and 1990/91 and then increase with the volume in 1991/92. Additional training costs and technical assistance are assumed to be financed by grants. Maintenance expenditure has been low in the past and if a standard percent of 7% of gross fixed assets were applied the Biratnagar annual cost would be R 3.3 million (50% higher than 1988/89). The same proportion is used for Raghupati Mill. Other costs are included at their historical high levels in the case of administration, insurance and gratuities. Marketing costs for penetrating non-Indian export markets will be high, for visits, trade fairs, sales commission and advertising and a figure of 5% of sales revenue is included for this.

6.2.8 Under the circumstances where aggressive export marketing is successful and domestic, price increases are obtained and domestic jute prices are held down by eliminating the agents, both mills could return to profitability. However, the present level of debt and its cost is far too great a burden. Hence exhibits 10 and 11 show what the mills can afford to pay on the basis of an interest cover ratio of 3:1. That is the lowest that should be acceptable. On this basis by 1991/92 the mills could pay a combined interest of R31.0 million.

6.2.9 Under the circumstances where the two mills are rationalised with one management some savings in salaries,overheads and marketing may be achievable. If for example these savings amounted to R9.0 million per annum, the interest payment provision could be increased to R34.0 million by 1991/92.

BANGLADESH — PROFIT AND LOSS ACCOUNT — EXHIBIT 10

(MILLION RUPEES)

	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	GROWTH	MAX	MIN	AVG
137.SALES VOLUME (TONS)	5735	5869	5175	5514	4415	3528	4478	6840	1	6840	3528	5275
138.AVERAGE PRICE (000)	15.75	12.85	12.78	12.9o	16.10	18.78	21.39	23.76	6.1	23.8	12.7	16.4
139.GROSS SALES REVENUE	90.2	75.7	65.7	75.9	71.1	66.1	95.8	143.5	6.9	143.5	65.7	85.5
141.DISCOUNTS												
142.SALES TAXES & DUTIES												
143.MISCELLANEOUS REVENUE												
144.ADJUSTMENT												
146.NET SALES REVENUE	90.2	75.7	65.7	75.9	71.1	66.1	95.8	143.5	6.9	143.5	65.7	85.5
148.JUTE EXPENSES	67.9	27.7	25.8	24.7	35.8	29.2	29.1	44.1	-6.8	67.9	24.7	35.4
149.BATCHING OIL	1.6	1.2	1.e	1.e	1.4	1.6	1.6	1.8	0.0	1.6	1.2	1.5
150.MAINTENANCE	0.9	1.7	0.6	0.5	0.9	1.5	1.5	1.5	7.6	1.7	0.5	1.1
151.ELECTRICITY	5.7	5.5	4.6	4.5	4.8	5.3	5.8	6.6	6.1	0.8	4.5	5.8
152.WAGES & EXPENSES	24.1	25.5	22.3	25.5	24.6	24.4	24.4	32.9	4.5	32.9	22.3	25.4
153.STOCK ADJUSTMENTS	-15.9	14.4	-14.e	14.2	-5.8					14.4	-15.9	-1.4
154.STORES AND SPARES	4.8	e.1	5.5	4.5	5.2	5.e	e.2	e.8	5.1	6.8	4.5	5.e
155.ADJUSTMENT												
157.COST OF PRODUCTION	89.1	93.1	45.5	79.9	69.e	e7.e	e8.e	95.5	1.8	95.9	45.5	72.8
159.GROSS MARGIN	1.1	-e.4	20.2	2.4	4.5	-1.5	27.8	48.8	71.5	48.8	-e.e	12.7
1e1.SALARIES	3.7	4.2	4.1	3.7	3.5	3.5	3.5	4.7	3.5	e.1	3.5	4.2
1ee.MARKETING COSTS						3.2	4.8	7.2		7.2	3.2	5..
1e7.ADMIN EXPENSES	1.1	1.e	1.2	2.9	2.8	1.e	1.e	1.6	5.5	1.6	2.8	1..
1e4.INSURANCE	1.2	2.5	2.1	2.e	2.9	1.2	1.2	1.2	0.0	1.2	2.1	2.4
1e5.SEMINARIES			1.7	1.e	1.4	1.e	1.e	1.e		1.e	1.4	1.5
1ee.ROYALTIES												
1e7.MANAGEMENT FEES												
1e8.OTHER EXPENSES												
1e9.ADJUSTMENT												
170.INT.MANAGE FEES												
172.TOTAL EXPENSES	5.8	e.4	9.1	e.4	e.7	11.8	12.5	1e.1	15.7	1e.1	5.8	9.2
174.TOTAL COSTS	94.9	88.5	54.e	81.9	72.9	76.e	81.1	111.e	2.3	111.e	54.e	81.8
17e.CHECK COST	94.9	98.5	54.e	81.9	72.9	76.e	81.1	111.e	2.3	111.e	54.e	81.8
177.NON TRADING PROFIT												
178.PROFIT BEFORE INT.	-4.7	-12.8	11.1	-e.8	-1.8	-12.5	14.5	31.9		31.9	-12.8	3.6
179.INTEREST CHARGES	11.1	16.4	19.4	19.2	19.1		5.8	18.8	-1.5	19.4	5.8	14.7
181.PROFIT BEFORE DEP &	-15.8	-29.2	-8.3	-19.2	-20.9	-12.5	8.5	21.9		21.9	-29.2	-10.1
183.ANNUAL DEPRECIATION	1.5	1.4	1.3	1.2	1.1	1.1	1.1	1.1	-4.2	1.5	1.1	1.2
185.PROFIT BEFORE TAX	-17.3	-30.6	-9.6	-2e.4	-22.8	-13.6	6.4	20.8		20.8	-2e.e	-11.3
187.ANNUAL TAXATION												
189.PROFIT AFTER TAX	-17.3	-30.e	-9.e	-2e.4	-22.8	-13.e	6.4	20.8		20.8	-2e.e	-11.3
191.ACC. LOSS EX. DEP.	-15.8	-45.8	-55.7	-78.9	-99.4	-111.9	-105.4	-88.5		-11.e	-11..	-75.4

BIRATNAGAR — PROFIT AND LOSS ACCOUNT — EXHIBIT II

(MILLION RUPEES)

	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	GRTH%	MAX	MIN	AVG
137.SALES VOLUME (TONS)	7706	9483	9798	11013	8595	7078	8988	10052	4	11013	7078	9054
138.AVERAGE PRICE (000)	16.25	12.67	11.87	10.41	16.00	18.57	21.28	23.53	5.4	23.5	10.4	16.3
139.GROSS SALES REVENUE	125.5	119.1	116.2	114.7	138.2	131.3	187.3	236.5	9.5	236.5	114.7	146.1
141.DISCOUNTS												
142.SALES TAXES & DUTIES												
143.MISCELLANEOUS REVENUE												
144.ADJUSTMENT												
146.NET SALES REVENUE	125.5	119.1	116.2	114.7	138.2	131.3	187.3	236.5	9.5	236.5	114.7	146.1
148.JUTE EXPENSES	111.1	42.6	41.4	53.8	73.6	58.7	57.2	73.4	-5.7	111.1	41.4	64.2
149.BATCHING OIL	3.4	3.1	3.8	3.5	3.3	3.5	3.5	3.5	0.4	3.5	3.0	3.4
149.MAINTENANCE	0.5	1.1	1.3	1.0	2.2	3.3	3.7	3.1	22.4	3.3	0.5	2.0
151.ELECTRICITY	7.1	11.7	7.7	7.2	8.1	9.8	9.9	12.4	8.3	12.4	7.1	9.3
152.SALS. WAGES & EXPS	37.8	37.7	42.4	46.7	46.6	46.6	46.6	55.8	4.9	55.8	37.7	44.8
153.STOCK ADJUSTMENTS	-36.6	10.9	3.9	11.6	-27.2					11.6	-36.6	-7.6
154.STORES AND SPARES	10.4	10.4	9.0	9.9	9.6	10.8	11.9	13.8	3.2	13.8	9.0	10.7
155.ADJUSTMENT												
157.COST OF PRODUCTION	133.8	117.5	109.7	134.8	116.5	131.9	132.4	158.6	3.7	158.6	109.7	129.1
159.GROSS MARGIN	-8.5	1.6	6.5	-19.7	21.7	-0.6	54.9	77.9		77.9	-19.7	17.2
161.SALARIES												
166.MARKETING COSTS						8.6	9.4	11.8		11.8	8.6	9.9
167.ADMINISTRATION	1.3	1.5	1.5	1.3	1.1	1.8	1.5	1.8	6.8	1.8	1.1	1.5
164.INSURANCE	1.2	1.6	0.6	0.6	1.0	1.0	1.0	1.0	4.1	1.6	0.6	1.0
165.GRATUITIES												
166.ROYALTIES												
167.MANAGEMENT FEES												
168.OTHER EXPENSES												
169.ADJUSTMENT												
170.TOT.MAN/ROY FEES												
172.TOTAL EXPENSES	2.4	3.4	2.1	1.9	2.1	10.0	12.8	15.2	30.2	15.2	1.9	6.3
174.TOTAL COSTS	134.4	120.9	111.8	135.9	118.6	141.9	145.2	173.8	3.7	173.8	111.8	135.3
176.CHECK COST	134.4	120.9	111.8	135.9	118.6	141.9	145.2	173.8	3.7	173.8	111.8	135.3
177.NON TRADING PROFIT												
178.PROFIT BEFORE INT.	-8.9	-1.8	4.4	-21.2	19.6	-10.6	42.1	62.7		62.7	-21.2	18.3
179.INTEREST CHARGES	8.5	13.6	17.2	19.6	21.9		14.8	21.8	12.8	21.9	8.5	16.5
181.PROFIT BEFORE DEP'N	-17.4	-15.4	-12.8	-40.8	-2.3	-10.6	28.1	41.7		41.7	-40.8	-0.7
183.ANNUAL DEPRECIATION	1.3	1.3	1.4	1.4	1.6	1.6	1.6	1.6	4.2	1.6	1.3	1.5
185.PROFIT BEFORE TAX	-18.6	-16.6	-14.2	-42.2	-3.9	-12.2	26.5	40.1		40.1	-42.2	-2.2
187.ANNUAL TAXATION												
189.PROFIT AFTER TAX	-18.6	-16.6	-14.2	-42.2	-3.9	-12.2	26.5	40.1		40.1	-42.2	-2.2
191.ACC. LOSS EX. DEP.	-17.4	-33.8	-45.6	-88.4	-88.7	-88.3	-71.2	-29.5		-17.4	-88.7	-51.7

6.3 BALANCE SHEET ANALYSIS

6.3.1 Exhibit 12 shows the assets of Raghupati Jute Mills Limited for the period 1984/85 to 1988/89 inclusive, with projections to 1991/92. Gross fixed assets have been drawn from the notes to the 1988/89 draft accounts, while the net fixed assets were given in the balance sheet. Cumulative depreciation was calculated by differencing and then estimated for prior years by deducting the annual depreciation figures found in the profit and loss account.

6.3.2 The constituent elements of gross fixed assets for past years are, therefore, estimates. The projections include the capital expenditure estimates detailed in section 6.5. For 1991/92 depreciation rates used are as follows:-

- buildings at 6%
- machinery at 10%
- other at 15% (mainly furniture)

(These rates are quoted in the company accounts).

6.3.3 Current asset control has been extremely weak in the past and this is discussed in more detail in the next section dealing with financial ratios. Meanwhile, it may be noted that if the suggestions made regarding control over receivables and finished stocks are adopted then cash released would be considerable. Indeed it would provide enough funds to finance the maximum R 30.0 million needed by the mill to finance the jute purchases and take control over the jute supply market. Exhibit 12 shows that the investment in current assets can be reduced to below the 1988/89 levels, even when funding all the jute purchases and with a much larger throughput, if strong control mechanisms are put into place.

6.3.4 As an indication of the potential for releasing cash using the 1988/89 figures taking raw material stock at an average of 4 months, finished stocks at two months and receivables at one month, the 1988/89 current asset investment would be as follows:-

(a) materials	R 12.0	million
(b) finished goods	R 6.0	~
(c) receivables	R 12.0	~
(d) cash	R 1.0	~
TOTAL	R 31.0	~

6.3.5 The current assets in 1988/89 were R 71.7 million so with tight control over stocks and receivables, the potential for generating cash is R40 million. This potential must be viewed in the light of possible obsolete stocks and bad debts which could reduce the figure. Even so, the potential is enormous but strong financial control is needed.

6.3.6 Exhibit 13 represents the liabilities of Raghupati Mills. This had to be reconstructed because figures for the accumulated profit and loss account were not included in the translation of the accounts. The figures included in Exhibit 13 for accumulated losses have been determined by first equating total liabilities to total assets and deducting issued and paid up capital, capital and general reserves and current liabilities. While the annual figures do not correspond with the accumulated losses shown in Exhibit 10 the difference between 1988/89 and 1984/85 is R 73.6 million which compares with the corresponding difference in Exhibit 13 of R 78.6 million, which is reasonably close given the degree of estimation involved.

6.3.7 It is clear that the company's losses have long since wiped out its' equity and the company's net worth has been negative since before 1984/85. The company is technically bankrupt and if placed into receivership, its shareholders would recover nothing from their investment. In other words the shares in the company will only have a positive value if steps are taken by government and the banks to rehabilitate the plant. This means in turn that if any shareholders were to resist concrete proposals to correct the company's situation, the liquidation alternative would have to be adopted. It is, therefore, assumed here that all shareholders, whose shares currently have no value, will agree to any sensible positive suggestions.

6.3.8 The second point is that the issued and paid up equity of the business is very low compared with the fixed assets. It would normally be prudent to finance 80% of the gross fixed assets by ordinary share capital. This would require an injection of approximately R 90 million in 1990/91. Of this, R 65 million may be provided by the Italian Government grant (or soft loan) leaving a net R 25 million to be injected. There is little chance that private shareholders would want to increase their stake and their holdings would be diluted considerably. The alternative of first liquidating the company would give the existing shareholders no return, so ideally their existing share should be valued at a large negotiated discount on par value.

6.3.9 As far as the accumulated losses are concerned, these will disappear within six or seven years if the projected profitability for 1991/92 is achieved. However, the company should be put into a positive net worth position by the end of 1990/91 by writing off R 36.0 million of the accumulated losses. This gives a net worth of R 0.6 million.

6.3.10 The outstanding dividend payable should be cancelled and bills payable should be gradually reduced to R 2.0 million. An interest moratorium should be accepted by the banks over the period 1989/90 to 1990/91 and existing loans should be replaced by a long term loan with a moderate interest rate. Overdraft should be secured on 80% of the current assets or R 32.0 million and any interest rate in excess of 15% would be counter productive. The balance of the finance needed in 1991/92 would be met by a long term loan of R 54.6 million.

6.3.11 The preceding suggestion means that part of the existing liabilities to the banks in terms of accrued interest and penalty charges be written off as bad debts. According to the information given Banks exposure in Raghupati is approximately R 70.0 million principle and R 105 million accrued interest and penalties. Hence it is being suggested that this be converted to R32.0 million overdraft and R 54.6 million long term loan or a total of R 86.6 million. That requires a write down by the banks of about half the total exposure which anyway consists largely of exorbitant interest charges and penalties. The alternative for the banks is voluntary liquidation and it is unlikely that the banks would recover more than R 60 million and quite possibly much less.

6.3.12 For easy reference the suggestions are summarised below:

(a) capital expenditure of R 79.1 million.

(b) reduction of current assets to release more than R 40 million.

(c) cancel the outstanding dividend liability.

(d) government to inject the R65 Mn Italian Government grant/soft loan into the company as equity capital.

(e) Government to invest a further R25 million into the company as cash to increase the equity capital further.

(f) write off R36 million of the accumulated losses.

(g) reduce sundry creditors.

(h) Banks to give an overdraft of R32.0 million secured against current assets with an interest rate of a maximum of 15%.

(i) Banks to provide a long term (10 year) loan of R54.6 million at an interest rate of not more than 15%.

(j) Banks to write off R88 million of the existing exposure to the company,consisting largely of unpaid interest charges and penalties.

6.3.13 Exhibit 14 summarises the assets of the Biratnagar Jute Mill. The net fixed assets in 1988/9 are higher than 1984/85 despite depreciation over the period of R 6.6 million. Yet the gross fixed asset figures extracted from the 1988/89 accounts appear to be lower than the 1984/85 figures. As no revaluations are known to have occurred this contradiction is most likely due to translation errors. If the net fixed asset figures are considered to be correct then presumably some replacement expenditure has occurred over the past five years of possibly R 6.0 to R 7.0 million. Whether or not this is the case, much of the machinery is old and a replacement programme constituting 10% per annum of its gross value would be prudent. This gives the asset figures shown for the years 1989/90 to 1991/92 inclusive. Gross fixed asset figures for 1985/6 to 1987/8 are interpolated. It is suggested that a detailed feasibility study into the re-equipping and modernisation needs of the mill be carried out by an independent consultant, rather than a potential machinery supplier.

6.3.14 Current asset levels are estimated in accordance with the calculations shown in the section of working capital for 1991/92. Between 1988/89 and 1991/92 the estimates are made on a pro-rata basis. Similar assumptions are made for Biratnagar Jute Mills as described for the Raghupati Jute Mill.

6.3.15 Exhibit 15 gives the liability data for the Biratnagar Jute Mills. Again the assumptions made for the Raghupati Mills regarding the increase in the equity base to 80% of gross fixed assets, is also made for the Biratnagar Mill. However, in view of the increased profitability of the company,there is no need to write down losses and an injection of R 32.0 million raising the equity to R 47.0 million is sufficient. Hence there would be no need for writing off accumulated interest on the part of the banks. However, they should be prepared to agree to a moratorium for a couple of years and new longer term lendings at reasonable rates of interest to replace existing loans.

RAGHUPATI ASSETS EXHIBIT 12

(Million RUPEES)

	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	GRTH%	MAX	MIN	AVG
11. LAND & BUILD @ COST	4.2	4.2	4.2	4.2	4.2	4.2	18.0	18.0	23.1	18.0	4.2	7.7
12. PLANT & MACH. @ COST	34.3	35.1	35.3	35.8	36.3	36.6	101.9	101.9	16.8	101.9	34.3	53.2
13. OTHER ASSETS @ COST	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
15. GROSS FIXED ASSETS	40.5	41.3	41.5	42.0	42.5	42.8	121.9	121.9	17.0	121.9	42.5	61.8
17. CUMULATIVE DEPN.	24.8	26.3	27.3	29.8	30.3	31.3	32.4	40.2	7.4	40.2	24.8	30.7
19. ADJUSTMENT												
20. NET FIXED ASSETS	15.7	15.0	13.6	13.0	12.3	11.5	89.5	81.1	26.4	89.5	11.5	31.1
22. BANK BALANCE AND CASH	0.1	1.3	1.1	4.1	0.2	1.0	1.0	2.0	52.4	4.1	0.1	1.4
23. DEPOSITS												
24. BILLS RECEIVABLE	17.4	20.5	25.7	35.2	34.2	25.2	20.0	14.0	-3.1	35.2	14.0	24.5
25. RAW MATERIALS STOCK	7.9	5.2	8.7	4.9	9.6	10.0	10.2	15.0	9.6	15.0	2.7	7.9
26. FINISHED STOCKS & WIP	33.6	33.7	29.3	19.3	19.5	15.0	10.2	10.0	-15.5	33.6	10.2	19.2
27. OTHER STOCK	7.1	8.3	12.4	8.5	7.6	5.0	5.0		-5.7	12.4	5.0	7.7
29. PARTS AND SPARES												
29. TRANSIT STOCKS												
30. TOTAL STOCKS	47.6	26.2	41.7	32.6	36.7	30.0	25.0	25.0	-8.6	47.6	25.0	34.4
31. OTHER CURRENT ASSETS												
32. ADJUSTMENT												
34. CURRENT ASSETS	65.1	61.0	69.1	72.5	71.7	56.2	46.0	41.0	-6.4	72.5	41.0	58.7
36. OTHER												
37. CWIP DIFFERENCE	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0				
38. ADJUSTMENT												
40. TOTAL ASSETS	80.0	76.0	82.9	85.5	84.0	87.5	135.5	122.1	8.1	135.5	87.5	94.2
42. TOTAL NO. EMPLOYEES												
43. NO. EXPAT. EMPLOYEES												

BACHHAWAT LIABILITIES EXHIBIT 13

(MILLION RUPEES)

	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	GRTH%	MAX	MIN	AVG
79. TAXATION PAYABLE												
80. BILLS PAYABLE	13.3	7.8	5.9	5.1	7.1	5.8	4.8	2.8	-27.7	13.3	2.8	6.9
81. ACCOUNTS PAYABLE	6.7	8.1	9.4	10.7	12.1	12.8	12.8	12.8	8.7	12.1	6.7	10.4
82. DIVIDENDS PAYABLE	1.1	1.1	1.1	1.1	1.1					1.1	1.1	1.1
83. ACCRUED LIABILITIES												
84. OVERDRAFT								32.8		32.8	32.8	32.8
85. SHORT TERM LOANS	67.2	93.6	85.7	85.1	65.3	85.3	85.2		4.1	85.2	67.2	81.4
86. OTHER CURRENT LIABS.	33.4	42.3	55.8	78.2	97.9	66.3	69.8		13.9	98.2	33.4	65.7
87. ADJUSTMENT												
89. CURRENT LIABILITIES	121.7	143.1	167.5	183.2	203.5	208.6	178.3	46.8	-13.8	207.5	46.8	151.4
91. AUTHORISED SHARE CAP.	15.8	15.8	15.8	15.8	15.8	15.8	97.8	97.8	35.4	97.8	15.8	36.2
92. ISSUED SHARE CAPITAL	13.6	13.6	13.6	13.6	13.6	13.6	97.2	97.8	31.4	97.8	13.6	34.5
93. PAID UP ORD. SHARES	5.5	5.5	5.5	5.5	5.5	5.5	97.2	97.8	58.7	97.8	5.5	28.4
94. PAID UP OTHER	1.6	1.6	1.6	1.6	1.6	1.6				1.6	1.6	1.6
95. ADJUSTMENT												
97. ISSUED/PAID CAPITAL	7.1	7.1	7.1	7.1	7.1	7.1	97.2	97.8	45.2	97.8	7.1	29.6
99. CAPITAL RESERVE	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0	1.1	1.1	1.1
100.GENERAL RESERVE	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.2	1.4	1.4	1.4
101.PROFIT & LOSS ACCOUNT	-7.4	-9.6	-111.1	-128.0	-152.8	-167.6	-155.1	-99.4				
103.TOTAL RESERVES	-6.9	-94.1	-108.6	-125.7	-147.5	-161.1	-152.7	-96.4		-96.9	-161.1	-114.6
105.TOTAL EQUITY	-61.8	-87.0	-101.5	-118.6	-140.4	-154.0	-55.7	0.6				
106.LONG TERM LOANS	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9		28.9	28.9	28.9
109.NEW LOANS								54.6		54.6	54.6	54.6
110.CHECK DIFFERENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
111.ADJUSTMENT												
113.TOTAL LIABILITIES	88.8	76.8	81.9	85.5	84.8	87.5	170.5	132.1	6.1	170.5	87.5	91.6
115.BANKING LIMITS												

BIRLA NAGAR — ASSETS — EXHIBIT 14

(MILLION RUPEES)

	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	GRTH%	MAX	MIN	AVG
11. LAND & BUILDS @ COST	4.6	4.5	4.4	4.3	4.2	4.2	4.2	4.2	-1.3	4.6	4.2	4.3
12. PLANT & MACH. @ COST	39.9	38.6	37.4	36.7	36.4	40.0	44.0	48.4	2.8	48.4	36.4	40.2
13. OTHER ASSETS @ COST	5.6	5.4	5.2	5.0	4.8	4.8	4.8	4.8	-2.2	5.6	4.8	5.1
15. GROSS FIXED ASSETS	50.1	48.5	47.0	46.0	45.4	49.0	53.0	57.4	2.8	57.4	45.4	49.6
17. CUMULATIVE DEPN.	33.0	31.8	30.3	29.0	27.4	27.8	28.2	26.6	-3.0	33.0	27.4	29.6
19. ADJUSTMENT												
20. NET FIXED ASSETS	17.1	16.7	16.3	17.0	18.0	21.2	24.8	28.8	7.7	28.8	16.3	20.0
22. BANK BALANCE AND CASH	0.2	0.3	0.4	0.1	0.3	0.5	1.0	2.0	36.9	2.0	0.1	0.6
23. DEPOSITS												
24. BILLS RECEIVABLE	5.5	6.6	6.9	9.2	11.0	13.0	19.0	23.0	22.7	23.0	5.5	13.0
25. RAW MATERIALS STOCK	7.4	8.6	2.1	7.1	9.0	10.0	15.0	25.0	19.0	25.0	2.1	10.5
26. FINISHED STOCKS & WIP	51.0	31.3	23.7	15.5	36.6	25.0	20.0	15.0	-16.0	51.0	15.0	27.6
27. OTHER STOCK	9.7	11.2	7.9	7.6	8.0	5.0				11.2	5.0	8.3
28. PARTS AND SPARES												
29. TRANSIT STOCKS												
30. TOTAL STOCKS	69.1	51.1	37.7	32.1	57.6	40.0	35.0	40.0	-7.3	69.1	28.2	44.5
31. OTHER CURRENT ASSETS												
32. ADJUSTMENT												
34. CURRENT ASSETS	73.8	58.0	45.0	39.6	66.7	57.5	55.8	65.0	-1.8	73.8	39.6	57.1
36. OTHER												
37. CHECK DIFFERENCE	0.0	0.0	0.2	0.2	2.0	0.2	0.2	0.0				
38. ADJUSTMENT												
40. TOTAL ASSETS	90.9	74.7	61.3	56.9	84.7	74.7	79.6	93.8	0.4	93.8	56.9	77.1
42. TOTAL NO. EMPLOYEES												
43. NO. EXPAT. EMPLOYEES												

NOTE : 1988/89 STOCKS ESTIMATED FROM A TOTAL FIGURE OF RS.36 MILLION

BIRLA [illegible] LIABILITIES EXHIBIT 15

(MILLION RUPEES)

	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	GRTH%	MAX	MIN	AVG
79. TAXATION PAYABLE												
80. BILLS PAYABLE	24.8	12.4	7.4	15.4	16.0	12.0	8.0	4.0	-22.9	24.8	4.0	11.5
81. ACCOUNTS PAYABLE	11.0	16.9	29.7	42.3	50.0	48.0	6.2	5.0	-18.7	50.0	5.0	25.4
82. DIVIDENDS PAYABLE	1.6	1.6	1.6	1.6	1.6					1.6	1.6	1.6
83. ACCRUED LIABILITIES												
84. OVERDRAFT		29.8	29.8	29.8	29.8	35.0	45.2	52.8	9.7	52.8	29.8	35.9
85. SHORT TERM LOANS	54.9	39.2	29.1	14.4	28.5	38.0	28.0		-15.0	54.9	14.4	30.9
86. OTHER CURRENT LIABS.	13.6	14.2	18.6	28.7	26.9	48.0	28.2		6.6	48.0	13.6	21.2
87. ADJUSTMENT												
89. CURRENT LIABILITIES	125.9	116.1	116.2	124.2	154.9	197.0	99.2	61.8	-7.6	197.0	61.8	116.9
91. AUTHORISED SHARE CAP.	15.0	15.0	15.0	15.0	15.0	15.0	47.0	47.0	17.7	47.0	15.0	25.0
92. ISSUED SHARE CAPITAL	11.0	11.0	11.0	11.0	11.0	11.0	47.0	47.0	33.3	47.0	11.0	28.0
93. PAID UP ORD. SHARES	7.1	7.1	7.1	7.1	7.1	7.1	47.0	47.0	31.0	47.0	7.1	17.1
94. PAID UP OTHER	3.5	3.5	3.5	3.5	3.5	3.5				3.5	3.5	3.5
95. ADJUSTMENT												
97. ISSUED/PAID CAPITAL	10.6	10.6	10.6	10.6	10.6	10.6	47.0	47.0	33.3	47.0	10.6	24.7
99. CAPITAL RESERVE	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.7	0.7	0.7
100.GENERAL RESERVE	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	0.0	5.4	5.4	5.4
101.PROFIT & LOSS ACCOUNT	-46.5	-72.9	-80.4	-99.1	-101.6	-113.5	-97.7	-97.1				
103.TOTAL RESERVES	-40.4	-66.8	-80.3	-93.2	-95.5	-107.3	-91.3	-91.1		-40.4	-107.3	-75.9
105.TOTAL EQUITY	-29.8	-56.2	-69.7	-82.4	-84.9	-97.1	-74.2	5.9				
107.LONG TERM LOANS	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	0.0	14.8	14.8	14.8
108.NEW LOANS								11.1		11.1	11.1	11.1
109.CHECK DIFFERENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
110.ADJUSTMENT												
112.TOTAL LIABILITIES	90.9	74.7	61.3	56.6	84.7	74.7	79.8	97.6	0.4	95.6	56.6	77.1
114.BANKING LIMITS												

6.4 WORKING CAPITAL NEEDS

6.4.1 The key requirement of the companies is to be able to control the jute supply and hence moderate jute prices, by eliminating the agents. In practical terms the Jute Trading and Development Corporations' cooperatives may assist in the procurement of the jute which is harvested over the period November to February inclusive. Taking 1991/92 projections as the base year and allowing for waste included in the jute expenses projected then a total of R117.5 million will have to be financed (see Exhibits 10 and 11), for both mills.

6.4.2 If it is assumed that the four month harvest period on average is approximately uniform in terms of supply, the requirements will be as follows approximately.

November	R 30 million	less	10 mn	prodn.	=	R 20 mn.
December	R 60	~	less 20	~	=	R 40 mn.
January	R 90	~	~ 30	~	=	R 60 mn.
February	R120	~	~ 40	~	=	R 80 mn.
March	R120	~	~ 50	~	=	R 70 mn.
April	R120	~	~ 60	~	=	R 60 mn.
May	R120	~	~ 70	~	=	R 50 mn.
June	R120	~	~ 80	~	=	R 40 mn.
July	R120	~	~ 90	~	=	R 30 mn.
August	R120	~	~ 100	~	=	R 20 mn.
September	R120	~	~ 110	~	=	R 10 mn.
October	R120	~	~ 120	~	=	Zero

Average monthly	=	R 40 mn.
Peak	=	R 80 mn.

6.4.3 Company management should aim at maintaining low stocks of work in progress and finished goods. In the past these have sometimes amounted to several months but management should push sales out as far as possible and work to supply contracts where ever these can be secured. Tight management is required to keep stocks of finished goods and work in progress below 30 days. Taking 30 days as a reasonable target the working capital requirement in 1991/92 (based on total costs) will be 285.4 ÷ 12 or approximately R 25 million.

6.4.4 In the case of receivables, the company will have to pre-finance its jute purchases so it is reasonable to expect some of its own local customers to at least pay for its requirements on a cash basis. For export sales, however, an average credit of three months may have to be given so L.C. facilities will be required accordingly.

The assumptions here for receivables are as follows:

(a) half domestic customers on cash basis

(b) half " " " 30 day basis
or (282 ÷ 2) ÷ 12 = R 12 million approx.

(c) export sales on 90 day basis or
98 ÷ 4 = R 25 million approximately

(d) total working capital for year for debtors of R 37 million for the two mills.

6.4.5 Cash requirements should be enough to finance one week's expenses or about R 4 million. While credit received should be at least 30 days for supplies or approximately R 6 million.

6.4.6 Total working capital for both mills combined can be summarised as follows:-

(a) Jute supplies	average	R 40 mn	Peak R80 mn
(b) Finished stocks and w.i.p.		R 25 mn	
(c) receivables		R 37 mn	
(d) cash		R 4 mn.	
(e) creditors		R (6) mn.	
Net working capital		R 100 mn.	

6.4.7 Broken down between the two mills pro rata to sales, the split would be as follows (in round terms).

	Raghupati	Biratnagar	Total
Jute	15	25	40
Finished stock & wip	10	15	25
Receivables	14	23	37
Cash	2	2	4
Creditors	(2)	(4)	(6)
Net position	39	61	100

6.5 CAPITAL EXPENDITURE

6.5.1 The main planned capital expenditure is for the Shree Raghupati Jute Mill and is included in a proposal by Gardella of Genoa, Italy. This expenditure is to rehabilitate the mill after a serious fire that destroyed 60 of its looms and an estimated R 20 million of finished goods. According to management only R 12 million was recovered by insurance which suggests a problem in that usually routine part of management.

6.5.2 According to the Gardella proposal the 20 new looms will replace the 60 destroyed by fire some of which are said to be up to 50 years old. However, the team's technical consultant suggested that 18 looms would be sufficient provided two high speed winding machines are installed. Gardella agreed in principle and indicated that the total price would remain the same. The Gardella proposal includes:

(a) new looms.

(b) preparation equipment, accessories and spares.

(c) erection, start up and technical assistance.

(d) training in Italy for two technicians for two months.

(e) production of the same size, weight and cover factor of bags and warp and weft of the same counts.

6.5.3 According to the Gardella proposal, the new plant would increase output by 3.5 million bags while reducing production costs by using less electricity and weaving labour from 1 per loom to 1 per 3 looms. Labour in the preparation department would remain the same. The Gardella proposal gives the following comparative cost data:

	Gardella Equipment	Old Technology
preparation labour	15	30
weaving	39	195
annual cost	R 1.6 mn	R 6.5 mn
electricity	R 0.3 mn	R 0.4 mn
maintenance	R 0.6 mn	R 1.5 mn
Total cost	R 2.5 mn	R 8.4 mn

6.5.4 It is indeed likely that new equipment will be more economic to operate and give substantially more output. The sales analysis assumes that by 1991/92 the mill will reach its historically high level of production. However, this is a cautious position and does not take into account the possibly greater volume increases as indicated by Gardella. Similarly, the cost savings shown have also not been included. Clearly if these are obtained then 1991/92 gross profit will increase by R 6.0 million and the effect on the ability of the mills to repay interest could increase to a maximum of R 36.0 million or more per annum.

6.5.5 The cost estimates made by Gardella are summarised as follows:

	mn $ US	
machinery cost	" 1.52	
spares	" 0.39	
erection/tech/training	" 0.20	
transport	" 0.19	(to site)
TOTAL	" 2.3	(approximately R65.3mn)
Duties	" 0.11	million
Civil Works	" 0.13	"
Labour	" 0.01	"
TOTAL	" 0.25	"

6.5.6 The factory area needing demolition and reconstruction is approximately 1200 square metres. Current steel frame factory buildings with new foundations including modern fittings were quoted at $80 per metre squared. However, recent construction costs in the textile sector elsewhere have been more than $400 per square metre. In this case the local construction costs will be R 13.6 million.

6.5.7 Gardella quote erection costs for 4 man months at $ 59,000 or nearly $ 15,000 per man month. Taking two tickets at $7,000/= plus 120 days at $50 per day per diem this leaves $46,000 for fees or more than $380 per man day, which is on the high side. The same argument applies to the technical assistance of 6 man months at $88,500 and for 4 man months training in Italy at $48,400. Probably a 30% reduction can be achieved. The loom cost at $89,000 per loom seems also to be on the high side and some comparative figures should be obtained (for negotiation purposes).

6.5.8 The Gardella proposal indicates that the plant capacity will become 480 B twill bags per hour. For a 7200 hour operation per annum (3 shifts),the output will be 3.456 million bags per annum (320 days at 22.5 hours per day). At a weight per bag (for 112 x 87 cm) of 1.021 Kg, this gives 3500 MT per annum additional capacity but only 3000 MT has been assumed in the Sales Analysis.

6.5.9 The financing of the project for the Gardella supply of $2.3 million is hoped to be through an Italian Government grant. Payment terms to Gardella would be by a 30% down payment and the balance of 70% covered by letter of credit. In the absence of such a grant a normal suppliers credit would be an interest rate of 7.5% to 9.0% with a 7 to 8 repayment period. A 5% insurance fee would also be chargeable.

6.5.10 The overall expenditure and financing assuming Italian grant and local long term loan for buildings would be as follows:

machinery,transport,technical	R 65.3 million
local costs and buildings	R 13.8 "
TOTAL	R 79.1 "
Italian Grant	R 65.3 "
Long term local loan	R 13.8 "

6.5.11 The Biratnagar Jute Mill was closed during the team's visit because of the current market problems. There was a modernisation programme in the seventies so the need for replacement of machinery may not be so urgent. However,some re-equipping will be needed in the early nineties and the cost will be about R 12 million. It is hoped that this can be financed through a second soft loan from the Government of the machinery supplier. As of mid 1989 the company's fixed assets appear to be R47 million and the book value is R 17.1 million.

6.5.12 Appendix 5 indicates the likely capital expenditure requirements for Biratnagar and Raghupati beyond 91/92 which is in addition to the Gardella proposal and when funds have been mobilised. Clearly the rehabilitation especially with Biratnagar could be implemented before end 1991/92. However, management would need to organise a comprehensive feasibility study and would also require to identify sources of finance. So in practice such a major rehabilitation is not likely to be implemented before 1992. A rough estimate of R 100 Million will be required for rehabilitation and balancing of Biratnagar.

6.6 CORPORATE RESTRUCTURING

6.6.1 The previous sections have concentrated more on looking at the two mills as separate entities, although an attempt was made to show the impact on profitability if the two mills were combined. This section, using similar basic assumptions as before, explores the likely benefits of rationalising the two mills and undertaking a complete corporate restructuring. Again it has to be noted that information obtained from the field visit was far from comprehensive and there were contradictions and inconsistencies between various figures provided by company management and Bank personnel. Despite the data problems it is considered that the proposals and calculations made in this section are generally valid.

6.6.2 If the measures are adopted that have been suggested with respect to pricing, market, financial control systems and management rationalisation, then by 1991/92 the profitability of the two mills can be expected to be as follows:-

Profit before interest	R	100	million
Affordable interest	R	30	"
Annual depn.	R	10	"
Distributable profit	R	60	"
Annual cash flow	R	70	"
Cumulative losses	R	170	"

6.6.3 Existing issued and paid up capital plus various reserves is R26 million. New equity for the expansion at Raghupati and to bring the equity capital financing to 80% of the gross fixed assets would be R126 million. This makes a total equity of R152 million. Hence a R20 million write off of losses brings the company back to a position with a small positive net worth.

6.6.4 The position with a corresponding rationalisation of reserves would become as follows:

Issued equity	R	144	million
General reserves		10	"
Acc P/L account	R	(150)	"
Shareholders funds		4	"

6.6.5 Total fixed assets including the Raghupati major replacement programme and a smaller programme for Biratnagar, would be as follows:

RJM	81	million
BJM	29	"
TOTAL	110	"

Current assets, after establishing sound inventory and receivable control, budgeting, planning and costing systems and allowing for the requirements to control the jute raw material market would be as follows:

RJM	41	million
BJM	65	"
TOTAL	106	"

6.6.6 Total assets for the two mills combined would, therefore, be approximately R 216 million in 1991/92. Total liabilities would also be the same and the constituents would be as follows:

(a) shareholders funds	R 4	million.
(b) sundry creditors	R 6	million.
(c) ADB loan	R 15	"
(d) overdraft	R 85	"
(e) loans	R 106	"

6.6.7 Based on a 3:1 interest cover ratio,~affordable~ annual interest in 1991/92 would be R30 million. The total debt would be R 206 million. Hence the average interest rate must not exceed 15% Also based on a 3:1 loan cover ratio the annual affordable repayments should not exceed 70 ÷ 3 = R 23 million approximately. Excluding the overdraft from this calculation,this means that the loans should not be repaid in less than 121 ÷ 23 = 6 years. Creating 10 year loans with 15% interest rates would provide the company with a reasonable cushion and the banks with a high probability of recovering their debt.

6.6.8 The figures shown in the liabilities exhibits have been taken from draft accounts and other estimates provided by company management. This indicates a total exposure by the Nepal and Rastriya banks and/or other unspecified creditors, including interest arrears and penalties as follows:-

Short term loans	114
Long term ADB	15
" " other	21
Overdraft	30
Other liabilities	192
TOTAL	372

6.6.9 The Nepal Bank exposure was said to be R 120 million in BJM and R 42 million in RJM or a total of R162 million. Of this total about R 83 million appears to be principle. The RB exposure is said to be R 71 million and an unspecified amount of unpaid interest and penalties but probably similar to the Nepal Bank. Since the proposed equity increase is approximately R 126 million and only R 80 million of this will be to fund the major replacement programme, this means Government should inject new cash of R 46 million. This will serve to repay in 1989/90 to 1990/91 most of the government guaranteed loans which are then replaced by equity in the company's accounts.

6.6.10 Over the period 1989/90 to 1991/92 the profits of the combined company after allowing for interest charges would be R 69 million, excluding benefits of rationalisation,and after taking account of expected losses in 1989/90. Hence the profits for this period plus the government contribution will amount to R115 million, which correspondingly increases the shareholder's funds.

6.6.11 The financing shown in paragraph 6.6.8,with a moratorium, as proposed for 1989/90 / 1990/91 and reduced interest rates would, therefore, become as follows:-

new equity	R 46 million
Net profits	R 69 "
Sundry creditors	R 6 "
ADB loan	R 15 "
Overdraft	R 85 "
Loans	R106 "
TOTAL	R327 "

Without write downs, the debt would have been R 372 million (excluding interest in 1989/90,excluding further penalties,and reduced interest payments in 1990/91 and 1991/92). Hence the banks should forgo R 45 million of past penalties and accrued interest in return for a government contribution as shown and a much higher probability of regaining their original loans.

6.6.12 If revised loan agreements were negotiated with new terms as shown below the banks position would be relatively strong;

(a) present debt converted to overdraft and long term debt

(b) interest rates not to exceed 15%

(c) repayment period of 10 years

(d) no penalty charges

(e) moratorium on outstandings until 1991/92

(f) interest payments not to exceed a third of the company's profit before interest.

6.6.13 It is also recommended that the banks take a seat on the combined board and play an active role in exerting financial control and discipline. The banks should give serious consideration to adopting a monitoring and control function.

6.7 SOCIAL AND ECONOMIC IMPACT

6.7.1 The two jute mills utilise a domestically grown agicultural crop - that is jute. Not only is it a domestic resource based industry it requires very few imputs from outside,other than the plant and machinery and some minor ancillary materials. The jute industry itself is said to support approximately one hundred thousand families.

6.7.2 The agricultural sector needs the jute mills to provide a good and regular outlet for the crop. Government intervention in the pricing and marketing should stabilise prices so that the jute price is not so susceptible to external fluctuations. In the past, because of the impact of synthetics penetrating the natural fibre bag market, there has been a tendency for jute prices to suffer a cyclical down turn. There are now some encouraging signs that the weak prices in recent years are now being replaced by stronger prices. This may reflect normal cyclical patterns or the tendency in many developed countries towards replacing synthetic fibres to some extent with natural fibres.

6.7.3 The impact of environmental concern in Europe and the USA on the future growth in demand for jute cannot easily be assessed. Italian reports hint that polypropylene may have some negative health properties and certainly there is the question of non bio-degradability. More than these factors is the growing "ecological sensitive fashion" which may very well lead to a resurgence in demand for jute and other natural fibres.

6.7.4 Exhibit 10 and 11 gave the output of the two mills in 1991/92 at approximately 17,000 tons or in terms of the value of the jute input,of approximately R120 million. By using the jute internally and assuming the mill input prices for 1991/92 are near the international levels, this suggests a value of foreign exchange forgone of about R 90 million. It is assumed here that 25% of the R120 million would be local and other costs which should be deducted from the forex that would otherwise be earned.

6.7.5 The foreign exchange benefits of operating the mills constitutes the exported hessian plus the saving of imports at international prices. Very roughly the forex benefit would be about 75% of the 1991/92 revenues - that is R290 million. The net benefit after allowing for foreign exchange foregone for not exporting the raw jute would, therefore, be R200 million - less the forex costs involved in operating mills.

6.7.6 The foreign exchange component of the mills' operating costs can not be easily calculated as no national economic parameters have been calculated. The assumptions made here are as follows:

(a) jute	- already given	R 90	million
(b) batching oil	- 100%	R 5	"
(c) stores/spares	- 100%	R 20	"
(d) electricity	- 25%	R 5	"
(e) wages & salaries	- 10%	R 9	"
(f) other	- 10%	R 1	"
(g) marketing	- 80%	R 15	"
	TOTAL	R145	"

Hence the net foreign exchange benefit is around 50% of the revenues or R145 million.

6.7.7 The foregcing calculation is very rough because economic data is not readily available. However, it is clear that the benefits to the nation are very considerable and the industry must be given a very high priority for its rehabilitation and re-establishment on a sound financial basis.

6.7.8 It must also be emphasised that export markets exist and Nepal has a fraction of the international market share for jute products (less than 1% as far as can be determined). The jute growing industry needs to be developed both quantitatively and qualitatively and the jute mills need to be expanded in the longer term, to allow Nepal to increase its share of the world market. Its strategy should be to produce high quality products and maximise the value added involved.

6.7.9 Apart from the 100,000 families that are said to be supported by the jute growing industry, the mills employ more than 5,000 people and support at least 25,000 people directly. While technological advances should be adopted which will tend to reduce the job content per ton, output levels can potentially be increased by a large amount, thus increasing the employment prospects.

6.7.10 The mills have strong economic linkages first of all with jute growing and agricultural inputs and second with the agricultural sector as a whole. Jute bags constitute an important part of the storage and handling of sugar and grains. There may be long term potential also in other applications such as geo-textiles for terracing and the prevention of erosion. For a country that has been largely denuded of its forests, this could be an important application.

6.7.11 The industry makes a contribution to the government through taxes and duties. Again there is not much information available but for 1991/1992 the benefits are likely to be as follows:-

sales taxes at 10%		R 38	million
jute expenses at 10%		R 12	"
personal taxes at 10%		R	"
net profit	87.5%	R 53	"
	TOTAL	R 113	" per annum

6.8 RATIO ANALYSIS

6.8.1 Exhibit 16 gives the main ratios that were calculated for the Raghupati Jute Mill. The main historical irregularities can be summarised as follows:

(a) A very high debt:equity ratio (total debt to issued and paid up equity) of 15.0:1.

(b) Negative interest cover ratio (that is profit before interest divided by the annual interest charge).

(c) Negative values of equities relative to fixed assets.

(d) A current ratio (current assets divided by current liabililties) of less than one third of a normally acceptable value.

(e) A velocity ratio (sales divided by total assets about two thirds of the normal value for such a business (at least 1.2:1).

(f) Sales to current assets at around 1.0:1 or a quarter of a normally acceptable level.

(g) Debtors at a maximum of 175 days or three times a reasonable commercial level.

(h) Sales to finished stocks at a quarter of a reasonable level.

(i) Excessive creditors levels.

(j) Negative margins on sales and assets.

6.8.2 The ratios shown in Exhibit 16 for 1991/92 are more in line with normally accepted commercial standards. These levels have been established in the refinancing and restructuring proposals made in earlier sections. For example, the interest cover ratio should not be below 3:1 and preferably closer to 5:1. The assumption that this ratio would be set at 3:1 results in a much improved debt:equity ratio of 0.8:1.

6.8.3 Exhibit 17 gives the same ratios for the Biratnagar Jute Mill. Historically many of the ratios for this mill have been better than the corresponding values for Raghupati. For example, the debt:equity ratio,although poor has been much lower than that of Raghupati. Similarly,the velocity ratio at an average of 1.9:1 has been very satisfactory. Management has exerted much tighter control over debtors and raw materials and to a more limited extent over finished goods. Pre-interest margins have been positive at times as well.

RATIO ANALYSIS

	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	MAX	MIN	AVG
FUNDING RATIOS											
DEBT:EQUITY	12.4	14.7	14.9	14.5	15.8	15.2	1.1	8.8	15.8	8.8	11.1
LOAN COVER RATIO											
INTEREST COVER RATIO	-8.4	-8.5	8.6	-8.3	-8.1		2.9	3.2	3.2	-8.5	8.7
EQUITIES:FIXED ASSETS	-5.9	-5.8	-7.4	-9.1	-11.4	-12.4	-8.6	8.8	8.2	-12.4	-6.5
CURRENT RATIO	8.5	8.4	8.4	8.4	8.4	8.3	8.7	8.9	8.9	8.3	8.4
STRUCTURAL RATIOS											
VELOCITY RATIO	1.1	1.8	8.8	8.9	8.8	1.8	8.7	1.1	1.1	8.7	8.9
SALES:CURRENT ASSETS	1.4	1.2	1.2	1.8	1.8	1.2	2.1	2.5	2.5	1.2	1.5
TOTAL:CURRENT ASSETS	1.2	1.2	1.2	1.2	1.2	1.2	2.9	2.2	2.2	1.2	1.4
FIXED:CURRENT ASSETS	8.2	8.2	8.2	8.2	8.2	8.2	1.9	2.2	2.2	8.2	8.6
CURRENT ASSETS:OVERDRAFT								1.2	1.2	1.2	1.2
CURRENT ASSET CONTROL RATIOS											
DAYS DEBTORS	78.4	113.2	142.8	131.2	175.6	158.2	76.4	35.6	175.6	35.6	114.9
SALES:RAW MATERIAL	11.4	14.6	97.9	15.5	7.4	6.6	9.6	9.6	97.9	6.6	21.1
SALES:FINISHED STOCKS	2.8	3.7	2.7	4.8	2.6	4.4	9.6	14.4	14.4	2.2	5.5
SALES:TOTAL STOCK	1.9	2.1	1.6	2.2	1.9	2.2	3.8	5.7	5.7	1.6	2.7
DAYS MATERIALS	41.5	65.3	9.9	65.8	96.3	118.5	118.9	119.6	119.6	9.9	75.8
DAYS FINISHED GOODS	125.4	97.6	195.2	85.6	98.6	69.7	45.8	32.7	195.2	32.7	92.1
DAYS TOTAL STOCK	187.1	169.2	361.8	145.2	197.9	139.2	112.5	81.8	361.8	81.8	154.7
DAYS CREDITORS	98.2	178.6	176.2	191.7	148.5	147.6	132.1	9.6	191.7	8.6	126.8
PERFORMANCE RATIOS											
PRE-INT. MARGIN ON SALES	-5.2	-16.9	16.9	-7.9	-2.9	-16.9	15.2	22.2	22.2	-16.9	8.4
PRE-INT.MARGIN ON ASSETS	-5.6	-16.2	15.4	-7.8	-2.1	-16.5	18.7	26.1	26.1	-16.5	2.2
NET RETURN ON SALES	-19.2	-48.4	-14.6	-36.6	-28.9	-28.6	8.6	14.5	14.5	-48.4	-17.1
NET RETURN ON TOT.ASSETS	-21.4	-42.7	-11.6	-38.4	-26.2	-28.2	6.2	17.8	17.8	-42.7	-15.1
POST TAX MARGIN	-19.2	-48.4	-16.6	-36.6	-28.9	-28.6	6.6	14.5	14.5	-48.6	-17.2
NET RETURN ON CAPITAL	-21.4	-42.7	-11.6	-32.9	-26.2	-28.1	6.2	17.8	17.8	-42.7	-15.1
GROSS MARGIN	1.2	-7.8	44.4	8.5	6.6	-2.2	39.4	58.7	58.7	-7.8	16.6
CONVERSION MARGIN	26.2	124.1	67.2	187.1	87.8	119.5	123.5	185.8	187.1	26.2	111.7
NET PROFIT PER EMPLOYEE											
COST RATIOS											
DIVIDENDS % OF NET PROFIT											
DIVIDENDS % ISSUED EQUITY											
DIVIDENDS % TOTAL EQUITY											
REVENUES PER EMPLOYEE											
OVERHEADS % SALES	6.4	6.5	12.9	8.4	8.9	16.6	17.1	11.2	16.6	6.4	10.9
OVERHEADS % TOTAL COSTS	6.1	7.2	16.7	7.6	8.6	14.8	15.4	14.4	16.7	6.1	11.2
ROYALTIES/FEES % SALES											
ROYALTIES/FEES % NET PROF											
MATERIAL COST % TOT. COST	72.1	73.7	69.8	73.1	69.9	79.2	73.9	68.9	73.1	73.1	66.8
WAGES/SALS % TOTAL COST	29.7	37.2	54.2	37.2	29.8	33.5	26.4	25.1	54.2	14.2	37.6

BIRATNAGAR — RATIO ANALYSIS — EXHIBIT 17

	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	MAX	MIN	AVG
FUNDING RATIOS											
DEBT:EQUITY	5.2	3.7	2.7	1.4	2.7	3.8	0.4	0.3	5.2	0.3	2.4
LOAN COVER RATIO											
INTEREST COVER RATIO	-1.8	-0.1	0.3	-1.1	0.9		3.0	3.0	3.0	-1.1	0.7
EQUITIES:FIXED ASSETS	-1.7	-3.4	-4.3	-4.8	-4.7	-4.6	-1.4	0.2	0.2	-4.8	-3.1
CURRENT RATIO	0.7	0.5	0.4	0.3	0.4	0.3	0.6	1.1	1.1	0.3	0.5
STRUCTURAL RATIOS											
VELOCITY RATIO	1.4	1.6	1.9	2.0	1.6	1.8	2.2	2.5	2.5	1.4	1.9
SALES:CURRENT ASSETS	1.7	2.1	2.6	2.9	2.1	2.5	3.4	3.6	3.6	1.7	2.6
TOTAL:CURRENT ASSETS	1.3	1.3	1.4	1.4	1.3	1.4	1.5	1.4	1.5	1.3	1.4
FIXED:CURRENT ASSETS	0.3	0.3	0.4	0.4	0.3	0.4	0.5	0.4	0.5	0.2	0.4
CURRENT ASSETS:OVERDRAFT									-	-	
CURRENT ASSET CONTROL RATIOS											
DAYS DEBTORS	16.0	20.2	21.7	29.3	33.6	36.1	37.0	35.5	37.0	16.0	28.7
SALES:RAW MATERIAL	17.0	13.0	55.2	16.2	15.4	13.1	12.5	9.5	55.2	9.5	19.1
SALES:FINISHED STOCKS	2.5	3.6	4.2	7.4	3.0	5.3	9.4	15.6	15.6	2.5	6.5
SALES:TOTAL STOCK	1.0	2.3	3.1	3.6	2.6	3.3	5.4	5.9	5.9	1.0	3.5
DAYS MATERIALS	22.6	66.7	17.3	45.2	42.7	58.7	98.2	116.7	116.7	17.3	58.1
DAYS FINISHED GOODS	138.5	94.5	98.4	41.6	112.6	64.3	58.3	23.5	138.5	23.5	78.0
DAYS TOTAL STOCK	164.9	154.3	125.1	81.1	165.0	121.9	88.8	64.2	164.9	81.1	122.9
DAYS CREDITORS	98.4	165.9	217.0	278.9	255.6	222.5	82.4	31.1	278.9	31.1	166.2
PERFORMANCE RATIOS											
PRE-INT. MARGIN ON SALES	-7.1	-1.5	3.6	-16.5	14.2	-6.1	22.5	26.5	26.5	-16.5	4.8
PRE-INT.MARGIN ON ASSETS	-9.6	-2.4	7.2	-37.5	23.1	-14.2	52.6	66.6	66.6	-37.5	12.6
NET RETURN ON SALES	-14.8	-13.9	-12.2	-36.8	-2.6	-9.2	14.1	17.8	17.8	-36.8	-7.2
NET RETURN ON TOT.ASSETS	-20.5	-22.2	-23.2	-74.6	-4.6	-16.3	33.2	42.6	42.6	-74.6	-18.7
POST TAX MARGIN	-14.8	-13.9	-12.2	-36.8	-2.6	-9.3	14.1	17.8	17.8	-36.8	-7.2
NET RETURN ON CAPITAL	-28.5	-22.2	-23.2	-74.6	-4.6	-16.2	33.2	42.6	42.6	-74.6	-18.7
GROSS MARGIN	-4.5	1.4	5.9	-14.4	16.6	-8.5	41.5	49.1	49.1	-14.4	12.1
CONVERSION MARGIN	15.3	157.1	147.1	133.9	51.5	112.1	118.1	106.3	157.1	15.3	105.2
NET PROFIT PER EMPLOYEE											
COST RATIOS											
DIVIDENDS % OF NET PROFIT											
DIVIDENDS % ISSUED EQUITY											
DIVIDENDS % TOTAL EQUITY											
REVENUES PER EMPLOYEE											
OVERHEADS % SALES	1.9	2.9	1.6	1.7	1.5	7.6	6.6	6.4	7.6	1.5	3.8
OVERHEADS % TOTAL COSTS	1.8	2.8	1.9	1.4	1.2	7.8	6.8	6.7	8.2	1.4	4.3
ROYALTIES/FEES % SALES											
ROYALTIES/FEES % NET PROF											
MATERIAL COST % TOT. COST	65.2	37.8	36.7	42.2	64.8	43.8	41.8	44.2	65.2	37.8	46.6
WAGES/SALS % TOTAL COST	28.1	31.2	38.6	34.4	39.3	32.8	32.1	38.5	39.3	28.1	33.6

6.9 POTENTIAL FOR PRIVATISATION

6.9.1 The present financial status of the two mills is so poor that it would be very difficult to sell shares in the companies as they are. Hence the idea of privatisation at the moment is not a very realistic option.

6.9.2 If the privatisation option were to be pursued, it should follow an action programme designed to rehabilitate the mills and make them financially attractive. At that time realistic values could be put on the share capital based on earnings potential, and the prospects for selling the shares would be good.

6.9.3 A possible approach would be for the Government to seek a foreign partner to participate in the mills. Such a partner would be expected to bring modern management technology and marketing skills. In particular the foreign joint venture partner in this option, should be able to assist in opening up export markets.

6.9.4 The shares held at the moment by domestic and Indian shareholders have little if any intrinsic value. In book value terms they have a negative value. One approach would be for Government to invite a well known reputable foreign joint venture partner to buy out the existing shares on a heavily discounted basis, and give the partner management of the mills. Exhibits 18 and 19 show (for the two mills separately) the sort of returns that such a partner and Government could expect.

6.9.5 The calculations in these exhibits are based on the new total issued equity figures with the assumption that the new partner would have the existing shares at par. That is R 7.1 million and R 16.1 million for Raghupati and Biratnagar mills respectively. Management fees are based on a composite of 1% of sales and 5% of profit before tax, less 20% withholding taxes. Net worth is based on the profit for the year multiplied by the percentage shareholding of each partner.

6.9.6 From the tables it can be seen that the government share of the returns, including taxes and duties, would be in 1991/92 R 187 million out of R215 million. If this position were achieved by 1991/92 the benefits would outweigh (that is government to foreign partner) the cost by nearly 10:1. As matters stand at the moment that looks an enticing proposition for both the Government and a potential foreign partner.

6.9.7 Post 1991/92,with a positive net worth and significant prospective earnings,privatisation could become a realistic option,with the foreign shareholders presence constituting an attractive feature. At that time the company would be valued on a prospective earnings basis and an offering could be made to both the minority foreign shareholder,other companies and individual shareholders.

BASHPATE — RELATIVE DISTRIBUTION OF BENEFITS — EXHIBIT 16

RETURN TO PRIVATE PARTNER

	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	TOTAL
340. DESIGN FEES	0.0	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.3
341. MACHINERY PURCHASE	0.2	0.0	0.2	0.0	0.0	0.0	6.5	0.0	6.5
342. PROJECT MANAGEMENT	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.3
343. MANAGEMENT FEE									0.0
344. MANAGEMENT FEE	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.1	1.6
345. MANAGEMENT FEE	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	1.0
346. DIRECTORS FEE									0.0
347. NET WORTH	0.2	0.0	0.2	0.0	0.0	0.2	0.4	0.4	1.3
348. MARKETING COM.	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.8
350. ANNUAL TOTAL	0.2	0.2	0.2	0.2	0.0	0.2	9.1	2.1	13.5

RETURN TO GOVERNMENT PARTNER

	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	TOTAL
370. TAXES AND DUTIES	0.2	0.2	0.0	0.0	0.0	0.0	5.6	16.4	22.8
371. INCOME TAXES	0.2	0.2	0.2	0.2	0.2	0.2	5.6	7.5	13.1
372. MANAGEMENT FEE									0.0
373. MANAGEMENT FEE	0.0	0.2	0.0	0.0	0.0	0.2	0.1	0.1	0.4
374. MANAGEMENT FEE	0.2	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.3
375. DIRECTORS FEE									0.0
376. NET WORTH	0.2	0.0	0.0	0.2	0.2	0.2	0.2	19.6	20.6
377. TAXATION									0.0
379. ANNUAL TOTAL	0.0	0.0	0.2	0.0	0.0	0.0	22.4	43.1	65.5

BIRATNAGAR — RELATIVE DISTRIBUTION OF BENEFITS — EXHIBIT 19

RETURN TO PRIVATE PARTNER

		1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	TOTAL
340.	DESIGN FEES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
341.	MACHINERY PURCHASE	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.8
342.	PROJECT MANAGEMENT	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2
343.	MANAGEMENT FEE									0.0
344.	MANAGEMENT FEE	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.9	3.4
345.	MANAGEMENT FEE	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.6	2.7
346.	DIRECTORS FEE									0.0
347.	NET WORTH	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.4	8.5
348.	MARKETING COM.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
350.	ANNUAL TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	6.6	9.4	16.0

RETURN TO GOVERNMENT PARTNER

		1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	TOTAL
370.	TAXES AND DUTIES	0.0	0.0	0.0	0.0	0.0	0.0	15.7	25.7	41.4
371.	INCOME TAXES	0.0	0.0	0.0	0.0	0.0	0.0	9.3	10.6	19.9
372.	MANAGEMENT FEE									0.0
373.	MANAGEMENT FEE	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.7
374.	MANAGEMENT FEE	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5
375.	DIRECTORS FEE									0.0
376.	NET WORTH	0.0	0.0	0.0	0.0	0.0	0.0	22.9	34.7	57.7
377.	TAXATION									0.0
379.	ANNUAL TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	51.5	69.7	121.2

APPENDIX 1

POTENTIAL PRODUCTION AT RAGHUPATI JUTE MILLS

Possible production output obtainable at Raghupati Jute Mills with present Machinery complement and including 18 extra Gardella Looms.

Possible Output 1.654 Tons/hour at 11,908 Metric Tons per Annum

LOOM COMPLEMENT
110 Hessian Looms

70 Sacking Looms

18 Rapier Type Gardella Looms

Basis of Calculation:- Equal shift working Mill to Finishing

HESSIAN CLOTH PRODUCTION

110 Hessian Looms 46.1/2" Reed Space 40" x 10 oz x 11 x 12 (woven 10.1/2 x 12)

Laid Length 111 yards, finished length 107 yds/cut/ Hessian Warp 8.25 lbs/Spyndle, Hessian Weft 10 lbs/Spyndle. Loom Speed 145 Picks per minute @ 67% efficiency.

Weight of Warp per Cut

$\frac{470 \times 111 \times 8.25}{14400}$ = 29.89 lbs = 44.89%

Selvedge Yarn per Cut 0.14 lbs = 0.22%

Weight of Weft per Cut

$\frac{12 \times 41 \times 36 \times 107 \times 10}{36 \times 14400}$ = $\frac{36.55}{66.58}$ lbs = $\frac{54.89\%}{100.00\%}$

Production per Loom

$\frac{145}{12} \times \frac{60}{36} \times \frac{10}{18} \times \frac{67}{100}$ = 8.43 lbs/loom hr 3.83 Kgs/hr
13.49 yds Cloth/loom hr 12.33 metres/hr
13.99 laid yds/loom hr 12.79 metres/hr

110 Looms @ 8.43 lbs per loom hour = 927 lbs/hr 421 Kgs/hr

SACKING CLOTH PRODUCTION

70 Looms 37.1/2" Reed Space 26.1/2" B Twills 14.24 oz 6 x 8 (woven 5.1/2 x 7.1/2) 2.1/4 lbs per 44" x 26.1/2" Bag. Bag cut length 91", Laid length 111 yds, finished length 104 yds/Cut. Sacking Warp 10.25 lbs, Sacking Weft 34 lbs, Loom speed 156 picks/minute at 75% efficiency.

Weight Warp per Bag

$$\frac{5.5 \times 20}{37} \times \frac{27.5 \times 6 \times 91}{36} \times \frac{10.25}{14400} \times \frac{111}{104} = 0.94 \text{ lbs} = 41.77\%$$

Selvedge Yarn per Bag

$$\frac{6 \times 91}{36} \times \frac{18}{14400} \times \frac{111}{104} = 0.02 \text{ lbs} = 0.09\%$$

Weight of Weft per Bag

$$\frac{7.75 \times 27.5 \times 91}{36} \times \frac{34}{14400} = 1.27 \text{ lbs} = 56.43\%$$

3 Ply Sewing Twine

$$\frac{10.5 \times 30}{14400} = \frac{0.02 \text{ lbs}}{2.25 \text{ lbs}} = \frac{0.90\%}{100.00\%}$$

Production per Loom

$$\frac{156}{7.75} \times \frac{60}{36} \times \frac{14.24}{16} \times \frac{75}{100}$$

22.39 lbs/loom hr	10.16 Kgs/hr
25.16 yds/loom hr	23.00 Metres/hr
26.85 Laid yds/loom hr	24.56 Laid Metres
9.95 Bags per loom hr	

70 Looms @ 23.39 lbs = 1567 lbs/hr 711 Kgs/hr

18 Tegard 1001 Type Looms producing Reverse weave fabric to the following specifications. B Twills 44" x 26.1/2" x 2.1/4 lbs, Sacking Warp 34 lbs/Spyndle, Weft 10 lbs/Spyndle

Weight of Warp per Bag

$\frac{229 \times 91 \times 34 \times 105}{36 \times 14400 \times 100}$ = 1.44 lbs. = 64.00%

Selvedge Yarn per Bag

$\frac{6 \times 91 \times 10 \times 105}{36 \times 14400 \times 100}$ = 0.010 lbs. = 0.44%

Weight of Weft per Bag

$\frac{8 \times 2 \times 26.5 \times 91 \times 10 \times 105}{36 \times 14400 \times 100}$ = 0.78 lbs. = 34.66%

3 Ply Sewing Twine

$\frac{10.5 \times 30}{14400}$ = 0.02 lbs. = 0.90%

= 2.25 lbs. = 100.00%

Production per Loom

$\frac{230 \times 60 \times 2 \times 14.24 \times 75}{8 \times 36 \times 16 \times 100}$ = 63.97 lbs/loom hr
71.87 yds/loom hr (65.72 metres/hr)
75.46 laid yds/loom hr (69 laid metres/hr
28.43 Bag lengths/loom hr

18 Looms @ 63.97 lbs = 1151 lbs or 522 Kgs/hr

YARN REQUIREMENTS

LIGHT YARNS

8.1/4 lbs	Hessian Warp 44.89%	416 lbs	
10 lbs	Hessian Weft Yarn	508 lbs	
10 lbs	Sacking Weft (Light Yarn)	399 lbs	
10 x 3 lbs	Sewing Twine	25 lbs	
18 lbs	Selvedge Yarn	14 lbs	
10 lbs	Sacking Warp	655 lbs	
		2017 lbs	915 Kgs
+7.1/2%	Wastage & Maintenance Allowance	151 lbs	69 Kgs
Total		2168 lbs/hr	984 Kgs/hr

HEAVY YARNS

34 lbs	Warp for Tegards @ 64%	737 lbs/hr
34 lbs	Weft for Shuttle Looms @ 56.43%	884 lbs/hr
+10%	Wastage & Maintenance Allowance	162 lbs/hr
Total		1783 lbs/hr 809 Kgs/hr

MACHINERY ALLOCATION BATCHING EQUIPMENT

1 Waste Cleaner)
1 Hard Waste Card) Existing equipment
1 Emulsion Plant)
2 64 Pr. Spiral Fluted Softener)

MACHINERY ALLOCATION LIGHT YARNS

Required production including wastage margin 2168 lbs./hr (984 Kgs/hr).
For this the following machinery is required:-

4 Breaker Cards)
5 Finisher Cards)
4 1st Drawings 5 Head) Existing equipment
4 2nd Drawings 5 Head)
6 3rd Drawings all 5 head)

8.25 lbs/Spyndle Hessian Warp

$\frac{3600}{4.25} \times \frac{60}{36} \times \frac{8.25}{14400} \times \frac{85}{100}$ = 0.69 lbs/Spindle/hour

$\frac{416}{0.69}$ x 7.1/2% = 648 Spinning Spindles required

10 lbs Hessian Weft

$\frac{3600}{3.75} \times \frac{60}{36} \times \frac{10}{14400} \times \frac{85}{100}$ = 0.94 lbs/Spindle/hr

$\frac{508}{0.94}$ + 7.1/2% = 580 Spinning Spindles

10 lbs Sacking Warp (& Weft)

$\frac{3600}{4} \times \frac{60}{36} \times \frac{10}{14400} \times \frac{85}{100}$ = 0.88 lbs/Spindle/hour

$\frac{1054}{0.88}$ + 7.1/2% = 1288 Spindles

Total Light Yarn Spinning Spindles Required =
648 + 580 + 1288 = 2516, say 26 Frames of 100 Spindles

At present there us a total of 30 Light Yarn 4.1/4 Pitch Spinning Frames installed but as overall weaving efficiency is low there are only 19 in operation.

MACHINERY ALLOCATION SACKING WEFT AND HEAVY YARN

Required production including Wastage margin 1783 lbs/hr (809 kgs/hr)

2 Teaser Cards
2 Breaker Cards
3 Finisher Cards
2 Mackhigh 1st Drawing
1 Pushbar 1st Drawing
2 Finisher Drawing 4 Head
1 Pushbar Finisher Drawing

NB. Should the Gardella Tegard Looms be installed and Weaving efficiency were to increase the Heavy Yarn section would require the following extra equipment to balance output.

1 New Teaser or Breaker Card with Roll Former
1 New Finisher Card
1 1st Drawing Frame
1 Finisher Drawing Frame

34 lbs SACKING WEFT YARN

$\frac{1900}{2.20} \times \frac{60}{36} \times \frac{34}{14400} \times \frac{80}{100}$ = 2.72 lbs per Spindle/hour

$\frac{1783}{2.72}$ + 10% = 721 Spindles = 9 Frames x 80 Spindles each

There is a shortfall in Heavy Yarn Spinning spindles and to cater for increased production from Shuttle Looms and 18 Tegards a further 4 x 80 Spindle Frames required or, alternatively, 2 Gardella Pot Spinning Frames of 96 Spindles.

MACHINERY ALLOCATION WINDING & TWISTING

Hessian Warp & Sewing Yarn = 441 lbs/hr

$\frac{400 \times 60 \times 8.25 \times 70}{14400 \times 100}$ = 10.3 lbs/Spindle/hr

$\frac{441}{10.3}$ + 7.1/2% = 46 Spindles required

SACKING WARP

$\frac{400 \times 60 \times 10 \times 70}{14400 \times 100}$ = 11.66 lbs/Spindle/hour

$\frac{655}{11.66}$ + 7.1/2% = 60 Spindles required

Heavy Yarn

$$\frac{300 \times 60 \times 34 \times 65}{14400 \times 100} = 27.6 \text{ lbs/Spindle/hour}$$

$$\frac{737}{27.6} + 10\% = 29 \text{ Spindles}$$

Total Warp and Heavy Yarn winding Spindles required = 46 + 60 + 29
= 135 Spindles or 5 Roll Winders required

NB. There are at present 4 Mackroll Winders each of 32 Spindles Plus one 96 Spindle old type Winder.

These machines are in bad condition and require immediate and radical repair.

It is proposed that the Gardella offer be amended to include 2 New Roll Winders and reduce looms from 20 to 18.

The increased efficiency obtainable from the looms because of better Spools will balance the projected output of bags from the installation.

Hessian Weft Yarn 10 lbs

Effective production of JF Low Cop Winder

$$\frac{1000 \times 3.45 \times 60 \times 10 \times 65}{36 \times 14400 \times 100} = 2.25 \text{ lbs/Spindle/hr}$$

$$\frac{508}{2.25} + 7.1/2\% = 243 \text{ Spindles}$$

There are 2 x 144 Spindle machines installed.

Sacking Weft Yarn 34 lbs/Spyndle

Effective production of JF Low Cop Winder

$$\frac{900 \times 4.15 \times 60 \times 34 \times 60}{36 \times 14400 \times 100} = 8.8 \text{ lbs/Spindle/hr}$$

$$\frac{884}{8.8} + 10\% = 110 \text{ Spindles}$$

There is one x 144 Spindle Cop Machine installed.

NB. The 3 old type Cop Winders are in bad condition and require thorough overhaul or replacement.

TWIST FRAME

There is One Twist Frame installed although of an old type, it is adequate for Twist requirements.

1 REELING MACHINE - Installed - adequate for requirements.

MACHINERY ALLOCATION WARP PREPARATION

Hessian Warp Sizing

Laid yardage required for 110 Hessian Looms = 1654 yds/hour at 27.57 yds/minute.

There are 3 Cylinder Dressing Machines installed and although in poor shape are adequate to keep the 100 Hessian Looms in full operation at an average Sizing efficiency of 45%.

It is however, recommended that Prebeaming equipment be installed and Dressing Machines thoroughly overhauled.

Sacking Warp Dry Beaming

Laid yardage required for 70 Standard Shuttle Looms = 2020 yds/hr or 33.6 yds/minute.

There are 2 Drybeamers installed and although poorly maintained are adequate to keep 70 Sacking Looms in full operation at an average beaming efficiency of 50%.

NB. The proposed installation of 18 Tegard Looms will be supplied by new Prebeaming and Rebeaming equipment therefore quality of Beams should be excellent and thus ensure a high weaving efficiency.

MACHINERY ALLOCATION CALENDER, SEWING & BALING

For finishing the Hessian fabric the following equipment is required:-

Hessian Loom output 1484 yds/hour

Effective production at Damping Machine = $\frac{133 \times 60 \times 70}{100}$ = 5568 yds/hr

1 Damping Machine adequate for Hessian output.

Effective production from Calender with 2 widths cloth =

$\frac{23 \times 60 \times 80 \times 2}{100}$ = 2208 yds/hour

One Calender adequate for Hessian output.

Effective production from Lapping Machine with 90" Laps =

$\frac{35 \times 90 \times 60 \times 60}{36 \times 100}$ = 3150 yds/hour

One Lapping Machine adequate for Hessian output.

For finishing and sewing the Sacking fabric the following is required:-

Sacking Loom output 1761 + 1293 yds = 3054 yds/hr

Effective production from Samping Machine = $\frac{133 \times 60 \times 70 \times 2}{100}$ = 11 172

The single damping machine is sufficient to cater for both Hessian and Sacking outputs.

Cutting Machines:- There are 2 Cutting Machines installed

average output $\frac{8 \times 60 \times 75 \times 3}{100}$ = 1080 Bag lengths/machine

Two Machines adequate for Bag Cutting requirements

Effective production of Hemming Machine = 120 Bags/hr

Requirements 1208 Bag lengths per hour

There are a total of 22 Hemming, Herakle and Overhead Sewing Machines which is adequate for the Sewing of 1208 Bags/hour.

BALING SECTION

There is one John Shaw 1130 Ton Export Baling Press which is adequate for Baling of Hessian and Sacking but foundation cracked.

APPENDIX 2

POTENTIAL PRODUCTION AT BIRATNAGAR JUTE MILLS

Possible production output obtainable at Biratnagar Jute Mills with present Machinery complement.

Possible Output 2.097 Tons/hour at 15,098 Metric Tons per Annum (Total hours 7200

LOOM COMPLEMENT

150 Hessian Looms
150 Sacking Looms

Basis of Calculation:- Equal shift working Mill to Finishing

HESSIAN CLOTH PRODUCTION

150 Hessian Looms 46.1/2" Reed Space 40" x 10 oz x 11 x 12 (woven 10.1/2 x 12)

Laid Length 111 yards, finished length 107 yds/cut/ Hessian Warp 8.25 lbs/Spyndle, Hessian Weft 10 lbs/Spyndle. Loom Speed 145 Picks per minute @ 67% efficiency.

Weight of Warp per Cut

$\frac{470 \times 111 \times 8.25}{14400}$ = 29.89 lbs = 44.89%

Selvedge Yarn per Cut 0.14 lbs = 0.22%

Weight of Weft per Cut

$\frac{12 \times 41 \times 36 \times 107 \times 10}{36 \times 14400}$ = $\frac{36.55}{66.58}$ lbs = $\frac{54.89\%}{100.00\%}$

Production per Loom

$\frac{145}{12} \times \frac{60}{36} \times \frac{10}{16} \times \frac{67}{100}$ = 8.43 lbs/loom hr 3.83 Kgs/hr
13.49 yds Cloth/loom hr 12.33 metres/hr
13.99 laid yds/loom hr 12.79 metres/hr

150 Looms @ 8.43 lbs per loom hour = 1264 lbs/hr 574 Kgs/hr

SACKING CLOTH PRODUCTION

150 Looms 37.1/2" Reed Space 26.1/2" B Twills 14.24 oz 6 x 8 (woven 5.1/2 x 7.1/2) 2.1/4 lbs per 44" x 26.1/2" Bag. Bag cut length 91", Laid length 111 yds, finished length 104 yds/Cut. Sacking Warp 10.25 lbs, Sacking Weft 34 lbs, Loom speed 156 picks/minute at 75% efficiency.

Weight Warp per Bag

$$\frac{5.5 \times 20}{37} \times \frac{27.5 \times 6 \times 91}{36} \times \frac{10.25}{14400} \times \frac{111}{104} = 0.94 \text{ lbs} = 41.77\%$$

Selvedge Yarn per Bag

$$\frac{6 \times 91}{36} \times \frac{18}{14400} \times \frac{111}{104} = 0.02 \text{ lbs} = 0.09\%$$

Weight of Weft per Bag

$$\frac{7.75 \times 27.5 \times 91}{36} \times \frac{34}{14400} = 1.27 \text{ lbs} = 56.43\%$$

3 Ply Sewing Twine

$$\frac{10.5 \times 30}{14400} = \frac{0.02 \text{ lbs}}{2.25 \text{ lbs}} = \frac{0.90\%}{100.00\%}$$

Production per Loom

$$\frac{156}{7.75} \times \frac{60}{36} \times \frac{14.24}{16} \times \frac{75}{100} =$$

22.39 lbs/loom hr	10.16 Kgs/hr
25.16 yds/loom hr	23.00 Metres/hr
26.85 Laid yds/loom hr	24.56 Laid Metres
9.95 Bags per loom hr	

150 Looms @ 23.39 lbs = 3359 lbs/hr 1524 Kgs/hr

YARN REQUIREMENTS

LIGHT YARNS

8.1/4 lbs Hessian Warp 44.89%	567 lbs	
10 lbs Hessian Weft Yarn @ 54.89%	694 lbs	
10 x 3 lbs Sewing Twine @ 0.90%	30 lbs	
18 lbs Selvedge Yarn @ 0.90%	30 lbs	
10 lbs Sacking Warp @ 41.77%	1403 lbs	
	2724 lbs	1236 Kgs
+7.1/2% Wastage & Maintenance Allowance	204 lbs	93 Kgs
Total	2928 lbs/hr	1329 Kgs/hr

HEAVY YARNS

34 lbs Weft for Shuttle Looms @ 56.43%	1895 lbs/hr	
+10% Wastage & Maintenance Allowance	190 lbs/hr	
Total	2085 lbs/hr	946 Kgs/hr

MACHINERY ALLOCATION BATCHING EQUIPMENT

1 Waste Cleaner)
1 Hard Waste Card) Existing equipment
1 Emulsion Plant)
4 64 Pr. Spiral Fluted Softener)
1 24 Pr/ Spiral Fluted Softener

MACHINERY ALLOCATION LIGHT YARNS

Required production including wastage margin 2928 lbs./hr (1329 Kgs/hr).
For this the following machinery is required:-

6 Breaker Cards)
6 Finisher Cards)
6 1st Drawings 5 Head) Existing equipment
6 2nd Drawings 5 Head)
9 3rd Drawings all 5 head)

8.25 lbs/Spyndle Hessian Warp

$\frac{3600}{4.25} \times \frac{60}{36} \times \frac{8.25}{14400} \times \frac{85}{100}$ = 0.69 lbs/Spindle/hour

$\frac{567}{0.69}$ x 7.1/2% = 883 Spinning Spindles required

10 lbs Hessian Weft

$\frac{3600}{3.75} \times \frac{60}{36} \times \frac{10}{14400} \times \frac{85}{100}$ = 0.94 lbs/Spindle/hr

$\frac{694}{0.94}$ + 7.1/2% = 794 Spinning Spindles

10.25 lbs Sacking Warp

$\frac{3600}{4} \times \frac{60}{36} \times \frac{10.25}{14400} \times \frac{85}{100}$ = 0.9 lbs/Spindle/hour

$\frac{1403}{0.9}$ + 7.1/2% = 1559 Spindles

Total Light Yarn Spinning Spindles Required =
883 + 794 + 1559 = 3236, say 32.36 Frames of 100 Spindles
say 33 Frames of 100 Spindles each

At present there us a total of 43 Light Yarn 4.1/4 Pitch Spinning Frames installed.

MACHINERY ALLOCATION SACKING WEFT AND HEAVY YARN

Required production including Wastage margin 1895 lbs/hr (860 kgs/hr)

2 Teaser Cards
4 Breaker Cards
1 Inter Card
3 Finisher Cards
3 Pushbar 1st Drawing
4 Finisher Drawing 4 Head

34 lbs SACKING WEFT YARN

$\frac{1900}{2.20} \times \frac{60}{36} \times \frac{34}{14400} \times \frac{80}{100}$ = 2.72 lbs per Spindle/hour

$\frac{1895}{2.72}$ + 10% = 766 Spindles = Say 10 Frames x 80 Spindles each required.

There is a shortfall in Heavy Yarn Spinning spindles and to cater for the increased output after renovation a further 2 x 80 Spindle 5.1/2" Pitch Spinning Frames required or alternatively, 1 - 96 Spindle Gardella Pot Spinning Frame.

MACHINERY ALOLOCATION WINDING & TWISTING

Hessian Warp & Sewing Yarn = 597 lbs/hr

$\frac{400 \times 60 \times 8.25 \times 70}{14400 \times 100}$ = 10.3 lbs/Spindle/hr

$\frac{597}{10.3}$ + 7.1/2% = 62 Spindles required

SACKING WARP

$\frac{400 \times 60 \times 10.25 \times 70}{14400 \times 100}$ = 11.96 lbs/Spindle/hour

$\frac{1433}{11.66}$ + 7.1/2% = 129 Spindles required

Heavy Yarn

$\frac{300 \times 60 \times 34 \times 65}{14400 \times 100}$ = 27.6 lbs/Spindle/hour

$\frac{737}{27.6}$ + 10% = 29 Spindles

Total Warp and Heavy Yarn winding Spindles required = 62 + 129 = 191
191 Spindles or 6 Roll Winders required

NB. There are at present 6 Mackroll Winders each of 32 Spindles Plus two 80 Spindle old type Winder.

All Winding machines are in bad condition and require immediate and radical repair.

Hessian Weft Yarn 10 lbs

Effective production of JF Low Cop Winder

$$\frac{1000 \times 3.45 \times 60 \times 10 \times 65}{36 \times 14400 \times 100} = 2.25 \text{ lbs/Spindle/hr}$$

$$\frac{694}{2.25} + 7.1/2\% = 332 \text{ Spindles}$$

There are 3 x 144 Spindle machines installed.

Sacking Weft Yarn 34 lbs/Spyndle

Effective production of JF Low Cop Winder

$$\frac{900 \times 4.15 \times 60 \times 34 \times 60}{36 \times 14400 \times 100} = 8.8 \text{ lbs/Spindle/hr}$$

$$\frac{2724}{8.8} + 10\% = 309 \text{ Spindles}$$

There are three x 144 Spindle Cop Machine installed.

NB. The 6 old type Cop Winders are in bad condition and require thorough overhaul or replacement.

TWIST FRAME

There are Three Twist Frame installed these are adequate for Twist requirements.

1 REELING MACHINE - Installed - adequate for requirements.

MACHINERY ALLOCATION WARP PREPARATION

Hessian Warp Sizing

Laid yardage required for 150 Hessian Looms = 2098 yds/hour or 35 yds/minute.

There are 5 Cylinder Dressing Machines installed and although in poor shape are adequate to keep the 150 Hessian Looms in full operation at an average Sizing efficiency of 45%.

It is however, recommended that Prebeaming equipment be installed and Dressing Machines thoroughly overhauled.

Sacking Warp Dry Beaming

Laid yardage required for 150 Standard Shuttle Looms = 4028 yds/hr or 67 yds/minute.

There are 3 Drybeamers installed and although poorly maintained are adequate to keep 150 Sacking Looms in full operation at an average beaming efficiency of 50%.

MACHINERY ALLOCATION CALENDER, SEWING & BALING

For finishing the Hessian fabric the following equipment is required:-

Hessian Loom output 2024 yds/hour

Effective production at Damping Machine = $\frac{133 \times 60 \times 70}{100}$ = 5568 yds/hr

1 Damping Machine adequate for Hessian output.

Effective production from Calender with 2 widths cloth =

$\frac{23 \times 60 \times 80 \times 2}{100}$ = 2208 yds/hour

One Calender sufficient for Hessian output.

Effective production from Lapping Machine with 90" Laps =

$$\frac{35 \times 90 \times 60 \times 60}{36 \times 100} = 3150 \text{ yds/hour}$$

Two Lapping Machines adequate for Hessian output.

For finishing and sewing the Sacking fabric the following is required:-

Sacking Loom output = 3747 yds/hr

Effective production from Samping Machine = $\frac{133 \times 60 \times 70 \times 2}{100}$ = 11 172

The two damping machines are sufficient to cater for both Hessian and Sacking outputs.

Cutting Machines:- There are 2 Cutting Machines installed

average output $\frac{8 \times 60 \times 75 \times 3}{100}$ = 1080 Bag lengths/machine

Two Machines adequate for Bag Cutting requirements.

Effective production of Hemming Machine = 120 Bags/hr

Requirements 1493 Bag lengths per hour

There are a total of 40 Hemming, Herakle and Overhead Sewing Machines which is adequate for the Sewing of 1493 Bags/hour.

BALING SECTION

There are two baling presses. One 385 Ton and One 1980 Ton, these are adequate to meet requirements for local and export type Bales.

APPENDIX 3 - INFORMATION QUESTIONNAIRE

GENERAL INFORMATION

(a) Name of Company.

(b) Type of Company - public, private, etc.

(c) Date of incorporation.

(d) Initial share capital.

(e) Share holdings.

(f) Past changes of ownership.

(g) Terms under which past changes in ownership are taking place.

(h) Place of business.

(i) Range of business, i.e. manufacturing, trading.

(j) Principal products.

(k) Relationship to other companies and/or Ministries.

SECTION 2 - SALES AND MARKETING.

(a) Main products and their end uses.

(b) Main customers and nature of their businesses.

(c) Product characteristics in terms of quality and technical aspects.

(d) Geographical distribution of sales.

(e) Method of distribution.

(f) Market size and growth for domestic market.

(g) Overseas markets being served.

(h) Potential overseas markets, size and growth.

(i) Licence, patent and other protections if any.

(j) Customers' attitudes towards the company - its products and services.

(k) Major innovations in recent years in terms of:-

- Products
- Marketing methods
- Manufacturing methods
- Customer service.

(l) Commitments to major customers and/or suppliers including orders on hand and unfulfilled orders.

(m) Product weaknesses in terms of:-

- Technical characteristics
- Market acceptability
- Pricing.

(n) Pricing policy.

SECTION 3 - TECHNOLOGY

(a) Specific technology in use by the company.

(b) Alternative technologies available.

(c) Evaluation of the technology in use by the company relative to the other available technologies.

(d) Major technical advances in technology in recent years:

- within the company
- within the country
- internationally.

(e) Major technical problems requiring technical solution.

(f) Outstanding technical features of the company's products

(g) Patent situation.

SECTION 4 - MANUFACTURING

(a) Raw materials used - imported and local.

(b) All products produced.

(c) Plant locations.

(d) Plant capacitie.

- Theoretical
- Achievable
- Practical.

(e) Evaluation of reasons why output is below capacity.

(f) Evaluation of steps already taken by the Management to resolve production problems.

(g) Full details of manufacturing methods.

(h) Full technical assessment of the usefulness of the plant and equipment as well as factory buildings and houses.

(i) Details of visits made by evaluation team.

(j) Full details of major on-going capital expenditure.

(k) Full details of capital expenditure commitments.

(l) Details of future capital expenditure plans.

(m) Expected benefits from investment.

SECTION 5 - MATERIAL SUPPLIES

(a) Detailed list of raw materials used by the company.

(b) For each raw material, precise specification should be determined.

(c) For each raw material, the quantity required to produce one unit of finished product should be determined.

(d) Raw material consumption in volume terms should be determined for the past 5 years.

(e) Sources of supplies for raw materials.

(f) Degree of concentration in supply industry.

(g) Analysis of cyclic nature of raw materials available.

(h) Purchasing procedures adopted by the company.

(i) Details of long term supply contracts with suppliers.

(j) Details of commissions, royalties or any other associated payments.

(k) Historic analysis of price movements in the market.

(l) Historic analysis of prices paid by the company relative to market prices.

(m) Long term price projections.

(n) Opportunities for substitution of imports by local raw materials.

SECTION 6 - MANAGEMENT AND PERSONNEL.

(a) Details of management structure with full organisation chart.

(b) Names and background of personnel in key positions.

(c) Approximate number of employees broken down into:

- Direct labour
- Sales personnel
- Supervisors
- Management
- Technical.

(d) Analysis of skills required.

(e) Details of agreements in existence as follows:-

- Directors
- Employees
- Managing Agents Agreements
- Technical Agreements
- Sales Agreements
- Purchasing Agreements.

(f) Record of industrial disputes.

(g) Labour availability.

(h) Details of bonus and other profit sharing schemes.

(i) Analysis of wage rates relative to other industries in the country.

(j) Details of employees share holding scheme.

(k) Details of pension schemes.

(l) Details of training programmes.

(m) Details of expatriate staff position.

SECTION 7 - RESEARCH AND DEVELOPMENT.

(a) Numbers employed and background of Head of Research.

(b) Level of Research and Development expenditure.

(c) Major innovations in recent years.

(d) Plans for the future.

(e) General industrial developments.

SECTION 8 - LEGAL AND CORPORATE

(a) Detailed analysis of shareholders if applicable.

(b) In the case of Corporate shareholders, evaluation of external shareholders in those corporate shareholders, if applicable.

(c) Corporate structure, that is public, private, foreign involvement, if any.

(d) Types of shares that have been issued.

(e) Voting rights of the shares.

(f) Details of secured and unsecured debts.

(g) Copies of all loan agreements.

(h) Details of debentures.

(i) Dividends record.

(j) Company's secretaries.

(k) Company's auditors.

(l) Other financial advisors.

(m) Details of holdings in subsidiaries.

(n) Details of bank guarantees and other guarantees.

(o) Banking facilities granted.

(p) Details of memorandum and articles of association.

(q) 5 years record of ordinary and extra ordinary annual general meetings.

(r) Employee contracts.

(s) Any other agreements or legal documents.

SECTION 9 - FINANCIAL PERFORMANCE AND EVALUATIONS.

(a) The following basic data should be provided by the company:

- Balance sheet and profit and loss account for the preceding 10 years up to the latest audited accounts.
- Balance sheet and profit and loss account for the current year.
- Financial budget for the current year.
- Forecast profit and loss account balance sheet for 5 years ahead from company management.
- Company plans.
- Company management information statements.

(b) A full analysis of debtors broken down into:

- Age of debtors which in turn is broken down into 0-60 days, 60-90 days,3-6 months,6-12 months, 1-2 years.
- Classification of debtors according to Government,parastatals,local companies,overseas establishments, local individuals, holding companies,subsidiary companies and staff debtors.
- Estimate of bad or doubtful debts.
- Receivable Policy adopted by the company.
- Legal and/or other action already in hand.

(c) Full analysis of inventories. This should encompass a historic analysis and detailed current analysis of raw materials,detailed work in progress and finished goods stocks. The raw materials on order and consignment stock should alsc be shown. Analysis should be carried out on stock obscolescence and valuation placed upon the raw material stocks and component stocks. This area is very important because stock valuations can have a major impact on the net worth of the business.

(d) Analysis of fixed assets. This should include:

- A detailed plant register with the age, original cost, book value and expected remaining life of each element of plant and machinery.
- A detailed evaluation of fixed assets utilisation including machinery inbalances and estimate of maintenance requirements.
- Full details of the company's replacement policy and plant and machinery and equipment on order.
- Details of plant expansions, modernisation and rationalisation.
- A detailed survey of land and buildings including the examination of short term and long term leases and where possible the evaluation of past re-evaluations that have taken place.

(e) Analysis of the cash and semi-cash position that should include:

- Credit policy and detailed list of creditors.
- Taxation including any liability of a deferred nature, e.g. on revaluations of fixed assets.
- Loan repayment schedules.
- Banking facilities.
- Dividends outstanding.
- Inter-group transfers.

(f) Analysis of long term loans - terms and conditions.

(g) Analysis of shareholders equity to calculate:

- An initial paid up equity.
- Share premium account.
- Subsequent increases of paid up equity.
- Bonus issues.
- Capitalisation of reserves.
- Net worth.

(h) Analysis of sales revenue, product by product broken down into:

- Sales volume.
- Selling price changes.
- Discounts and other adjustments.
- Sales tax.
- Sales revenue generated for each product with historical analysis and a 5 year forecast.

(i) Analysis of production costs over the past 5 years with 5 year forecasts broken down into:

- Salary and wages.
- Direct labour.
- Utilities.
- Maintenance and repair.
- Raw material consumption.
- Other direct costs.

(j) A similar analysis of overheads such as:

- Salary and expenses.
- Marketing and distribution costs.
- Other indirect costs.
- Management fees.
- Commissions.
- Royalties and other payments.

(k) Analysis of basic ratios will be carried out that will include the following:

- Pre-tax margin on sales.
- Post-tax returns on total capital.
- Net sales divided by total capital.

- Net sales divided by net worth.
- Interest cover ratios.
- Loan cover ratios.
- Finished stock number of days.
- Raw material stock number of days.
- Domestic debtors number of days.
- Current assets divided by current liabilities.
- Banking overdraft divided by current assets.
- Others as relevant.

(l) All financial statistics already mentioned should be forecast for a period of not less than 5 years ahead.

(m) Methods of evaluation will include the following:

- An analysis of the amount of capital brought into the country by the foreign shareholder, if there is one.
- an analysis of the value of issued and paid up equity.
- an analysis of the net worth of the company as measured by the latest audited accounts, the estimate for the current year and forecast for the future.

(n) Articles of association.

(o) Loan documentation.

(p) Manuals such as purchasing.

(q) Consulting Agreements.

(r) Past feasibility studies.

(s) Past performance evaluation reports.

APPENDIX 4
INFORMATION STATEMENTS

JUTE MILL

OPERATING STATEMENT - SACKING and HESSIAN

FOR THE PERIOD FROM to (working days of Shifts)

TONS DELIVERED	SACKING CURRENT PERIOD TONS	HESSIAN CURRENT PERIOD TONS	SACKING YEAR TO DATE TONS	HESSIAN YEAR TO DATE TONS	SACKING WEEKS TONS	HESSIAN WEEKS TONS
	SACKING	**HESSIAN**	**SACKING**	**HESSIAN**		
	Rs. % Rs. per Ton	Rs. % Rs.per Ton	Rs. % Rs. per Ton	Rs. % Rs.per Ton		
NET SALES VALUE OF						
Cloth and Bag Sales						
Other Sales						
Add Increase/less decrease in stocks of Jute in Process, Yarn in Process Finished Cloth and bags						
	100.00	100.00	100.00	100.00		
DIRECT EXPENSES						
Raw Jute & Batching Oil						
Consumed						
Starch used						
Selvedge Yarn used						
Dyes etc. used						
Packing Materials used						
DIRECT LABOUR						
OVERHEAD EXPENSES						
DEPRECIATION						
PROFIT/(LOSS)						
	100.00	100.00	100.00	100.00		

JUTE MILL
STOCK VARIATIONS AS AT

		Opening Stock Tons	Closing Stock Tons	Increase Tons	Decrease Tons	Increase Tons	Decrease Tons
RAW JUTE							
SACKING WARP	Batching Dept						
	Preparing Dept						
	Spinning Dept						
SACKING WEFT	Batching Dept						
	Preparing Dept						
	Spinning Dept						
HESSIAN WARP	Batching Dept						
	Preparing Dept						
	Spinning Dept						
HESSIAN WEFT	Batching Dept						
	Preparing Dept						
	Spinning Dept						
ABOVE TOTALS TRANSFERRED TO STATEMENT 3							
SACKING							
RAW JUTE	Winding Dept						
	Beaming Dept						
	Weaving Dept						
	Finishing Dept						
Other yarns not included above							
Finished Goods - Cloth							
- Bags							
TOTAL SACKING TRANSFERRED TO STATEMENT 1							
HESSIAN							
RAW JUTE	Winding Dept						
	Beaming Dept						
	Weaving Dept						
	Finishing Dept						
Other yarns not included above							
Finished Goods - Cloth							
- Bags							

JUTE MILL

JUTE YARN PRODUCTION - SACKING & HESSIAN

FOR THE PERIOD FROM TO (WORKING DAYS OF)

	SACKING WARP			SACKING WEFT			HESSIAN WARP			HESSIAN WEFT		
	Tons	%	Rs.	Tons	%	Rs.	Tons	%	Rs.	Tons	%	Rs.
RAW JUTE ISSUED AFTER SELECTION												
Line Transfer + or (-)												
Line Selections + or (-)												
BATCHING OIL Applied												
LINE WASTE TRANSFERRED												
Card Waste +												
(-)												
Thread Waste +												
(-)												
Other Waste +												
(-)												
Less increase add decrease of Jute in process (per Statement 2)												
RAW JUTE AND OIL CONSUMED												
Yarn produced ex spinning frame												
GAIN/(LOSS)												
Spinning Efficiency		____%			____%			____%			____%	
			Rs.						Rs.			
Raw Material and oil consumed transferred to Statement 1 Warp			----						----			
Weft			----						.....			

JUTE MILL

JUTE CLOTH PRODUCTION - SACKING & HESSIAN

FOR THE PERIOD FROM TO (WORKING DAYS OF SHIFTS)

	SACKING		HESSIAN	
	Tons	%	Tons	%
JUTE YARN USED -				
WARP				
WEFT				
SELVEDGE YARN				
STARCH				
SEWING TWINE USED	-----	-----	-----	-----
Less increase add decrease of yarn and cloth in process (transferred from Statement 2)	-----	-----	-----	-----
RAW MATERIAL CONSUMED	-----	-----	-----	-----
CLOTH FINISHED				
BAG PRODUCED	-----	-----	-----	-----
		100.00		100.00
ADD				
WASTE Recovered	-----	-----	-----	-----
GAIN/(LOSS)	-----	-----	-----	-----

JUTE MILL

DIRECT LABOUR SUMMARY SHEET

FOR THE PERIOD FROM _____ TO _____

(_____ working days of _____ shift/

	SACKING			HESSIAN		
	Permanent	Temp	TOTAL	Permanent	Temp	TOTAL
Number of workers						
YARN:						
Jute Godown						
Selection						
Batching						
Preparing						
Spinning						
Winding						
Reeling						
Twisting						
CLOTH & BAGS:						
Yarn Warehouse						
Beaming						
Weaving						
Finishing						
Sewing						
Baling						
Finished Goods Godown						
TOTAL NUMBER			_____			_____
NUMBER PER Loom			_____			_____

Note: The direct labour entered above should include all labour whose job is directly connected with production in the mill. This covers all employees from Raw Jute Godown to Finished Goods Godown including mill mechanics and departmental clerks.

JUTE MILL

DIRECT LABOUR SUMMARY SHEET

FOR THE PERIOD FROM TO

(working days of shifts)

	Permanent Rs	Temp Rs	TOTAL Rs	Permanent Rs	Temp Rs	TOTAL Rs
YARN						
Jute Godown						
Selection						
Batching						
Preparing						
Spinning						
Winding						
Reeling						
Twisting						
CLOTH & BAGS						
Yarn Warehouse						
Beaming						
Weaving						
Finishing						
Sewing						
Baling						
Finished Goods Godown						
TOTAL - transferred to Statement 1						

Note: The above values should include basic rates, overtime earnings, bonus or dearness allowance.

JUTE MILL

SUMMARY OF OVERHEAD EXPENSES

FOR THE PERIOD FROM TO

(working days)

		SACKING Rs	HESSIAN Rs	TOTAL Rs
1.	Indirect wages (including leave pay and provident fund)			
2.	Leave Pay - Direct Labour			
3.	Provident Fund - Direct Labour			
4.	Other Payments to Labour			
5.	Ration Subsidy and Expenses			
6.	Mill Managerial Staff Salaries and Benefits			
7.	Mill Maintenance			
8.	Fuel Consumed			
9.	Power Consumed			
10.	Rates and Taxes			
11.	Insurance			
12.	Welfare Expenses			
13.	Motor Upkeep			
14.	Office Expenses			
15.	Bank Interest			
16.	Loan Interest			
17.	Audit and Legal Expenses			
18.	Establishment Expenses			
19.	Freight Charges			
20.	Selling Expenses			
	Transferred to Statement 1			

OVERHEAD EXPENSES

1.	Indirect wages	-	General Workshop Boiler House Power House Electrical Maintenance Internal Transport Welfare Sweepers Watchmen Fire Brigade Car and Lorry Drivers Pump Attendants Crane Drivers Store Attendants etc.
7.	Mill Maintenance	-	Machinery Repairs and Furnishings Buildings Maintenance Internal Transport Fire Fighting Equipment General Workshop Lubricating Oil Electrical Repairs and Maintenance Roads, Drains, etc.
13.	Welfare Benefits	-	Housing Medical Expenses Sanitation Social Amenities Maternity Benefits etc.

APPENDIX 5

Estimated Expenditure on Rehabilitation & Balancing Equipment required for Raghupati Jute Mills

Rehabilitation Parts & Accessories

Parts delivered C.I.F. Biratnagar	£ 965,250

Balancing equipment required (New machine) C.I.F. Biratnagar.

1 Teaser or Breaker Card with Roll Former 1 Finisher Card with Roll Former and Feed Roller 1 1st Drawing Frame (2 Head) 1 Finisher Drawing Frame (4 Head) 4 x 80 Spindle 5.1/2" Pitch SpinningFrames or 2 Pot Spinners 2 Prebeaming Machines with Creels and Sizing Creels	£1,377,000
Supply of Technicians for Installation and Training over 9 months	£ 250,000
	£2,592,250

Estimated Expenditure on Rehabilitation & Balancing equipment required for Biratnagar Jute Mills

Rehabilitation Parts & Accessories

Parts delivered C.I.F. Biratnagar	£1,548,800

Balancing equipment required (New Machines) C.I.F. Biratnagar

2 x 80 Spindle 5.1/2" Pitch Spinning Frames or 1 Pot Spinner 2 Prebeaming Machines with Creels and Sizing Creels	£ 432,000
Supply of Technicians for Installation and Training over 9 months	£ 250,000
	£2,230,800

Renovation of Machinery at Raghupati Jute Mills

To bring Raghupati Jute Mills up to higher productivity and improved quality it will be necessary to renovate the plant from Batching to Finishing.

An estimate as to likely cost of imported spares and accessories has been given with lump sums against the respective sections of the Mill.

Batching Department		
1 Hard Waste Card 1 Emulsion Plant 2 Softeners		£ 71,000
Carding Sections Light & Heavy Yarns		
2 Teaser Cards 6 Breaker Cards 8 Finisher Cards		£ 145,200
DRAWINGS Light and Heavy Yarns		£ 207,700
SPINNING Light and Heavy Yarns		£ 167,500
Winding Warp		£ 38,000
Winding Weft		£ 18,000
Looms		£ 180,000
Finishing Department		
Calender Lapping Damping Cutting & Sewing		£ 50,000
	£ 877,500	FOB
Allow 10% C.I.F. Biratnagar	£ 87,750	
	£ 965,250	

Renovation of Machinery at Biratnagar Jute Mills

To bring Biratnagar Jute Mills up to higher productivity and improved quality it will be necessary to renovate the plant from Batching to Finishing.

An estimate as to likely cost of imported spares and accessories has been given with lump sums against the respective sections of the Mill.

Batching Department

1 Emulsion Plant)		
1 Hard Waste Card)	£	131,000
4 Softeners)		

Carding Section Light and Heavy Yarns

2 Teaser Cards	£	17,000
10 Breaker + 1 Inter	£	93,500
9 Finisher Cards	£	86,850

DRAWINGS Light and Heavy Yarns

9 1st Drawing - 3 Mackhigh	£	88,650
10 2nd Drawing	£	107,500
9 3rd Drawing	£	126,000

Spinning Light and Heavy Yarns

8 x 5.1/2" Pitch Spinning Frames	£	52,000
43 x 4.1/4" Pitch Spinning Frames	£	193,500
Warp Winding	£	76,000
Weft Winding	£	36,000
Looms	£	300,000

Finishing Department

Calender Lapping Damping Cutting & Sewing	£ 100,000
	£1,408,000
Allow 10% C.I.F. Biratnagar	£ 140,800
	£1,548,800

APPENDIX 6

Calculations showing cost per Metric ton of Hessian

Based on standard 11 Porter x 12 Shots x 10 oz x 40" Hessian

International Prices as at December 1989

Price per 100 yards - £14.60

Cost per ton = £514.85 or Nepal Rs 23,065 per MT