International Workshop on
“Promotion of Jute and Jute Derivatives in Nepal”

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Mr. G. P. Pradhan

Proceedings of a workshop held in
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Jointly organised by
HMG/N, Ministry of Agriculture and Cooperatives
International Jute Study Group
Nepal Jute Mills Association
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EDITORIAL

In the history of jute crop of Nepal, it is the first time that a workshop of international level took place where jute growers, industrialists, research and development workers of Nepal stayed together and put combine effort to promote not only jute but jute derivatives too. The presence of a member of National Planning Commission, the secretary of Ministry of Agriculture and Cooperatives, Secretary General of International Jute Study Group, experts from Bangladesh and India, vice president and executive director of Federation of Nepalese Chamber of Commerce and Industry, the branch manager of Nepal Bangladesh Bank Limited as well as other dignitaries directly or indirectly related to jute crops and industries added extra height to this workshop.

The valuable suggestions, comments and criticisms received from all the distinguished guests, technical as well as country paper presented and the lively discussion among the participants came up with concrete recommendation that if sincerely followed will of course bring tremendous impact in the promotion of jute and jute derivatives in Nepal.

The government of Nepal has to formulate and implement jute crop policy and strategies. One of the strategies will be to form a Jute and Allied Fibres Development Board consisting of equal number of participants from jute and allied fibre growers, industrialists, financial institutions and the government. The function, role, rules and regulation of the board shall be promulgated only after a series of discussion, workshop and interaction among stakeholders. The stakeholders need to support the board not only technically, administratively but also financially. The main task of the board will not only be to increase the production and productivity of jute crops but also to promote marketing of raw jute and fibres and the derivatives. However, the participation of the government in this board will be for only five years, after which it will act as referee or facilitator only.

In the wake of environmental protection and biodiversity conservation moments taking place through out the world, Nepal has to promote jute and other allied fibres that will conserve our environment as well as fetch foreign currencies. In order to take advantages from the established institution working for the promotion of fibre crops, it is imperative for Nepal to be a member of International Jute Study Group.
ACKNOWLEDGEMENTS

International Workshop on “Promotion of Jute and Jute Derivatives in Nepal” was successfully completed as a result of the contribution of many people and organizations some of which are as follows:

Ministry of Agriculture and Cooperatives (MOAC), International Jute Study Group, Bangladesh, Jute Diversification Promotion Center (JDPC), Bangladesh, National Centre for Jute Diversification (NCJD), India; Department of Agriculture (DOA), Nepal Agriculture Research Council (NARC); Federation of Nepalese Chamber of Commerce and Industry (FNCCI), Agriculture Enterprise Center (AEC), Nepal Jute Mills Association (NJMA), and jute growing farmers of Nepal

The organizing committee is thankful to the Honourable member of National Planning Commission, Dr. Hari Krishna Upadhyaya and the Secretary of the Ministry of Agriculture and Cooperatives, Mr. Govind Prasad Pandey for their valuable presence and thoughtful remarks.

Enormous thanks go to Mr. T. N. Kumar, Secretary General of International Jute Study Group for his continuous support right from the conceptual development to the successful completion of the workshop. The financial as well as technical supports of IJSG in conducting the workshop are also highly acknowledged.

A special thank goes to Mr. Diwakar Golchha, Second Vice President, FNCCI; and Mr. D. S. Pathik, Executive Director, NARC. The contributions of NJMA and Jute Research Program in local level management are also duly acknowledged.

National Industrial Crop Development Program is highly appreciated for its superb performance as the secretariat of the workshop organizing committee.

The organizing committee would like to appreciate the continuous efforts and valuable contribution of Mr. Gautam Prasad Pradhan, an agronomist, before, during and even after the completion of the workshop.

Last but not the least; we would like to thank all the participants of the workshop for their valuable presence and cooperation.
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<tr>
<td>AEC</td>
<td>Agriculture Enterprises Centre</td>
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<tr>
<td>CFC</td>
<td>Common Fund for Commodities</td>
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<td>CMC</td>
<td>Carboxyl Methyl Cellulose</td>
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<td>COP</td>
<td>Committee on Projects</td>
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<td>DADO</td>
<td>District Agriculture Development Office</td>
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<td>DISSPRO</td>
<td>District Level Seed Self Sufficiency Program</td>
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<td>DOA</td>
<td>Department of Agriculture</td>
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<td>ED</td>
<td>Executive Director</td>
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<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<td>FNCCI</td>
<td>Federation of Nepalese Chamber of Commerce</td>
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<td>HMG/Nepal</td>
<td>His Majesty's Government of Nepal</td>
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<td>ICB</td>
<td>International Commodity Body</td>
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<td>ICDD</td>
<td>Industrial Crop Division</td>
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<td>IIO</td>
<td>International Jute Organization</td>
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<td>IJSG</td>
<td>International Jute Study Group</td>
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<td>JAF</td>
<td>Jute and Allied Fibers</td>
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<td>JBO</td>
<td>Jute Batching Oil</td>
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<td>JDPC</td>
<td>Jute Diversification Promotion Centre</td>
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<td>JESCS</td>
<td>Jute Entrepreneur Service Centre</td>
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<td>JRC</td>
<td>Jute Research Centre</td>
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<td>Jute Research Program</td>
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<td>Kg</td>
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<td>LDPE</td>
<td>Low Density Polyethylene</td>
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<td>MCC</td>
<td>Micro Crystalline cellulose</td>
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<td>MOAC</td>
<td>Ministry of Agriculture and Cooperatives</td>
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<td>MT</td>
<td>Metric Tons</td>
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<td>MTO</td>
<td>Mineral Turpentine Oil</td>
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<td>NARC</td>
<td>Nepal Agricultural Research Council</td>
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<td>NCJD</td>
<td>National Centre for Jute Diversification</td>
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<td>NICDEP</td>
<td>National Industrial Crop Development Program</td>
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<td>NJDB</td>
<td>Nepal Jute Development Board</td>
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<td>Nepal Jute Mills Association</td>
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<td>NSC</td>
<td>National Seed Company</td>
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<td>PAC</td>
<td>Project Appraisal Committee</td>
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<td>PSCB</td>
<td>Private Sector Consultative Board</td>
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<td>RMBs</td>
<td>Raw Material Bank</td>
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<td>TAS</td>
<td>Tarahara Agriculture Station</td>
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<td>TPC</td>
<td>Trade Promotion Centre</td>
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<td>TRAs</td>
<td>Textile Research Associations</td>
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<td>VAT</td>
<td>Value Added Tax</td>
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EXECUTIVE SUMMARY

A two days workshop on “Promotion of Jute and Jute Derivatives in Nepal” was held from 21 to 23 March 2005 organized jointly by His Majesty’s Government of Nepal, Ministry of Agriculture and Cooperatives (MOAC), International Jute Study Group (IJSG) and Nepal Jute Mills Association (NJMA) at the centre of jute growing region and industrial hub of Nepal, the Biratnagar.

A good will visit of Mr. T. Nanda Kumar, Secretary General of IJSG to the Secretary, MOAC, HMG/Nepal on September 2004 resulted into the organization of this workshop at Biratnagar, Nepal.

Considering the importance of this workshop the secretary, MOAC, Mr. Govind Prasad Pandey formed a high level workshop organizing committee comprising of following members from different institutions.

1. Dr. Krishna Bahadur Shrestha, Joint Secretary, MOA&C, Chairman
2. Dr. Deep Bahadur Swar, Deputy Director General, DOA, Member.
3. Dr. Surya Laxmi Maskey, Director (Crop & Horticulture) NARC, Member.
4. Dr. Dev Bhakta Shakya, ED, AEC, Member.
5. Mr. Parikshit Raj Sharma, Senior Economist, MOA&C, Member.
6. Mr. Champa Lal Rathi, Chairman, NJMA, Member.
7. Ms. Niru Dahal Pandey, Acting Chief, NICDEP, DOA, Member Secretary

Giving special importance to the workshop, despite their very busy schedule, Honourable Dr. Hari Krishna Upadhyaya, member of National Planning Commission, was present as the chief guest, who inaugurated the workshop by lighting the special traditional lamp and the secretary of Ministry of Agriculture and Cooperatives, Mr. Govind Prasad Pandey chaired the inaugural session.

Fifty (50) participants from different organizations viz. International Jute Study Group, Bangladesh, Jute Diversification Promotion Center (JDPC), Bangladesh, National Centre for Jute Diversification (NCJD), India, Ministry of Agriculture and Cooperatives (MOAC), Department of Agriculture (DOA), Crop Development Directorate, National Industrial Crop Development Program (NICDEP), Regional Agriculture Directorate, District Agriculture Development Offices (DADOs), Nepal Agriculture Research Council (NARC), Jute Research Program (JRP), Regional Agriculture Research Centre, Federation of Nepalese Chamber of Commerce and Industry (FNCCI), Agriculture Enterprise Center (AEC), Nepal Jute Mills Association (NJMA), Jute Industries, Trade Promotion Centre (TPC), District Cottage and Small Industries Office and jute growing farmers of Nepal took active part in the workshop.

The workshop was conducted in four sessions, inaugural, technical, plenary and closing, followed by a field trip on third day.

Eight technical papers were presented on behalf of IJSG, JDPC, Bangladesh; NCJD, India; and NICDEP, JRP, NJMA, AEC, DADO, Nepal in the two technical sessions of the workshop.
Inaugural Session

The workshop started with the welcome address made by Dr. K. B. Shrestha, Chairperson of workshop organizing committee and Joint Secretary, MOAC. Dr. Shrestha mentioned the importance of jute in Nepal and expressed his delight in welcoming all delegates from Nepal, India and Bangladesh. Ms. Niru Dahal Pandey, Member Secretary of workshop organizing committee and chief, NICDEP explained the background and the objectives of the workshop.

She highlighted the objectives of the workshop are to share the information, technologies and measures adopted to promote the jute sector; to workout common program which is beneficial for jute producing countries and to explore the internal and external markets of jute products. She expected that the workshop would help Nepal to identify intricacies in the area of production, application, trade and marketing JAF and their products and stimulate in taking appropriate decisions.

In this inaugural session around hundred participants from different walks of life were present. Seven dignitaries, Mr. Champa Lal Rathi, Chairman, Nepal Jute Mills Association; Mr. Mahendra Kumar Shah, Jute Growing Farmer; Mr. Basu Dev Golyan, Director, Morang Byapar Sangh; Mr. Kishor Pradhan, Udyog Sangathan Morang; Mr. Diwakar Golchha, Second Vice President, FNCCI; Mr. D. S. Pathik, Executive Director, NARC and Mr. T. Nanda Kumar, Secretary General, IJSG delivered few words.

Mr. Champa Lal Rathi highlighting the national importance of jute industries mentioned that around 18,000 people are directly employed in nine jute mills operating in Morang and Sunsari districts which are exporting total processed jute worth around NRs. 270 million (US$ 38.6 million). He said that the situation at the time of opening of jute industries is quite different than today’s era of open market and prevailing principles of World Trade Organization. He expressed that the jute industries are always ready to work with government towards uplifting jute crop production as well as flourishing jute markets.

Jute grower, Mr. Mahendra Kumar Shah pointed out the reasons for decreasing jute acreage in Nepal. He said that the major factors for such decline were the lack of quality seed and fertilizer and the inappropriate price of raw jute.

Mr. Diwakar Golchha, the Guest of Honour, expressing his happiness for the organization of such a high level multinational gathering that took place first time in the history of jute development in Nepal pointed out that this crop was earlier produced in Nepal in the quantity of more than 90,000 Mt. He mentioned that the price of raw jute has increased by more than 100 folds in three decades where as that of paddy increased by 10 folds only.

He said that the industries are dependent on Bangladesh and India for raw material, skilled labour, and spare parts and above all need to compete with them for the marketing of finished products. In spite of such difficulties he stated that Nepalese industries can compete with other neighbouring countries in exporting jute to other countries provided Nepalese government facilitate them by initiating subsidies as prevailing in Bangladesh and India.

The Executive Director of Nepal Agriculture Research Council, Mr. D. S. Pathik highlighted the importance of jute crop and the history of jute research in Nepal. He recalled the coordination of NARC with International Jute Organization and expressed his enthusiasm to have cordial cooperation with IJSG in the field of exchange of
Germplasm, training etc. He also mentioned that NARC will give due emphasis (financial as well as manpower) in strengthening jute research in Nepal.

The Special Guest, Mr. T. Nanda Kumar, Secretary General of IJSG expressed his extreme happiness to be the co-host of the international workshop on Promotion of Jute and Jute Derivatives in Nepal. He started with the concern of people asking him about the future of jute in the world wherever he went. He observed that jute lost its essence from the world due to introduction of synthetic material; however, it is regaining its pace slowly but steadily and will dominate world market once again in near future due to its eco friendly nature, increased concern of environment in developed world and WTOs rules of subsidy free environment in the world.

Mr. Secretary General, T. Nanda Kumar suggested for fine tuning of existing jute development and promotion policies and strategies of countries like Nepal. Giving due concern to the issues raised by previous speakers he requested to look after the issues one by one. He suggested determining whether there is a problem in seed, in retting, in quantity and quality of fiber produced in Nepal or in product diversification. If there is a technology gap in the processing sector, India, Bangladesh and Nepal can cooperate and update and entire production of three countries can collectively be taken to global market.

At the end Mr. Secretary General stated that IJSG is always looking forward to work with Nepal to uplift Jute in this region and also hoped that Nepal will join IJSG as a member in near future.

The chief guest of the inaugural session, Honourable Dr. Hari Krishna Upadhyaya, member, National Planning Commission, giving due importance to concern raised on drastic decline in jute areas, directed the concerned institution to ascertain the competitiveness of this crop over others. He was sure that such study will help the government to formulate suitable policies or tuning of present policies for the promotion of jute crop and jute industries in Nepal. He said that National Planning Commission will support all kinds of endeavours directed towards the promotion of jute in Nepal.

The Deputy Director General, Department of Agriculture and a member of workshop organizing committee, Dr. Deep Bahadur Swar, on behalf of organizing committee offered vote of thanks to all the dignitaries, resource persons, delegates and participants for their presence, valuable suggestions and assistances. In the same occasion Mr. Deputy Director General also mentioned the top priority accorded by His Majesty’s Government of Nepal to the promotion of special industrial crops to increase national income as a mean of poverty alleviation and directed District Agriculture Development Offices to revitalize their efforts towards sustainable commercial production of this crop.

The chairperson of the inaugural session, Mr. Govind Prasad Pandey, the secretary, Ministry of Agriculture and Cooperatives, in his closing remarks emphasized the need of cordial relation among not only farmers, researcher and development workers but traders and mills too for the sustainable development and the promotion of jute. He, praising the efforts started by National Industrial Crop Development Program of Department of Agriculture towards promoting coordination among stakeholders of industrial crops, expressed his view that farmers and industries should also begin playing proactive role to create confidence among each other.

He also emphasized to develop technologies that reduce cost of production and increase the production of quality raw (high grade) jute. Mentioning the need of focus
on market research including research on product diversification, Mr. Secretary also requested farmers to give extra care and to go for commercial quality jute production. He also requested industries to support jute crop promotional activities that assist in fulfilling the domestic demand of quality raw jute by mills.

In the technical session eight papers were presented in different subjects from relevant institutions. The salient features of presentations were as follows:

**TECHNICAL SESSION**

*Technical Session 1*

**Chairman: Mr. D. S. Pathik, Executive Director, NARC, Nepal**


Presented by: Ms Niru Dahal Pandey and Mr. Gautam Prasad Pradhan National Industrial Crop Development Program, DOA, Harihar Bhawan, Nepal.

In this paper authors described the current scenario of jute crop in Nepal highlighting the historical background of jute development and it's important in Nepalese economy. Present production status, marketing status, institutional setup as well as present policies and strategies were covered followed by challenges, opportunities and policy recommendation at the end.

The challenges perceived by authors for jute promotion in Nepal were

- Higher cost of production as compare to neighbouring countries
- Wider gap between yield in research and farmers' field
- Wider use of plastic materials in country and
- Lack of product diversification.

The paper mentioned following opportunities available for the promotion of jute in Nepal:

- Area suitable for jute production in Nepal is around 1,37,000 Ha where as recent Jute cultivated area stands around 11,790 Ha only
- Wider gap between yield in research (3Mt/Ha) and farmers field (1.45Mt/Ha)
- Very High Demand of Raw Jute
- Increasing demand of jute products in international markets.

**Policy Recommendation**

- District Agriculture Development Office must give priority to this crop
- Research institute must be strengthen
- NICDEP and DADO must be strengthen with jute specialists: Training and workshop opportunities shall be provided to the NICDEP as well as DADO staffs
- Farmers should form a Jute Growers Association
Paper 2: Extension strategies of jute crop production and development from DADO and farmers perspective.

Presented by: Mr. Balram Koirala, Mr. Hemsagar Gautam and Mr. Sankar Lal Shakya, District Agriculture Development Offices of Morang, Sunsari and Jhapa

The paper highlighted the status of jute farming in eastern Nepal. It mainly focused on constraints faced by farmers in jute production and marketing. Mentioning the activities of DADOs for jute development, the paper made following recommendations:

- Availability of suitable production package of practices in mass scale
- Assured quality seed availability
- Training opportunities for extension staff
- Modern ratting technology
- Fixation of minimum support price before planting
- Credit facility for jute growers
- Registration of jute growers


In this paper, the present status of jute industries, as well we recent role of Jute Mills Association in promoting production and manufacturing of jute were discussed. Explaining the scope of product diversification, the paper indicated following challenges and future strategies of Jute Mills Association.

Challenges

- Low raw jute production
- Absence of local jute market
- Use of plastic packing material
- Land locked country
- Rigid labour law
- Stores auxiliary material
- Technical know how

Future strategies

- Approach to other Jute Product Manufacturing Countries for new technology through which industry can manufacture value added Jute Products considering W.T.O. & SAFTA requirement.
- With the help of government of Nepal, Promote the jute products as eco-friendly by compulsory using of jute products for packing of food grains & other product.
- To approach to government of Nepal to provide facilities, tax benefit & subsidies on export to third country like India & Bangladesh.
- Promote jute "As a Natural Product which is bio-gradable & therefore does not cause environmental damage" along with government & other agencies.
- Develop awareness amongst the consumers about the environmental advantages of Jute bags in comparison with plastic bag along with its reusable value.
- To find out other international market in addition to India for the product of Nepal.
- To approach government of India for allowing Jute industries of Nepal to participate in government's tender and also allow our products in sugar industries of India.
- Inspiring all jute industries to go for product diversification for the fast growth of the jute industry.

In conclusion, NJMA observed that the government of Nepal & other International authorities are now serious for the growth of Jute industry in Nepal. And it expected that with few more favourable policies from government to promote the jute products and few favourable supports from jute producing countries & other international authority jute industries of Nepal will touch a new high.

**Paper 4: Jute research in Nepal and future perspectives.**
Presented By: Mr. T. B. Ghimire, Jute Research Program, NARC

The paper explained the research activities and future research perspectives of jute in Nepal. It mentioned that the current area, production and productivity of jute is 11790 hectares, 16890 metric tones and 1432 Kg/ha respectively.

Itahari-1 of *C. capsularis* and Itahari-2 of *C. olitorius* jute varieties were officially released by NARC for general cultivation in eastern terai of Nepal in 1999.

Development of low cost cultivation and retting technologies and varieties suitable for multiple cropping systems were the main research strategy of the jute research program in Nepal.

Low productivity; scarcity of retting water; diseases like stem rot, collar rot, root rot and yellow mosaic; insects like hairy caterpillar, semi looper, mite and apion; and also weeds were the main challenges in jute production.

Owing to employment generation, sustaining soil productivity, and environment friendly in nature jute has good scope in sustainable agriculture development in Nepal.

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**Technical Session 2:**

**Chairman: Dr. Badri Ojha, Executive Director, FNCCI**

**Paper 5: Promotion of Jute and Jute Derivatives in Bangladesh Perspective**
Presented by: Dr. A.B.M. Abdullah, Executive Director, Jute Diversification Promotion Centre (JDPC), Bangladesh.

The paper started with the importance of jute in respect to environmental protection, sustainable development and ecological balance of earth. It briefed about the technological development for diversification of uses focusing on Bangladesh situation and establishment of Jute Diversification Promotion Centre.

The paper described the objectives, scope, functions, structure, as well as working procedures of JDPC. Highlighting the potential list of technologies and products identified by JDPC, Dr Abdullah pointed out the following important issues.
"At present jute products are produced in batch wise but for continuous supply modern continuous production engineering and quality control system have to be developed. So that in this free market economy quality, colour, design, fashion of the product can be change according to consumer need. Thus institutional framework for training and R&D activity should be pursuing in both the ends. In this respect we have initiated a few training courses with the support of IJSG and other govt. & private organizations.

There is a dart of appropriate machine and equipments for manufacturing diversified jute products. In this field there is limited/no R&D activities is really going on. So to fulfil this gape national and international bodies both private and public sector should come for word with specific plan and program.

Quality of raw material is very important for production of diversified jute products. Here variety and retting technology along with water are very important. For quality fiber special attention is needed in the farmer level. So that quality fiber is assured. There is an enough scope for diversified uses of jute in multiple ways which has indicated above. Quality fiber, appropriate technology, constant market promotion, research & development & their application are major requirement and constraint which have to be overcome to widen diversification of jute uses in home & abroad. So commitments with constant pursuance are necessary for achieving this goal. It is a dynamic process. So, both national & international organization must work hand to hand in a most appropriate way. From Bangladesh I can assure our colleagues in Nepal that with the collaboration of International Jute Study Group we can easily achieved this as jute and allied fibres are the indigenous natural resources only available in this part of the world. For your holistic appreciation I am giving a list of diversified jute products which easily be produced from jute & allied fibres as fiber, yarn, fabric and their modifications."

**Paper 6: Potential of Jute and Jute Derivatives in India.**

Presented by: Dr. T. K. Guha Roy, National centre for Jute Diversification (NCJD), India.

Dr. Roy, in his paper, exclusively presented technological basis for diversification of jute products. Among other things he pointed out following important technical information.

Jute is a natural fibre and is second only to cotton in amount produced and variety of uses. It has traditionally been used as packaging materials and to some extent carpet baking cloth. Many markets of jute have eroded when the synthetic materials came into the world market as an alternative and cheaper packing materials. The steady decline in traditional jute products has led to diversify the uses of jute. As a result of research activities/ efforts, considerable progress has been made in identifying, developing and commercializing a number of diversified products.

The various product developments in the field of diversification resulted from the following two types of activities:

- Diversification of jute mill products from traditional items to a mix variegated non-traditional products such as mats, matting, bleached and dyed cloth, etc.
- Utilisation of jute fibre/ yarns outside the jute mill such as handloom/ power loom /carpet/ processing/ handicraft sector
Like the textile industry, jute industry is also comprised of two different segments i.e. organized mill sector and decentralized handloom/power loom/cottage/handicraft sector. Organized jute mills are mostly located in the eastern part of the country. The decentralized handloom/handicraft units are scattered in different locations and are specialized in different diversified jute products. Consequently, a number of diversified jute products have been developed from jute fibre, yarn and fabric. The following are the market leaders in terms of consumer acceptance, marketing success and sales turnover:

- Jute & jute blended floor coverings
- Jute shopping bags & travel accessories
- Jute & jute blended fabric
- Gift articles
- Wall Hangings

Wet/chemical processing of jute is an essential step for value addition and carried out in fibre, yarn and fabric forms. The processes include scouring, bleaching, dyeing, printing and finishing. However, jute differs from cotton in chemical composition. The action of chemicals on jute is somewhat different from that of cotton. The processes for cotton are therefore not directly applicable to jute. For example, scouring of jute goods, like cotton, with caustic soda solution under pressure results in high losses in strength and weight, bleaching with bleaching powder solution gives unsatisfactory bleaching results, random selection of colourfast dye-classes from the range of cotton and wool dyes generally do not show the same high colourfastness on jute, drying of wet processed jute goods in the sun causes fading of colour/shade etc.

The appropriate chemical processing technology will therefore have to be provided to the decentralized units on priority basis. Moreover the market concepts for domestic and global are abolishing and there will be one market that is "Global Market". Both the sectors are aware of the needs to equip and upgrade the current standard of working to meet consumers’ demand and market standards. Therefore transfer of appropriate technology to the decentralized units will certainly enhance their competitiveness, volume of production and fetch high value of their products as well.

Technical Session 3:

Chairman: Mr. T. Nanda K. Roy, Secretary General, IJSG

Paper 7: Role of AEC in improving policy environment for commercialization of jute in Nepal.

Presented by: Dr. D. B. Shakya, Executive Director, AEC, FNCCI.

Dr. Shakya mentioned about the facts and figure on world trade of jute goods, jute production in Nepal, export and import of jute products from and by Nepal. Mentioning the Bangladeshi and Indian government’s support for jute development he advocated the need of similar support from Nepalese government too. Pointing out the required promotional activities such as:

- Undertaking extensive publicity of jute and jute goods as environment-friendly natural fibre and diversification of the uses of jute products
• Enhancing technological strength and productivity and facilitating reduce cost and attain internationally accepted standard of quality of exportable products and thereby consolidate their competitiveness
• Ensuring maximum use of local raw materials in the production of export goods and encouraging establishment of backward linkage industries;
• Participation in the international trade fairs, specialized fairs, single country exhibitions abroad and also sending out trade missions, with a view to consolidating our position in the existing market and creating new markets;
• Undertaking programs for raising quality standard and expansion of market

Dr. Shakya emphasized the need of public private partnership approach. At the end he pointed out the AEC’s possible roles such as:
• AEC could take a crucial role in commodity policy development provided it was agreed that such policy is recommended from the floor.
• It also could play a facilitator’s role in market promotion through organizing buyer sellers meetings, trade fairs etc.
• It could also provide Market Information Service and act as market intelligentsia, in relation to WTO’s SPS/TBT requirements and issues

Paper 8: Role and Strategies of the International Jute Study Group (IJSG)
Presented By: Mr. Md. Siddiquur Rahman, IJSG, Dhaka.

In this paper Mr. Rahman introduced International Jute Study Group as an Intergovernmental Body set up under the aegis of UNCTAD to function as the International Commodity Body (ICB) for Jute, Kenaf and other allied fibres. Mentioning the objective of IJSG in detail he pointed out the strategies and roles of IJSG as follows:

Strategies
• Retain and if possible, increase the market for traditional jute and kenaf products
• Develop new applications of traditional products
• Develop new products using the advantages of natural fibres
• Improve fibre quality
• Improve productivity and product quality
• Make use of the sustainable development agenda
• Increase consumer awareness by highlighting the environment friendliness of jute and kenaf
• Address trade issues
• Address supply side management issues
• Create an R&D networks
• Highlight Employment Opportunities

Functions
• To initiate, sponsor, supervise, monitor, and act as a catalyst with respect to projects and related activities aimed at improving the structural conditions of the world jute economy and the general economic well-being of those employed therein. In exceptional cases, the involvement of the Group in the implementation of projects shall be approved by the Council,
provided that this involvement shall not bring about any additional costs for the administrative budget of the Group

- To conduct consultations and exchanges of information on the international jute economy
- To provide and improve statistics and market intelligence on jute and jute-based products in consultation with the Food and Agriculture Organization of the United Nations and other appropriate bodies
- To undertake studies on various aspects of the world jute economy and related issues; and
- To consider problems or difficulties this may arise in the international jute economy. In implementing its functions, the Group takes into account the activities of other relevant international organizations, including the Food and Agriculture Organization of the United Nations (FAO)

Recalling Nepal as a member of erstwhile IJO and her active participation in the promotion of JAF, Mr. Rahman mentioned that the promotional activities such as this workshop held in non-member country like Nepal will facilitate the promotion of JAF products in that country, thereby encouraging concern government to decide in favour of more usage of JAF products and also to work more closely with IJSG.

PLENARY SESSION

In plenary session the participants were divided in to three groups to discuss and come up with recommendation on three critical areas: First on production technology, Second on Jute Marketing and Third on product diversification (jute and jute derivatives). Groups’ recommendations were as follows:

**Group I: Production Technology**

**Constraints related to jute production**

- High cost of cultivation
- Seed unavailability
- Problem in retting due to water and labour
- Weed problem
- Low price
- Low priority in jute research and development
- Unavailability of inputs in time
- Lack of coordination among stakeholders

**Solutions**

- Seed: Foundation Seed-NARC (JRP)
- Certified Seed- National Seed Company/CBSP
- Verification of technologies related to weeding and retting.
- Low cost need based technologies generation.
- Training to technicians and farmers.
- Jute crop to be prioritized as a commercial crop.
- A separate jute policy implementing body to be formed.
- Strong coordination among growers, industrialist and research and development on participatory approach.
- Assure supply of quality inputs in time.
- A jute crops well fare fund is established for research and development.

Group II: Jute Marketing

The group recommended following measures to promote internal and external jute marketing:

**Domestic Marketing**
- Awareness program:
  Eco-friendly, biodegradable and durable
- Regulatory measures:
  Compulsory use of jute packaging materials for food grains
- Trade fair/ exhibition/ documentary
- Advertisement (Radio, T.V. etc)
- Marketing information services- Place, process, linkages, price trend, time
- Provision of insurance.
- Infrastructure (Especially godown) through cooperatives.
- Product modification, diversification, blending.

Export marketing
- Explore new markets.
- Reduce taxes- custom, VAT.
- Trade fairs, workshop, buyer-seller interaction.
- Marketing information services system.
- Increase competitiveness by technical know-how, quality control.
- Proactive role of government machinery.
- Linkage with international organizations.

Group III: Product diversification (jute and jute derivatives)

The third group presented comprehensive recommendation on policy, programs, planning, strategies as well as possible projects for organized and decentralized sectors that bring required product diversification in jute and jute derivatives.

<table>
<thead>
<tr>
<th></th>
<th>Organized Sector</th>
<th>Decentralized sector</th>
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</thead>
<tbody>
<tr>
<td><strong>Policy:</strong></td>
<td>Adoption of modern technology for jute diversified products</td>
<td>Development and strengthening of unorganized handicraft sector</td>
</tr>
<tr>
<td><strong>Programs:</strong></td>
<td>Diversification of non-conventional jute products in mills.</td>
<td>To create employment opportunities for small entrepreneurs, Women folk, NGOs through diversification of jute products.</td>
</tr>
<tr>
<td><strong>Planning:</strong></td>
<td>Improvement in quality and reduction in cost.</td>
<td>Provide forward and backward linkages.</td>
</tr>
</tbody>
</table>
Strategies:
Technical know how / supports from experts for implementation of technology.

To set up 2 Jute service Centre and Raw Jute Materials Bank—one in Sunsari, Itahari and another in Thamel, Kathmandu.

Projects:

1. Bleaching at batching stage without capital investment on machinery.
2. Improvement in brighter colour of raw jute of Nepal which is dark in colour.
3. Bleaching and dying at fabric stage in single stage.
4. Super white colour in two bath systems.
5. Bleaching of jute fibre to produce lighter count (6-8 lbs) of yarn.

1. Training of artisans through Jute Service Centre for production of jute diversified products.
2. To provide raw materials to artisan in small quantity at mill gate price through Raw Jute Materials banks.

The plenary session was followed by a closing session where Mr. Champa Lal Rathi, Mr. Shambhu Lal Shrestha, Dr. Deep Bahadur Swar, Mr. T. Nanda Kumar and chairman (Joint Secretary, Ministry of Agriculture and Cooperatives) of closing session Mr. Asheshwor Jha expressed great satisfaction over the successful completion of the workshop. They were of view that this workshop has triggered enthusiasm among all stakeholders to have strong coordination to promote jute and jute derivatives in Nepal and the region. Dr. Krishna Bahadur Shrestha, in that occasion, delivered vote of thanks to all delegates, resource persons, participants, IJSG, NJMA, NICDEP as well as persons who were directly or indirectly involved to make the workshop a grand success.

On the third day of workshop participants visited Arihant Multi-Fibres Limited, Sonapur, Sunsari and learnt about the various activities of industry. Afterward the participants visited Jute Research Program, Itahari of Nepal Agriculture Research Council, where the coordinator highlighted the jute research activities.

In lieu of the workshop, on 24th of March 2005, the resource persons from IJSG and JDPC exchanged ideas with the secretary, joint secretaries, Ministry of Agriculture and Cooperatives; DG, DDG, Department of Agriculture; ED, Director Crop, NARC, Chief, NICDEP on possible areas of cooperation among IJSG, MOAC and JDPC at secretary’s chamber.
WORKSHOP RECOMMENDATIONS AND SUGGESTIONS

1. Recommendation on production
   - District Agriculture Development Office must give priority to this crop and begin extension activities right from coming fiscal year
   - NARC should strengthen and give priority to Jute Research Program focusing on development of technology that reduces the cost of production as well as increase the production of high grade jute
   - NICDEP and DADO must be strengthened with jute specialists: Training and workshop opportunities shall be provided to the NICDEP as well as DADO staff
   - NARC and NSC should give extra effort to produce required amount of foundation and certified seed respectively.
   - Seed production program shall be launched by DADOs of suitable jute seed growing districts
   - Retting is the foremost problem in jute production, therefore, modern retting technology that consume less labour and water shall be promoted

2. Recommendation on marketing
   - There should be a provision of fixing minimum support price before planting
   - Mechanism for smooth procurement of raw jute should be established
   - Domestic market of jute products should be promoted:
     - Awareness program: Eco-friendly, biodegradable and durable
     - Regulatory measures: Compulsory use of jute packaging materials for food grains
     - Trade fair/ exhibition/ documentary
     - Advertisement (Radio, T.V. etc)
     - Marketing information services- Place, process, linkages, price trend, time
     - Provision of insurance
     - Infrastructure (Especially godown) through cooperatives
     - Product modification, diversification, blending
   - Similarly following measures should be adapted to promote the external market of jute products:
     - Explore new markets.
     - Reduce taxes- custom, VAT.
     - Trade fairs, workshop, buyer-seller interaction.
     - Marketing information services system.
     - Increase competitiveness by technical know-how, quality control.
     - Proactive role of government machinery.
     - Linkage with international organizations.
3. Recommendation on product diversification

- Product diversification should be started both in organized (industries) and decentralized (cottage industries, women folk etc.) sectors
- The technicians of industries and, people engaging in handicraft sectors should be imparted with modern knowledge of product diversification

4. Recommendations not covered elsewhere

- The industries and farmers have strongly recommended establishing a separate body that deals with jute research and development
- Farmers should form a Jute Growers Association
- There is an immediate need of conducting a study on competitiveness of jute over other crops in Nepal
- A strong linkage among farmers, industries and government institutions should be built up and coordinated projects should be launched
- Along with public sector, farmers and industries should play proactive role to create confidence among each other
- An exchange program among jute exporting countries should be initiated
- Nepal should be a member of IJSG
INTRODUCTION AND OBJECTIVES OF THE INTERNATIONAL WORKSHOP ON “PROMOTION OF JUTE AND JUTE DERIVATIVES IN NEPAL”

Niru Dahal Pandey  
Acting Chief  
National Industrial Crop Development Program

Background

Jute has been one of the very important cash crops of the Eastern Region of Nepal. Once Area under Jute Production reached up to 56714 ha, unfortunately, today the area declined to 11790 ha only. National raw jute requirement (Nine Jute Industries) has been estimated around 87,000 Mt while the production stands around 17,000 Mt only.

Ministry of Agriculture and Cooperatives giving due concerned to the promotion of Jute and other industrial crops, has recently established National Industrial Crop Development Program (NICDEP) under Department of Agriculture. While NICDEP was starting close coordination among research, development, industry and farmers of Jute crop, fortunately, there was a Good Will visit from the Secretary General of IJSG, Mr. T. Nanda Kumar to the Secretary of MOAC.

During the visit His Majesty’s Government's efforts to Jute Research and Development and the activities of IJSG were exchanged. Concerning about the situation of Jute in Nepal, Mr. Secretary General has invited Nepal to be a member of IJSG and at the same time a proposal to organize an International workshop surfaced.

Accordingly, on 4th November 2004, Mr Govind Prasad Pandey, the Secretary, Ministry of Agriculture and Cooperatives, formed a workshop organizing committee. The members and their organizations are as follows:

1. Dr. K. B. Shrestha, Joint Secretary, MOA&C, Chairman
2. Dr. D. B. Swar, DDG, DOA, Member.
3. Dr. S. L. Maskey, Director (Crop & Horticulture) NARC, Member.
4. Dr. D. B. Shakya, ED, AEC, Member.
5. Mr. P. R. Sharma, Senior Economist, MOA&C, Member.
6. Mr. C. L. Rath, Chairman, NJMA, Member.
7. Ms. Niru D. Pandey, Act. Chief, NICDEP, DOA, Member Secretary

In this workshop National Industrial Crop Development Program, Kathmandu has been working as the secretariat. The Nepal Jute Mills Association, Biratnagar & Jute Research Program, Itahari have been coordinating at local level.
- Finished Jute product worth of NRs 1882600 exported annually
- This is the crop that the poor farmers of this region can not neglect at all
  1. They receive money that they need most at the time of Dashain Festival
  2. This is the crop that is supplying them fuel needed for daily works

Current Status

Production Status

Figure 1 shows the area, production and productivity of jute from fiscal year 1996/97 to 2003/2004 in Nepal. It is clear from the figure that the productivity remained almost constant (below 2000 kg/hectare) during the given period. Although the area under jute crop showed marked increment in 1999/2000 reaching above 14000 hectares, in other years it remained almost constant around 12000 hectares. It is obvious that the national jute production is far lower (around 17000 mt) than the national demand of about 87000 mt per annum.

Marketing Status

- Out of ten, nine jute mills are running
- At present, the consumption of raw jute by these industries is around 87,000 metric tons per year
- Current annual production of raw jute is only around 17,000 metric tons
- Exports of jute goods in 2003/04 was worth around NRs.18,82,600
- About 44,941 mt of raw jute was imported in 2004
Present Policies and Strategies

Special policy or strategy for the development of jute crop is not available in Nepal. The policies or strategies mentioned for the development of entire industrial/cash crops are given below:

Tenth Plan

The tenth plan has given special focus on development of contract farming that maintains a balance between industrial crops and agriculture based industries.

The focus on awareness raising programs on cooperative and partnership farming will definitely help in the promotion of industrial crops directly.

HMG/N 21 Points Directives

The directives number four: “With a view to raise income in order to alleviate poverty, the government will initiate a long-term programme to modernise farming, implement small and big irrigation schemes and run horticulture, cash crops and livestock on the basis of geographical possibilities”.

Challenges

- Higher cost of production as compare to neighbouring countries
- Wider gap between yield in research and farmers field
- Wider use of plastic materials in country
- Lack of product diversification
Opportunities

- The area suitable for jute production in Nepal stands around 1,37,000 ha whereas actual area under jute cultivation is around 11,790 ha only
- Wider gap between yield in research and farmers field
- Very high demand of raw jute
- Increasing demand of jute products in international market
  - Increasing awareness of environment friendly jute and its derivatives

Policy Recommendation

- District Agriculture Development Office must give priority to this crop
- District Level Seed Self Sufficiency Program (DISSPRO), a program of Department of Agriculture that makes every District Agricultural Development Office responsible for attaining seed self-sufficiency, must be launched for Jute Seed Production and Distribution
- Research institute must be strengthen financially
- DOA must be strengthen with jute specialists
- Production and use of plastic bags should be discouraged
- Subsidy should be provided to farmers on their product
- Farmers should form a Jute Growers Association of Nepal (JGAN)
- A secretariat shall be formed (Made up of equal number of representatives from JGAN and NJMA) which works as a liaison between JGAN, NJMA as well as other governmental and non-governmental organizations:

1. Farmers and Mills need to deduct One Rupees per quintal of raw jute and per 10,000 Rs. of transaction (Arbitrary figures, need to be corrected with the consent of all participants). This money will be utilized by the secretariat in ratio of 20% Office Maintenance and 80% Research and Development of Jute and Jute Derivatives
2. There should be tax relaxation on the amount deposited by industries
3. The Secretariat should use more than 75 percent of the money meant for research and development in projects that gives direct benefit to farmers’
EXTENSION STRATEGIES OF JUTE CROP PRODUCTION AND DEVELOPMENT FROM DADO AND FARMERS PERSPECTIVES

Mr. Balram P. Koirala¹
Mr. Hemsagar Gautam²
Mr. Sankar Lal Sakya³

Introduction

Jute is an important fibre and cash crops for eastern terai of Nepal. It is one of the major foreign exchange earners. In Nepal the fibre is used extensively in manufacturing of gunny bags, ropes, rugs and twins etc. Jute stalk stripped of fibre are used as fuel and also for fencing materials. Besides this jute leaves incorporate organic matter and nutrients in soil and make it fertile. In this way it is very useful cash crop for Nepalese farmers.

Status of Jute Farming in Eastern Nepal

Terai region of eastern Nepal is main area of jute cultivation. Within this region Morang, Sunsari, Jhapa, Saptari, Siraha, Udayapur and Ilam are the main districts in coverage and production of jute. In 2003/2004 area of jute cultivation in Nepal was 11790 ha. Out of this area nearly 8172 ha was cultivated in Morang district followed by Sunsari 2000 ha, Jhapa 1200 ha, Saptari 250 ha, Siraha 128 ha and Udayapur 40 ha. Regarding production and productivity Morang was in first place with the production of 12232 mt, followed by Sunsari 3000 mt, Jhapa 1200 mt, Saptari 313 mt, Siraha 103 mt and Udyapur 42 mt.

In 1961 Total area and production of jute in Nepal was 30,000 ha and 37,000 mt respectively. Then after area and production constantly increased up to 1971/72 and reached 57,850 ha and 58,060 mt respectively. Again it area was decreased year after year and reached at 27,070 ha on 1975/76. Fluctuation in jute cultivation was continuing in its past history. In 1979/80 it will reached in its highest point with area 63,000 ha and production 68,000 mt. Up to now its lowest point was 8,842 ha area and 10,004 mt production in 1992/93. Then after it was increased slightly and stable in last decades around 11,500 ha area. Area production and productivity of jute farming in eastern Nepal is given in table 1.

If we see scenario of other jute producing countries they are more or less stable in area and production. Regarding productivity, Nepal (1.46 mt/ha) is second last in list above than Myanmar (0.71 mt/ha) highest productivity is in China (2.84 mt/ha) followed by India (2.06 mt/ha) Bangladesh (1.93 mt/ha) and Thailand (1.51 mt/ha) (FAO, 2004).

¹ District Agriculture Development Officer, Agriculture Development Office, Morang
² District Agriculture Development Officer, Agriculture Development Office, Sunsari
³ District Agriculture Development Officer, Agriculture Development Office, Jhapa
### Table 1. Area, Production and Productivity of Jute in Nepal (1961/62-2003/04)

<table>
<thead>
<tr>
<th>Year</th>
<th>Area in (000) ha</th>
<th>Production in (000) mt</th>
<th>Productivity in mt/ha</th>
<th>Price of jute Rs./Kg.</th>
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<td>30</td>
<td>37</td>
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<tr>
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<td>49</td>
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<td>53</td>
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</table>
Constraints Faced by Farmers in Jute Production and Marketing

Jute is a very important cash crop for eastern terai of Nepal and it is main source of income for thousands of farmers and raw materials for jute industries, where about 18,000 people getting employment. After 1985/86 jute cultivation decreased and at present it fulfils only 25% of national industrial demand. Several factors are responsible for this downfall. Some important factors are given below:

- Jute farmers shifted towards other crops like maize, sugarcane, early rice, vegetable due to more income in these crops compared to jute.
- Price fluctuation is high in jute compared to other crops, so risk is always high for jute farmers.
- Its production cost is higher than other crops compared to profit.
- Plastic products badly affect jute products.
- Rating is another limiting factor due to necessary of ratting pond, more labours (in past Indian labours perform this job) and rating process itself is dirty and complicated.
- Low production compared with its potentiality.
- Jute market is captured by limited industrialists (monopoly market), so price fluctuation with the year is very high so farmers didn't get their reasonable profit share from jute business.
- Very limited extension services after the dissolution of the Jute Development Corporation.
- Scarcity of labours for jute harvesting and ratting.
- Difficulty in availability and reliability of improved jute seed.
- Insufficient ratting ponds for jute processing.

Activities Carried Out on Present Days for Jute Development by DADOs

In the past Jute Development Corporation conducted some jute extension programs. But after its dissolution there is not any special program for jute development. District Agriculture Development Offices distribute some seed kits and provide technical assistance if farmers come to asked for any problems. For DADOs jute sector was not in their priority since long time because this was the responsibility of JDC in past.

Suggestions that are needed for Further Expansion and Development of Jute Farming

Jute farming is eco-friendly and advantageous profession for the farmers in eastern terai of Nepal. Due to decrease of jute farming some other crop cultivation also affected in this region like mustard cultivation. Jute crop is also very helpful to increase organic matter in the soil which ultimate enhance soil fertility. Besides this there are several benefits from jute farming, but jute farming is decreasing year after year in Nepal and it become less prioritised sector of farming from government side. To revive this crop in Nepal we need to make some arrangement, such as:
- To increase productivity, we need to conduct trials and identify appropriate varieties, required cultivation package and arrange availability of such seed to jute farmers.
- Prepare appropriate training package and organize training to jute farmers for better quality and more production.
- Make available alternate (easy, less labour consuming and efficient) ratting methods for jute farmers.
- Need to fix minimum support price of jute fibre before sowing season from government or industrialist side.
- Need to arrange and strengthen jute extension services with collaboration between government (DADOs/NARC) and private sectors (Industrialist).
- Need to arrange lone facility in jute farming like in sugarcane.
- Registration of jute growers and assured farmers for marketing.
Background

Jute and Jute Industries play an important role in National Economy of Nepal. Cultivation and processing of the Commodity provide employment to almost half a million of people and the crop is a significant source of the cash income for rural people and provides revenue to government exchequers. Since the marketing season of Jute coincides with the main religious festivals, cash earned from Jute serves a useful purpose for farmers in meeting their need of extra expenditure for these festivals. Jute is also the crop that best sustain is agro-ecology in certain important regions of Nepal. Jute goods provide biodegradable packing material produced from natural fabrics.

Present Status of Jute Industries

Nepal’s Industrialization started with the establishment of Biratnagar Jute Mills Ltd. (BJML) in the year 1936. The contributing factors were the easy availability of raw jute, inclination of farmers towards jute cultivation, availability of labour & low power cost.

The healthy economic performance & growth of BJML for more than five decades encouraged the private sector to establish Jute industries in Nepal. There are following ten Mills.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Mills</th>
<th>Year of Estd.</th>
<th>Rated Annual Production (MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Biratnagar Jute Mills Ltd.</td>
<td>1936</td>
<td>14000</td>
</tr>
<tr>
<td>2.</td>
<td>Sri Raghupati Jute Mills Ltd.</td>
<td>1946</td>
<td>12500</td>
</tr>
<tr>
<td>3.</td>
<td>Guheshwari Twine Plant (P) Ltd</td>
<td>1981</td>
<td>6000</td>
</tr>
<tr>
<td>4.</td>
<td>Nepal Jute Industries (P) Ltd.</td>
<td>1982</td>
<td>6300</td>
</tr>
<tr>
<td>5.</td>
<td>C. M. Jute Mills (P) Ltd.</td>
<td>1990</td>
<td>6600</td>
</tr>
<tr>
<td>6.</td>
<td>Arihant Multi Fibres Ltd.</td>
<td>1992</td>
<td>25000</td>
</tr>
<tr>
<td>7.</td>
<td>Baba Jute Mills (P) Ltd.</td>
<td>1993</td>
<td>7000</td>
</tr>
<tr>
<td>8.</td>
<td>Nikki Jute Mills (P) Ltd.</td>
<td>1995</td>
<td>1500</td>
</tr>
<tr>
<td>9.</td>
<td>Swastik Jute Mills (P) Ltd.</td>
<td>2001</td>
<td>6600</td>
</tr>
<tr>
<td>10.</td>
<td>Pathibhara Jute Mills (P) ltd.</td>
<td>1993</td>
<td>1500</td>
</tr>
</tbody>
</table>

Except BJML all Jute mills are established in Private sector presently this mill is also running on lease basis. At present only nine jute mills are in operation except...
Pathibhara Jute Mills (p) Ltd. The main activities of all the Jute Mills in Nepal are concentrated on the following Jute Products:-

- Jute matting
- Jute Bleach Cloth
- Hessian
- Sacking
- Twine

**Future Strategies & Challenges in Jute Products Production & Manufacturing**

There is vast change in the jute industry with the introduction of modern technology in the world. During early eighties only two jute mills with the production capacity of 50 M.T per day was there in Nepal now there are nine jute mills running with the production capacity of 275 M.T per day. In last 25 year growth of the Jute industry in Nepal was very slow. Due to unstable atmosphere Jute mills of Nepal are facing a lot of problem directly and indirectly in its day to day operation. We are still facing many challenges to run our industry smoothly among them these are the major challenges.

**Low Raw Jute Production**

Jute Industry is an agriculture based Industry. Till early 80’s Nepal was the exporter of Raw Jute. Since 1980 cultivation of Raw Jute started falling down. With the establishment of new Jute mills & increase in production capacity of existing Jute mills the scenario has changed. At present 40% of total required jute is being fed from local Jute Market. Hence balance required quantity of jute is to be imported from India or Bangladesh.

**Absence of Local Market**

In Nepal the consumption of the finished jute goods are around 5% of the total productions. In absence of favourable policies to promote jute goods in Nepal we are bound to export the balance quantity of finished goods to India in open competitive market.

**Use of Plastic Packing Material**

Plastic packing material has been allowed as packing material along with the jute packing material in most parts of the world. Plastic packing material is made from man made fiber & it costs very low in comparison to Eco- friendly Jute packing Material. In international market due to heavy competition in all product every industry started reducing the cost of there product hence they have started using plastic packing material instead of jute packing material knowing that using of plastic packing material is harmful & hazardous for the environment.

**Land Locked Country**

Due to geographical location of Nepal, we are unable to export jute goods to third country reason being heavy transportation cost in comparison to India & Bangladesh.
Rigid Labour Law
You all are aware that Jute industry is a highly labour oriented industry. To run the mill smoothly we also need skilled & highly skilled labour. The productivity capacity of labour of Nepal is too low in comparison to labour of India. Present Labour law of Nepal is very rigid due to which we are facing problems to increase the productivity of the labour & develop the industrial culture in labours.

Stores Auxiliary Material
Like raw jute we have to import 100% auxiliary raw materials like J.B.O., TKP, Dyes, and Chemical, packing material including balling hoop, buckles & 60% of other stores spare material from India. The import duty & other duties on these materials range from 18% to 40% where as in Bangladesh the import duty is around 5% only. Further we have to maintain a huge stock of above items to run our factory smoothly.

Technical Know-How
Jute technical expert persons are not available in Nepal. Hence we have to hire them from India & other countries. Due to huge turnover of technical experts in Nepal the uncertainty of availability of technical staff always lies there.

Scope of Product Diversification
In current scenario to survive, Jute Industry has to go for product diversification. Jute mills in Nepal also started diversifying their product by manufacturing Jute matting, Jute bleach cloth, Fine Hessian and carpet backing. Further tradition items like fine Yarn & non traditional items like Floor covering, furnishing fabric, upholstery material, blended yarn, blended fabrics, soil saver, handicraft and fancy hand bags can be manufactured by the industry. In absence of sufficient Technical know how, skilled labour, high class modern machinery, high grade of jute, favourable policy to promote jute goods, jute mills of Nepal cannot archive the quality of these value added products required by the international market. Nepal can achieve the quality of these value added products by procuring & arranging the required things with the help of Government, Jute Producing countries and International Jute Organization. With the product diversification the growth rate of jute industry of Nepal will touch a new high.

Present Role of Jute Mills Association in Promoting Jute Production and Manufacturing and Its Constraints
Every industry is bound to National & International rules & regulation .The main role of Jute Mills Association is to co-ordinate between Jute Mill & other National & International authority

- NJMA along with Ministry of Agriculture is motivating farmers of Nepal to cultivate jute in huge quantity by organizing seminars, distributing pamphlets & by explaining the benefits of cultivating Jute.
- NJMA is approaching government of Nepal to make a separate Jute research & development organization for promoting the cultivation of jute in Nepal.
- Organizing the Training program for the worker at their working place to improve there productivity & working Culture.
- NJMA is approaching to government of Nepal for making flexible labour law for Jute industry.
- NJMA has requested Bangladesh Government to give more facility for import of raw material & other auxiliary material to Nepal.

**Future Strategies of Jute Mills Association**

- Approach to other Jute Product Manufacturing Countries for new technology through which industry can manufacture value added Jute Products considering W.T.O. & SAFTA requirement.
- With the help of government of Nepal, Promote the jute products as eco-friendly by compulsory using of jute products for packing of food grains & other product.
- To approach to government of Nepal to provide facilities, tax benefit & subsidies on export to third country like India & Bangladesh.
- Promote jute "As a Natural Product which is bio-gradable & therefore does not cause environmental damage" along with government & other agencies.
- Develop awareness amongst the consumers about the environmental advantages of Jute bags in comparison with plastic bag along with its reusable value.
- To find out other international market in addition to India for the product of Nepal.
- To approach government of India for allowing Jute industries of Nepal to participate in government's tender and also allow our products in sugar industries of India.
- Inspiring all jute industries to go for product diversification for the fast growth of the jute industry.

**Conclusion**

Before concluding I have to say that government of Nepal & other International authority are serious for growth of Jute industry of Nepal. With the few more favourable policies from government to promote the jute products and few favourable supports from jute producing countries & other international authority jute industries of Nepal will touch a new high.
JUTE RESEARCH IN NEPAL AND FUTURE PERSPECTIVES

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Jute Research Program Itahari, Sunsari

ABSTRACT

Jute (Corchorus spp.) is an important industrial crop grown in the eastern terai region of Nepal. The current area, production and productivity of jute is 11790 hectares, 16890 metric tones and 1432 kg/ha, respectively. Itahari-1 of C. capsularis and Itahari-2 of C. olitorius jute varieties were officially released by NARC for general cultivation in eastern terai of Nepal in 1999. Development of low cost cultivation and retting technologies and varieties suitable for multiple cropping systems are the main research strategy of the Jute Research Program in Nepal. Low productivity of jute, higher cost of production, scarcity of retting water, diseases like stem rot, collar rot, root rot and yellow mosaic and insect like hairy caterpillar, semi-looper, mite and apion, and weeds are the main challenges in jute production. Owing to employment generating, sustaining soil productivity and environment friendly in nature jute has good scope in sustainable agriculture development of Nepal.

Introduction

Jute is a tropical fibre crop which provides a living for more than 10 million peasant farmers in some of the poorer parts of South and Southeast Asia: Bangladesh, India, China, Nepal and Thailand. In Nepal about 0.1 million people are involved in jute production and processing. About 18000 people directly got employment in 9 jute mills running in the Morang and Sunsari districts. Nepal has exported jute products to the tune of 1882.6 million rupees in 2003/04 (MOA&C, 2060/61). Due to favourable edaphic and climatic factors, eastern terai and inner terai region is the main domain of jute in Nepal. It is a traditional cash crop showed premier position in the economy of this region. The demand of raw jute by the existing industries is about 89100 metric tones while the domestic supply is about 26730 metric tones only (Discussions with Jute Mills Association). Millions of rupees have been draining out in importing raw jute from India and Bangladesh. The area, production and productivity of jute in Nepal during last twenty year are given in table 1. Area under jute production has remained more or less stable since last ten year. Likewise, district wise area, production and productivity of jute in Nepal are shown in Table 2. Ecologically Jhapa, Morang, Sunsari, Saptari, Siraha and Udyapur are recorded the main jute growing districts. Improved jute varieties have covered about 90 per cent of jute area in the country. JRC 321, JRC 212, Itahari 1, JRO 632, JRO 524, JRO 7835 and Itahari 2 are the main improved varieties popularly grown in Nepal. Corchorus capsularis (Sada/white jute)
and *Corchorus olitorius* (Tossa jute) are the two important species of raw jute grown in Nepal.

The sales of improved jute seed has been decreased over the years (Table 3). Out of total jute area, tossa jute occupy about 60% of its cultivated land and mainly grown in upland and mid-high land mostly under rain-fed condition. Jute-rice-wheat (36%), jute-rice-lentil (28%) and jute-rice-potato (11%) are the major jute based cropping patterns in Nepal (IJO 2000).

**Jute Research in Nepal**

Jute research and development program was initiated in 1970 with the establishment of the Nepal Jute Development Board (NJDB). Prior to 1973 the research works on jute crop were carried out at the Tarahara Agriculture Station (TAS) which covered a few varieties of jute, agronomic trials and seed multiplication. In 1974, the Nepal Jute Development Board was replaced by Jute Development and Trading Corporation (JDTC). This organization was primarily responsible for the overall development of jute sector in the country. With the set up of the Jute Research Centre (JRC), Jute Development and Trading Corporation started all research activities at Itahari, Sunsari in the year 1978. Subsequently, JDTC dissolved in July 1993. The Jute Research Centre Itahari was handed over to the Nepal Agricultural Research Council (NARC) and all the responsibilities of jute research and seed maintenance works were given to the Jute Research Program (JRP) and started its research activities under NARC umbrella system since July 1993. Jute Research Program is one of the commodity programs of Nepal Agricultural Research Council (Annual report, JRP 2003/04).

After establishment of International Jute Organization (IJO) in 1984 the Jute Research Centre had got technical and financial support for jute promotion in Nepal. The major projects run under IJO support in Nepal were:

- Seeder development project (January 1988-December 1991)
- Retting project (January 1991-December 1993)
- Seed project (July 1991-December 1996)
- Varietal Improvement project (October 1995- April 1998)
- Germplasm project (September 1997-December 1998)

About 1500 Germplasms, new varieties and promising breeding materials were received from IJO and local Germplasms were collected from different parts of the country during IJO period. With the concerted efforts of IJO and Nepal Agriculture Research Council substantial amount of technologies have been generated and released to the growers.

**Technologies Developed**

- Two varieties have been released in 1999:
  1. **Itahari-1** (IJO/LISA): *Corchorus capsularis* (sada jute), originated from Brazil, recommended for Jute-rice-wheat, Jute-vegetables and Jute-rice-fallow system under low and mid-highland areas of eastern terai of Nepal. High yielding capacity: 1665 kg/ha (1120-3439 kg/ha).
  2. **Itahari-2** (IJO/T-86): *Corchorus olitorius* (tossa jute) originated from Taiwan, highly suitable in moisture stress area
at the time of sowing. Recommended for Jute-rice-wheat, Jute-
vegetable and Jute-rice-fallow systems under upland and mid-
lowland condition of eastern terai of Nepal. It has average
fibre yield of 1575 kg/ha (916-3254 kg/ha).

- Planting of jute on 30th Chaitra to 15th Baishakh for Sada jute was found optimum for fiber production. Tossa performed better if sown after 15th of Baishakh.

- Harvesting of Jute at the age of 120 days after sowing for both Corchorus capsularis and Corchorus olitorius was found optimum for fiber production.

- 60:30:60 NPK Kg./ha for C. capsularis and 40:20:40 NPK Kg/ha for C. olitorius has been recommended.

- Jute bundle covered by rice straw and water hyacinth during retting equally found good for quality fibre production.

- Jute ribbon extraction methods (fresh fiber extraction with the help of ‘V’ shape notched bamboo pole) were found economical and best for quality fibre production.

- Jute ribbon retting treated with 0.02% urea (20g/L of water) or 0.2% EM (200ml/L of water) resulted superior fibre quality in Itahari-1.

- Ribbon retting fibre fetch higher price in the market as there were minimum root content and foreign materials.

- Ribbon retting fibre is more suitable and economical for manufacturing handy craft.

- De-topping at 30 and 45 days after sowing in Sada jute; and 30, 45 and 60 days after sowing in Tossa Jute has been found beneficial in higher seed production.

- Jute-paddy-potato cropping sequence had given highest return followed by Jute-paddy-wheat sequence in eastern terai conditions.

### Jute Production Constraints Identified At Different Operational Levels (IJO, 2000):

- Production related- Unavailability of good quality seeds, lack of technical knowledge of farmers about jute cultivation, lack of irrigation facility and scarcity of labour.

- Harvesting related- scarcity of labour, water logging in the field at harvesting time, lack of improved harvesting tools and transport problems from field to retting place.

- Retting related- scarcity of retting water for early sown crops, lack of skill labour and lack of improved retting techniques.

- Extraction related- lack of clean water, skilled labour and knowledge about improved extraction technique.

- Drying related- rainfall during drying period, lack of drying place and scarcity of bamboo and wire.

- Storage related- Lack of go down, risk of fire and attack rodents

- Grading, price and marketing related- Poor market management, low price of fibre and lack of govt. purchase centres.
Challenges for Research

- The cost of production of fibre should be reduced. There are only two practical ways, which can be useful to reduce the cost. These options are: one is to reduce the cost of cultivation and the other is to increase the productivity of fibre (IJO 2000). The cost of jute cultivation is high (NRs. 15924.00) compared to rice (Rs. 13084.00) in the same season (Annual Report, 2000). On the other hand, the quality of fibre can be increased significantly by pressing jute bundles with old gunny/plastic bags filled with piece of gravel/sand/brick. This prevents the blackening and breaking of fibres and ultimately give high returns by improving quality of jute fibre.
- The existing cultivars are of age old, narrow genetic base, low adaptability to agro ecological settings. With the advancement of research, high yielding varieties could be developed and introduced for the replacement of existing low yielding varieties so as to make remarkable increase in the productivity and quality of jute fibre.
- Technological gap exist in improved production technology with good quality seed and improved retting and extraction technologies.
- Jute has got least priority agricultural research, extension promotion activities in national level. Therefore, allocated budget is very limited for research and promotional activities.
- Jute research is still in infancy stage and very limited manpower is working in this crop.
- Diseases like stem rot; collar rot and yellow mosaic and insect like hairy caterpillar, semi-looper, mite and apion infest the crop and causes considerable loss in the fibre yield.
- Weeds severely invade the crops at the beginning and weeding and thinning operations become tedious and costly. Targa Super herbicide (Quizalofop ethyl 5%EC) @ 1.5-2 ml/L of water at 21 days after emergence found effective in controlling grassy weed in jute at CRIJAF Barracpore, W.B. Mix cropping of red amaranthus and radish with jute also reduce the cost of weeding and gave extra income at 25-30 days after sowing.
- Mechanization in jute extraction is needed to reduce labour drudgery.

Jute Research Strategy in Nepal

- The main thrust of jute research program is to find out low cost technologies in jute production and processing for sustainable and economical stability of jute.
- Emphasis will be given for Corchorus olitorius (tossa jute) as it occupies highest area (60%) in the country.
- Efforts will be made in crop management research especially on weed management, cropping system and retting methods.
- Development of varieties suitable for multiple cropping systems with higher fibre yield, early maturing, fast vegetative growth, tolerance to moisture stress, diseases and insect pests and fine fibre quality.
- Variety and technology for low input condition (Farmers conditions).
- Development of suitable retting techniques for quality fibre production in water scare areas.
Future Perspective

- **Employment/income generation:**
  To uplift the rural poverty in eastern terai improvement in jute agriculture is must. Large number of marginal poor and landless people can get job in field operations especially in weeding, harvesting, retting and fiber extraction process. Importance of crop can further be assessed from the fact that cultivation of this crop generates paid employment of more than 30000 man days per season. Industrial operations of nine jute mills in the country are vital segment of the national economy. About 18000 workers earn their livelihood from these jute mills. In addition to this, large number of people have involved in raw jute and finished goods trading and ancillary activities. There is scope to strengthen the jute seed sector which has export potential to Bangladesh. Variety- JRO 524 is popular in Nepal as well as in Bangladesh. Drier part of Siraha, Dhanusha and Sarlahi are the potential districts for jute seed production.

- **Industrial development :**
  To make jute cultivation sustainable and more profitable, its uses has to be diversified in other product like geo-textile, paper, pulp, card board, furniture, geo-jute etc. All research and development activities should be reoriented more in favour of export market. Newer and newer jute varieties and their diversified end use potentials need to be evaluated keeping the foreign trade in vision. Jute retting and fibre extraction plants could be established in the areas where plenty of retting water facilities available. Cottage industries of jute handy craft could be promoted. Jute carpet technology is cheaper than woollen carpet technology. If the price of raw jute increased there is a chance of area expansion under this crop in eastern terai region.

- **Sustaining soil productivity:**
  As a crop, jute grows with a degree of reliability in adverse climatic conditions with a global production of some 3 million tones (NEW JUTE). It is grown without hampering the main crop of rice in eastern terai. It add organic matter to soil and beneficial to succeeding crops. As a natural vegetative material it decomposes adding up to 5 t/ha of rich organic nutrients to the soil (Anonymous, 1986/87). Organic cycling from bast fibre cultivation observed that Sun hemp (cv.K12-yellow) provided crop residues up to 96 q/ha while jute (cv. JRO 524) provided crop residues nearly 41 q/ha (Bhattacharjee et. al., 2003).

- **Environment protection:**
  Environment consciousness has arisen through out the world. Jute being a natural product and environment friendly (bio degradable) in nature find good favour in various uses. The by-product of jute has varied domestic and agricultural uses. Examples are used for fuel, fencing and structural materials for rural areas after extraction. This is a renewable source of fuel and its uses minimize deforestation and save environment to a considerable extent. During the growing cycle of about four months jute and kenaf can produce up to 3.5 t/ha of fibre and for each ton of fibre 2.0-3.5 t/ha of sticks chemically close to hard wood with low ash content (Shrestha, 2000).
Table 1. Area, production and productivity of jute over the years (1980/81-2003/04).

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (ha)</th>
<th>Production (MT)</th>
<th>Productivity (Kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980/81</td>
<td>51959</td>
<td>59284</td>
<td>1141</td>
</tr>
<tr>
<td>1985/86</td>
<td>47191</td>
<td>61102</td>
<td>1295</td>
</tr>
<tr>
<td>1990/91</td>
<td>14000</td>
<td>16000</td>
<td>1143</td>
</tr>
<tr>
<td>1995/96</td>
<td>11150</td>
<td>14950</td>
<td>1341</td>
</tr>
<tr>
<td>2000/01</td>
<td>11289</td>
<td>16392</td>
<td>1452</td>
</tr>
<tr>
<td>2001/02</td>
<td>11000</td>
<td>16000</td>
<td>1455</td>
</tr>
<tr>
<td>2002/03</td>
<td>11851</td>
<td>17035</td>
<td>1437</td>
</tr>
<tr>
<td>2003/04</td>
<td>11790</td>
<td>16890</td>
<td>1432</td>
</tr>
</tbody>
</table>

Table 2. Area, production and productivity of jute on major jute growing districts during 2003/04(2060/61).

<table>
<thead>
<tr>
<th>Districts</th>
<th>Area (ha)</th>
<th>Production (MT)</th>
<th>Yield (Kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jhapa</td>
<td>1200</td>
<td>1200</td>
<td>1000</td>
</tr>
<tr>
<td>Morang</td>
<td>8172</td>
<td>12232</td>
<td>1496</td>
</tr>
<tr>
<td>Sunsari</td>
<td>2000</td>
<td>3000</td>
<td>1500</td>
</tr>
<tr>
<td>Siraha</td>
<td>128</td>
<td>103</td>
<td>804</td>
</tr>
<tr>
<td>Saptari</td>
<td>250</td>
<td>313</td>
<td>1252</td>
</tr>
<tr>
<td>Udyapur</td>
<td>40</td>
<td>42</td>
<td>1050</td>
</tr>
<tr>
<td>Total</td>
<td>11790</td>
<td>16890</td>
<td>1432</td>
</tr>
</tbody>
</table>
Table 3. Annual sales of improved jute seeds, 1993/94-2002/03.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Qty (MT)</td>
<td>73</td>
<td>43</td>
<td>64</td>
<td>54</td>
<td>20</td>
<td>37</td>
<td>19</td>
<td>11</td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 4. Export of jute and jute products to India, 2003/04

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Commodities</th>
<th>Values in '000 Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Jute goods</td>
<td>1,882,600</td>
</tr>
<tr>
<td>2.</td>
<td>Hessian</td>
<td>143,500</td>
</tr>
<tr>
<td>3.</td>
<td>Sacking</td>
<td>1,056,500</td>
</tr>
<tr>
<td>4.</td>
<td>Twines</td>
<td>682,600</td>
</tr>
</tbody>
</table>
References

Annual report, Jute Research Program, 2000/01.


NEW JUTE. The Textile Consultancy Limited. Anvil House. 70 High Street. Aberdour, Scotland.

PROMOTION OF JUTE & JUTE DERIVATIVES IN BANGLADESH PERSPECTIVE

Dr. A.B.M Abdullah
Executive Director
Jute Diversification Promotion Centre (JDPC) Bangladesh

Introduction

Jute and allied fibres (Corchorus capsularis, Corchorus olitorius, Hibiscus cannabinus and Hibiscus sabdariffa) are ligno-cellulosic coarse natural bast fibres. These are generally used as the raw material for the production of packaging materials for their viscoelastic property. Carbon, hydrogen and oxygen are their major chemical elements. Cellulose, hemi-cellulose and lignin are their principal constituents’ components. Their Meshy- structures are formed with the net-work of the polymeric structures of above components. The three dimensional structures of them are resulted by different inter & intra molecular physical, chemical and hydrogen bonds between them. Natural jute and allied fibres are biodegradable, photodegradable, thermal degradable, non-toxic, nonplastic, drapable, anionic, acidic, hydrophilic, high moisture and U-V absorbing capacity, their cellulosic portion is mostly present in crystalline part. Jute & allied fibres are non-uniform, heterogeneous in character, having no standard staple fibre length but at the molecular level their strength is equivalent to iron. Here when jute is used it is included other two fibres also. Until now traditional jute products are being produced by mechanical conversion of it.

Jute has a similarity with cotton and wood simultaneously due to the presence of cellulose and lignin respectively. On the other hand jute is quickly growing photosensitive crop only 120-140 days are necessary for its growth. It has relative advantages in respect to bio-mass production as 98kg per day per hector is produced in case of jute as against 29kg per day per hector for any other forest/plant products. It is also renewable sources of bio-mass. And as a natural fibre it is second to cotton both as production and uses. Jute and jute products are totally environment friendly. It is not only environment friendly but its uses protect environment degradation in various ways. Thus ecofriendly jute and jute products can play vital role in respect to environmental protection, sustainable development and ecological balance of the Earth.

Market and uses of traditional jute products are declining, but with the exploration of above intrinsic and extrinsic properties of it, a wide range of diversified products can be made with jute and allied fibres as mention above and they have hug potential market. And this market is divergent in character as the awareness of environment degradation courses by green house affect are increasing globally.

Jute Technological Development for Diversification of Uses

With multi fibre concept and explore above intrinsic and extrinsic properties of jute various vertical and horizontal diversified products can be produced. These may be
textiles-nontextiles, Chemical-nonchemicals, woven-nonwoven, composite-noncomposite, geotextiles, agrotextiles, technicaltextiles, home textiles, medicare-textiles, wood and plastic substitutes, carbon fibre and various buildings materials, pulp, paper and paper board and new generation packaging materials etc. These products can be produced through mechanical, chemical, bio-chemical, conversion along with combination of them and their easy care finishing and modifications.

Technologies related to these products are also more or less available in different national & international R&D organizations. Main hurdle is to transfer these technologies for developing market demand consumable products.

**Bangladesh Situation**

Market of the traditional jute products are declining but prospect of diversified jute products are increasing with the passage of time. Again considering global awareness in respect to environmental degradation and ecological balance, it can be easily focused that horizon of uses of natural fibres will increase in multidimensional ways. This needs development of appropriate and cost effective marketable product. In fact, both national and international approaches have already started in this direction. Bangladesh also initiated the same for revitalization of Jute Sector. Ministry of Textiles & Jute, Government of Bangladesh set up Jute Diversification Promotion Centre (JDPC). JDPC has been created with the VISION of reviving the past glory of jute as “Golden Fibre” through extension of uses of jute by vertical and horizontal diversification and thereby improving the socio-economic conditions of the all sections of people involved directly and indirectly with the Jute sector.

**The Objectives of JDPC**

- To explore and promote new technologies for production of high value added diversified jute products by maintaining close contact with various R&D organizations and by way of conducting feasibility studies, surveys etc, and disseminate those to the prospective entrepreneurs.
- To review and formulate appropriate policies for diversification of jute goods on a continuous basis.
- To facilitate quick implementation of identified diversified projects.
- To explore market potentials for diversified products both at home and abroad.
- To explore possibility of manufacturing high value added diversified jute products in existing jute mills and if possible, promote and provide support for it.
- To make in-depth evaluation of jute diversified products and of projects submitted to the JDPC.
- To arrange financing for diversified jute projects.

**The Scope of JDPC**

- To help upgrade the skills of jute industry in producing diversified jute goods.
- To help build up the entrepreneurship of the jute goods manufacturers and bringing the long-term sustainability of the jute sector.
To provide data and information about diversified jute goods and the potential market to the enthusiastic entrepreneurs/manufacturers.

To arrange necessary financial assistance to the potential producers of diversified jute products.

To keep continuous touch with various R&D institutions of different national and international bodies like IJSG, BJRI, IJIRA, IFTH etc.

To arrange market surveys, research and intelligence and creation of a database on markets and consumer choices/preferences on diversified jute products.

To develop a programme on ‘industry and market promotion’ to incorporate market and technological research to cover in greater details the issues and concepts leading to specific investment proposals.

Functions of JDPC

Jute Diversification Promotion Centre performs the following functions under the general guidance of Ministry of Textiles & Jute having a Steering Committee to provide policy guidance and support for efficient and effective functioning of the Centre Headed by secretary with 18 members from both public and private sector related with its activities. The important functions are:

- To assess the current status of jute diversification and its potential in the short term, mid-term and long term perspectives;
- To identify the suitable technologies for jute-diversified products and acquire from R&D Institutions, their marketable technologies for commercialization;
- To assess the demand and supply situation of diversified jute goods and the related goods in domestic as well as world markets and make projection on their future growth;
- To help private entrepreneurs for the preparation of bankable project documents towards investment in diversified jute products;
- To undertake feasibility studies on market intelligence, research and promotion, investment promotion, etc.;
- To provide package support which will include technological, marketing and financial assistance to the prospective entrepreneurs for diversified jute products producing units;
- Any other related functions which are necessary to promote diversification uses of jute products.
The Centre is comprised of the following three sections:

- Technology transfer and project feasibility section;
- Market research and promotion section, and
- Programme and project monitoring section.

**Potential List of Technologies & Products Identified by JDPC**

### Short Term Technologies

<table>
<thead>
<tr>
<th>S. N.</th>
<th>Technology</th>
<th>End Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Jute blended yarn of grist count 4 lbs or below where jute is the predominant fibre as per Multi-Fibre concept and jute yarn of grist 6 lbs or below.</td>
<td>Fine yarn and blended yarn for production of fine fabrics and fancy products.</td>
</tr>
<tr>
<td>2</td>
<td>Downstream products of jute like Furnishings. Handicrafts and various home textiles.</td>
<td>Upholstery, made-ups, bags other than traditional sacks, soft luggage, travel accessories, handicrafts, and utility articles along with various home textiles.</td>
</tr>
<tr>
<td>3</td>
<td>Chemical Treatment of Jute for delignification and modification.</td>
<td>Value added textile apparels and furnishing products.</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>4</td>
<td>Mini Spinning of Jute Blended yarns.</td>
<td>Jute and cotton blended yarn in 61b count or below for textile sector.</td>
</tr>
<tr>
<td>5</td>
<td>Friction Spinning Technology.</td>
<td>Curtains, bed covers, pillow covers, sofa covers, soft luggage, footwear, denim, jacket, technical textiles, top apparels etc.</td>
</tr>
<tr>
<td>6</td>
<td>Jute Blanket.</td>
<td>Jute blanket, jute and other textile blended blanket, jackets, warm cloth etc.</td>
</tr>
<tr>
<td>7</td>
<td>Integrated Wet Processing Plant.</td>
<td>Bleached, dyed and printed fabrics for home textiles, soft luggage, apparels, technical textiles decorative etc.</td>
</tr>
<tr>
<td>8</td>
<td>Jute Blended Denim and other Apparels</td>
<td>Garments, footwear products etc.</td>
</tr>
<tr>
<td>9</td>
<td>Production technologies for Carboxy Methyl Cellulose (CMC), Microcrystalline Cellulose (M.C.C) etc.</td>
<td>Raw materials for pharmaceutical/ cosmetic /paper and textile industries etc.</td>
</tr>
<tr>
<td>10</td>
<td>Jute Wool technology</td>
<td>Knitting wool substitute for jumper, cardigan, muffler, barrette, and various winter dresses.</td>
</tr>
<tr>
<td>11</td>
<td>Jute-based Handmade Paper using jute as major raw materials.</td>
<td>Paper stationery like envelopes, cards, decorative wrapping papers, office/ writing pads, handicrafts, toys etc.</td>
</tr>
<tr>
<td>12</td>
<td>Technical Jute Fibres/Fabrics</td>
<td>Soften, coloured, stuffed and high absorbing handicrafts, toys etc.</td>
</tr>
<tr>
<td>13</td>
<td>Jute Ribbon-based different products technologies.</td>
<td>House hold products such as mat, box, partition, panel, handicrafts, toys etc.</td>
</tr>
<tr>
<td>14</td>
<td>Knitting technology of jute products.</td>
<td>Low cost shopping bag, decorative shale, garment, screen etc.</td>
</tr>
<tr>
<td>17</td>
<td>Sizing, de-sizing and scouring processing methods for jute yarn and fabrics and their unions / blends.</td>
<td>Uniformed quality coloured and printed products such as home textile, apparel, and decorative etc.</td>
</tr>
<tr>
<td>18</td>
<td>Bleaching methods for Jute fibre, yarn and fabrics and their products including photostable bleaching.</td>
<td>High quality, uniform and colour fast dyed and printed products.</td>
</tr>
<tr>
<td>19</td>
<td>Dyeing and printing methods of Jute and Jute products with different dyes &amp;pigments.</td>
<td>Dyed and printed decorative home textiles, apparels, shopping bags, parts, soft luggage etc.</td>
</tr>
</tbody>
</table>
Long-term Technologies

<table>
<thead>
<tr>
<th>S. N.</th>
<th>Technology</th>
<th>End Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jute or Jute blended Non-Woven Fabrics/Products</td>
<td>Automotive products, shoe insoles, filters, floor cover, door and window frames etc.</td>
</tr>
<tr>
<td>2</td>
<td>Jute-based Composites using Jute Stick/Powder/Granules/Waste/Fabrics</td>
<td>Furniture, corrugated sheets, roof sheets, floor board, door and window frames etc.</td>
</tr>
<tr>
<td>3</td>
<td>Jute Re-enforced Plastic Granules.</td>
<td>Toys, garden fences, street lamps, gate light, letter box, toilet doors, swing &amp; garden accessories, partition wall, bathroom cabinet etc.</td>
</tr>
<tr>
<td>4</td>
<td>Wood Substitute from Jute Sliver.</td>
<td>Plate, special packaging material, box etc.</td>
</tr>
<tr>
<td>5</td>
<td>Jute Products from Pultrusion Technology</td>
<td>Toys, box, special articles etc.</td>
</tr>
<tr>
<td>6</td>
<td>Irrigation Channel and Low Cost Housing Materials</td>
<td>Movable irrigation channel, partition, roofs etc.</td>
</tr>
<tr>
<td>7</td>
<td>Jute Geo Textiles</td>
<td>Fibre drain, filter, separator, moisturizer, re-enforcing material, geonet, cropland etc.</td>
</tr>
<tr>
<td>8</td>
<td>Jute-based Pulp and Paper</td>
<td>Cultural paper, industrial paper, news print and other cellulose derivatives etc.</td>
</tr>
<tr>
<td>9</td>
<td>UV-protection and high water absorbing Jute &amp; Jute Products.</td>
<td>Special umbrella, hats, caps, seashore umbrella, golf umbrella etc.</td>
</tr>
<tr>
<td>10</td>
<td>Photo-stable dyes &amp; dyeing for Jute and Jute Products</td>
<td>Special light fast decorative products such as wall covers, canvass etc.</td>
</tr>
</tbody>
</table>

JDPC is always looking out for newly emerging technologies and processes with higher value addition and market opportunities. In this respect about thirty-five national & international R&D organizations and universities are under constant contact.
Working Procedure of JDPC

(a) Entrepreneurs Identification & Project Appraisal
The potential entrepreneur willing to set up enterprise for diversified jute products may contact personally or over telephone, any professional of JDPC and fix up a date for preliminary discussion and subsequent in-depth deliberation in respect of marketing prospect, availability of technology, financial strength and capability of the entrepreneur. If the proposal is found technically feasible, economically viable and commercially profitable then the entrepreneur will be required to prepare and submit a project proposal. JDPC professionals will assist the entrepreneur with necessary inputs, if necessary, in preparing the project proposal. On receipt of the proposal, JDPC will convene meeting of the Project Appraisal Committee (PAC) immediately to evaluate the proposal in detail and consider the same for support as diversified jute enterprise. After acceptance by PAC, JDPC will forward the project proposal to commercial bank or any financial institution, in consultation with the entrepreneur, for investment fund, as required.

(b) Financial Assistance
JDPC has provided with Tk. 200 Million as revolving fund at its disposal for extending funding support to jute diversified enterprises up to 20% of the project Capital cost at a very reasonable Rate of Interest as a means of reducing investment risk to the bank. And thereby induced them to invest in the enterprises of diversified jute products.

JDPC has provided Tk 30 million as a grand fund at its disposal for extending incentive, not exceeding 15% of the machinery cost to the investing entrepreneurs to reimburse cost of acquiring new technologies and related training, market survey, intelligence and promotion.

(c) Structure of Project Appraisal Committee
1. Executive Director, JDPC - Chairman
2. Deputy Chief (Planning), Ministry of Textiles & Jute - Member
3. Representative of the Delegation of the European Union in Bangladesh - Member
4. Representative of the BJRI - Member
5. Representative of the IJSIG - Member
6. Director (MRP), JDPC - Member
7. Director (PMI), JDPC - Secretary

(d) Criteria for Grant Fund Subsidy
The approved criteria for sanctioning Grant Fund (marking system) to the investors of diversified jute products are as follows:
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Traditional</td>
<td>20</td>
<td></td>
<td>Domestic market only.</td>
<td>15</td>
<td></td>
<td>10-25%</td>
<td>10</td>
<td></td>
<td>20-100%</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Modern/Innovative</td>
<td>30</td>
<td></td>
<td>Domestic plus Export Market</td>
<td>25</td>
<td></td>
<td>above 25%</td>
<td>20</td>
<td></td>
<td>above 100%</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Only Export Market</td>
<td>30</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**JDPC Activities and Achievements**

JDPC is initially established for a period of 5 years. It has a small structure having 3 professionals in respective fields for providing promotional activity for achieving above goal & objectives. With this aim & objective 35 activities were identified related to technology scouting, entrepreneurs selections, Project proposal & fund facilitation and market promotion and other related activities.

In the mean time JDPC already established relationship with various national and international chambers, associations related to trade & commerce and individual groups, SME, NGO’s & Govt. development organization like BJMC, BJRI, BSCIC, Hand Loom Board, BCSIR, EPB, BOI and different banks and financial institutes. Interactions with above organizations help JDPC to peruse and implement its activities related to diversification of jute uses both home and abroad. Technology identification and entrepreneurs selection are pivotal objectives and also very difficult for us in Bangladesh condition due to lack of information and first generation entrepreneurs having limited knowledge and fund constrain.

In Bangladesh there are more than hundred jute & twine mills in private & govt. sector. Twine mills are profiting but composites mills are loosing concern mostly in public sector. It is well known that uses and market of traditional jute products are declining. Recent study indicated that there is a huge potential of diversified jute products. But changing potential market into a real market, it needs constant market promotional activities both in home & abroad. In this respect Bangladesh is lacking behind. International organization like IJSG/WTO can help in this respect.

With in this short period JDPC with its limited resource and constraint hope that it will able to invest Taka more than 1,000 core in the establishing diversified jute products industry in private sector. In this respect it is comparatively easier to produce diversified jute products by introducing new technology or modifying existing jute and cotton mill with appropriate machinery. Hundreds corer of taka capital is needed
for establishing any new industry. So it is rather better to start diversification in existing jute mill with certain modification and introducing some technology.

There is a possibility of fine yarn and blended yarn along with wet processing technologies for production of diversified jute products in home-textiles, apparels, denim/jeans, geo-textile, technical textiles, non-woven, nursery pot/sheet, different kinds of bags, attaches, soft languages and containers along with various shoes and sandals, decorative, handicrafts, jewellery etc. At present these products are produced in batch wise but for continuous supply modern continuous production engineering and quality control system have to be developed. So that in this free market economy quality, colour, design, fashion of the product can be change according to consumer need. Thus institutional framework for training and R&D activity should be pursuing in both the ends. In this respect we have initiated a few training courses with the support of IJSG and other govt. & private organizations.

There is a dart of appropriate machine and equipments for manufacturing diversified jute products. In this field there is limited/no R&D activities is really going on. So to fulfil this gape national and international bodies both private and public sector should come for word with specific plan and programme.

Quality of raw material is very important for production of diversified jute products. Here variety and retting technology along with water are very important. For quality fibre special attention is needed in the farmer level. So that quality fibre is assured. There is an enough scope for diversified uses of jute in multiple ways which has indicated above. Quality fibre, appropriate technology, constant market promotion, research & development & their application are major requirement and constraint which have to be overcome to widen diversification of jute uses in home & abroad. So commitments with constant pursuance are necessary for achieving this goal. It is a dynamic process. So, both national & international organization must work hand to hand in a most appropriate way. From Bangladesh I can assure our colleagues in Nepal that with the collaboration of International Jute Study Group we can easily achieved this as jute and allied fibres are the indigenous natural resources only available in this part of the world. For your holistic appreciation I am giving a list of diversified jute products which easily be produced from jute & allied fibres as fibre, yarn, fabric and their modifications.

**Conclusion**

In conclusion, I like to say that manufacturing of diversified jute products in Bangladesh we are late, still our achievements in this respect are satisfactory.

I like to thank Dr. Krishna Bahadur Shrestha, Chairman of the Workshop Organizing Committee, Ministry of Agriculture and Cooperatives, His Majesty’s Government of Nepal & Secretary General Mr. T. Nanda Kumar, International Jute Study Group respectively for rendering me this great opportunity to invite and present the paper in this very important and timely "Workshop on Jute and Jute Derivatives" here.
Fibre Based Products

**Group – A**

**Group – B**
Cellulose, Cellulose derivatives, CMC, MCC, Tech fibres, Sheets, Panels, Floor tiles, Damp proofing sheet, etc.

Yarn Based Products

**Group – C**
Finer yarn, Bleached yarn, Dyed yarn, Dehaired yarn, Polished yarn, Coated Yarn, Woollenized yarn, Blended yarn, Fancy yarn, Fused yarn, Core yarn, Cable yarn, Other treated yarn, Multified yarn, Fire retardant/proof yarn, Corded yarn, etc.

**Group – D**
Hammock, Shikka, Shoe, Shoe upper, Shoe sole, Sandals, Door mat, Belts, Tape, Lace, Braids, Braided Rugs, Door cheeks, Door and window screen, etc.

**Group – E**
Sweater, Cardigan, Jackets, Muffler, Caps, Carrying kits, Knitted wears, Knitted bags, etc.

Fabric Based Products

**Group – F**

**Group–G**
Suitcase, Brief case, Gift boxes, Pots, Purses, Hold- all, Seminar Bags, Folders and Files, Beach products, Jewellery box, etc.

**Group – H**
Denim, Drill, Suiting, Shirting, Sheeting, Scarf, Dress materials, Chaddar, Tapestries, Curtains, Home textiles, Furnishing fabric, Bed cover, Sofa cover, Cushion cover, Pillow cover, Scrim cloth, Apparels, Quilts, Venetian blind, Backroom, Canvas, Tarpaulin, etc.

**Group – I**
Carpet, Blanket, Mats, Satranji, Wall mats, Table mats Prayer mats, Running mats, Technical Textile, Geo- Textiles, Brattic, Linoleum backing cloth, Floor covers, etc.

**Group – J**
Grocery bags, Shopping bags, Carry bags, Laundry bags, Garbage bags, School bags, Travel bags & kits, Haver sacks, Shoulder bags, Vanity bags, Purses, Toys, Decorative Products, Berets, Nursery pots/sheet/square, etc.
POTENTIAL OF JUTE & JUTE DERIVATIVES IN INDIA

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Technical Consultant
National Centre for Jute Diversification (NCJD), India

Preamble

Jute is a natural fibre and is second only to cotton in amount produced and variety of uses. It has traditionally been used as packaging materials and to some extent carpet baking cloth. Many markets of jute have eroded when the synthetic materials came into the world market as an alternative and cheaper packing materials. The steady decline in traditional jute products has led to diversify the uses of jute. As a result of research activities/efforts, considerable progress has been made in identifying, developing and commercialising a number of diversified products.

The various product developments in the field of diversification resulted from the following two types of activities:

- Diversification of jute mill products from traditional items to a mix variegated non-traditional products such as mats, matting, bleached and dyed cloth, etc.
- Utilisation of jute fibre/ yarns outside the jute mill such as handloom/powerloom/carpet/processing/handicraft sector

Like the textile industry, jute industry is also comprised of two different segments i.e. organised mill sector and decentralised handloom/powerloom/cottage/handicraft sector. Organised jute mills are mostly located in the eastern part of the country. The decentralised handloom/handicraft units are scattered in different locations and are specialised in different diversified jute products. Consequently, a number of diversified jute products have been developed from jute fibre, yarn and fabric. The following are the market leaders in terms of consumer acceptance, marketing success and sales turnover:

- Jute & jute blended floor coverings
- Jute shopping bags & travel accessories
- Jute & jute blended fabric
- Gift articles
- Wall Hangings

The consumers' demand in respect to the above products is shown in table-1.

Wet/chemical processing of jute is an essential step for value addition and carried out in fibre, yarn and fabric forms. The processes include scouring, bleaching, dyeing, printing and finishing. However, jute differs from cotton in chemical composition. The action of chemicals on jute is somewhat different from that of cotton. The processes for cotton are therefore not directly applicable to jute. For example, scouring of jute goods, like cotton, with caustic soda solution under pressure results in high losses in strength and weight, bleaching with bleaching powder solution gives unsatisfactory
bleaching results, random selection of colourfast dye-classes from the range of cotton and wool dyes generally do not show the same high colourfastness on jute, drying of wet processed jute goods in the sun causes fading of colour/shade etc. The problems/necessity for each of the above processes have been enumerated in table- II (under column 2).

The appropriate chemical processing technology will therefore have to be provided to the decentralised units on priority basis. Moreover the market concepts for domestic and global are abolishing and there will be one market that is “Global Market”. Both the sectors are aware of the needs to equip and upgrade the current standard of working to meet consumers’ demand and market standards. Therefore transfer of appropriate technology to the decentralised units will certainly enhance their competitiveness, volume of production and fetch high value of their products as well.

SOLUTIONS & TECHNOLOGY DEVELOPED

Textile Research Associations (TRAs) have recently carried out considerable work on improvement of photo-stability (i.e. colourfastness to light) and other functional properties of both bleached and/or dyed jute.

Technological Approach

The technological approach for resolving the technical defects and/or meeting the necessities for better consumer acceptance have been mentioned briefly in table – II (under column 3)

Improved Technologies Development

The chemical operations which can be economically applied to jute to modify its fibre properties and also make the fibre more attractive and useful especially for diversified jute products are summarised below:

1. Solvent Assisted Aqueous Scouring Process

The Function of emulsified solvent scouring is to remove mineral or jute batching oil (JBO) together with other adhering/extraneous impurities. The JBO, if present in jute, has a delustering effect and also contributes additional yellowing on exposure to light. The other advantage is that strength of the material processed/scoured with emulsified solvent system is not affected.

2. Bleaching of Jute Fibre at the Batching Stage

The process is simple and based on application of bleaching chemicals through Jute Batching Oil (JBO) emulsion. It dispenses with costly wet processing machinery and other inputs like extra steam, electricity, water, labour, etc. With this process, a new horizon has opened up in the technology of manufacture of bright/bleached jute yarn and fabric of any width at a minimum cost (Chemical cost: INR 1.05/ kg). The process has been demonstrated and implemented in 21 jute mills.

3. Cold Bleaching of Jute Fibre

Root cut jute fibre (TD-3 or W-3 quality) is steeped in a cement tank containing alkaline hydrogen peroxide for 10-12 hours at room temperature. The bleaching is effected by chemical energy instead of heat. White to superior white shade can be achieved by the cold bleaching process at chemical cost of INR 3.50-6.50/ kg.
4. Chemical Dehairing and Lightfast Bleaching of Jute Fabric

Conventional peroxide or hypochlorite bleaching process primarily improves / brightens the colour of jute fabrics only. Main shortcomings of these bleached fabrics are photo-yellowing on exposure to light and surface hairiness. In view of this, Chemical Dehairing Process has successfully developed and it is based on removal of lignin from the surface layer of the fabric, so that drastic strength and weight losses could be avoided.

- Advantages
  1. Fastness to light around 3 on all jute fabric as against conventionally bleached jute fabric of rating 1. Higher fastness to light is obtained on jute- cotton union / blended fabrics.
  2. Smooth surface and no fuzziness
  3. Losses in weight and strength are within tolerable limit.

- Disadvantages
  1. The process cannot be applied in yarn stage

5. High Quality and High Colourfast Dyeing

Systematic studies of dyestuffs on jute have been carried out at TRAs. In these studies, a large number of dyestuffs categories representing acid, basic, metal-complex, direct, reactive, sulphur, vat and pigment classes were used to test dyeing, by exhaust method, on 2% hydrogen peroxide bleached jute fabrics except for the pigment class which was done by pad- dry- cure method on jute. Only 60% of dyestuffs studied had the level of colourfastness grade 3 to 4 or above. These selected dyestuffs can judiciously be applied to jute to achieve the desired level of colourfastness for various end uses. The list of colourfast dyes can be had from NCJD, India on request.

6. Energy Saving Dyeing Processes

a) Combined Scouring and Dyeing of Jute with Acid, Basic and Direct Dyes:

Conventionally jute is scoured with a detergent at 80°C prior to dyeing for the purpose of removal extraneous dirt, oil and other impurities. The detergents most commonly used are anionic surfactants, which do not remove mineral or unsaponifiable oil and fats properly. Hence a special scouring agent was prepared from non-ionic detergent, organic solvent and pine oil to aid the removal of oil and also assist in wetting out the materials. Dyeing and scouring of jute/ Mesta with acid, basic and direct classes of dyestuffs was therefore carried out separately in a single bath process using the above scouring agent. In case of direct dyes, a little amount of soda ash was employed.


b) Single Bath Bleaching & Dyeing Process:

In single-bath bleaching and dyeing process either hydrogen peroxide or sodium per borate can be used, but generally hydrogen peroxide is employed as bleaching agent. It was therefore used together with sodium meta-silicate, soda-ash/ caustic soda, common salt and a non-ionic detergent. Direct dyes sensitive to alkaline oxidation were found unsuitable and direct dyes containing copper were avoided since it accelerates the catalytic decomposition of hydrogen peroxide.
Benefits: Substantial savings in: i) Process time ii) Steam energy iii) Electrical energy and Water

7. Natural Dyeing & Printing of Jute Based Fabric
Jute is a natural fibre and has natural affinity for natural dyes due to presence free carboxyl groups (-COOH). Mordant sometimes enhance the colourfastness properties.
Jute fabric has therefore been dyed with natural colorants in moderate to good colourfastness characteristics. A shade card for colourfast natural dyes on jute has been made cataloguing colourfastness properties.
Colourfast printing technology using natural colorants and natural gum or eco-friendly synthetic thickener has also been developed for home textile and shopping/ fancy bag applications.

8. Odour-free Printing of Jute Fabric
Jute bags for ‘Basmati rice’ or shopping/ fancy bags are generally printed with pigment using kerosene or Mineral Turpentine Oil (MTO). Consequently, it gives off bad smell and sometimes affects the aroma of the contents.
Process for odour-free printing of jute fabric using natural polymer /eco-friendly thickener and binder has been successfully developed.

9. Chemical Finishing of Jute Cloth
Finishing plays a key role in increasing marketability of fabrics. With the judicious application of the softener, resins and other auxiliary chemicals in the finishing treatments of textiles, various desirable functional characteristics can be achieved.

- Improvement in Softness
  Jute based fabric is treated with a cationic softener for about 20 - 30 min at 40°C. The finished material is then squeezed in a padder and then dried.

- Improvement in Handle and Draping Quality
  Jute based fabric is treated with a very low concentration of alkali for 30 min at 80 - 85°C. The alkali treated fabric is then rinsed to remove alkali and finally neutralised with acetic acid. After-treatment of the fabric is carried out with a small amount of a softening agent such as cationic softener or polyethylene emulsion.

- Improvement in Resistance to Fibre-shedding and Abrasion
  Improvement in above properties of jute can be achieved by application of thermoplastic resins /elastomers, cellulose gum (CMC), acrylic co-polymers, etc.

10. Woollenising
The object of woollenising is to confer extensibility, flexibility and softness to jute as well as to substitute either costly wool or coarser count cotton yarn. Woollenising of jute is effected by treatment with concentrated caustic soda solution in the cold or at room temperature. Remarkable change occurs in its physical structure like lateral swelling together with longitudinal shrinkage. As a result, the fibre is soft to the touch and develops crimps like wool.
11. Rot Proofing
Jute is susceptible to microbiological attack, which results in a considerable loss of strength. Humid condition accelerates microbiological growth on the fibre materials; the susceptibility is increased further after alkali or bleaching treatment and after exposure to light/heat.

Treatments are generally carried out with a number of selected antiseptics like copper salt/soap or copper napthenate, chlorinated phenols, etc.

These agents are superficially deposited on the jute materials either from solution or by padding technique.

12. Water Repellent Finish
The treatments most commonly applied to jute are the use of wax/stearate mixtures by immersion or pad-dry method and stabilised rubber latex solution by coating technique.

The coating technique is generally employed for heavy goods while emulsion treatments are conducted on lighter materials.

13. Fire Retardant Finish
Most of the textile fibres are combustible and hence they can cause fire-hazards during use. Jute fabric is treated with flame retardant chemicals like di-ammonium phosphate, borax - boric acid and ammonium sulphate -di-ammonium phosphate. The treated fabric is dried and then cured. The treated fabric shows satisfactory fire retardant property but not fast to wash i.e. leachable.

These fire-retardant jute based fabrics find use as underlay for upholstery, wall covering, curtains and brattice cloth for use in coal mines.

Machinery for Bleaching and Dyeing of Jute
Chemical processing of jute is carried out in the form of fibre, yarn and fabric. Bleaching and/or dyeing of jute fibre or yarns is usually done for manufacture of carpets, mats, matting, etc. while jute fabrics are processed for manufacture of decorative, carry bags, soft luggage and other lifestyle usage products.

The equipment and machinery used for jute wet processing are very conventional and labour intensive (Table-III & IV).

Jute fibre or yarns are mostly processed in tanks or vats and a few jute mills have loose stock/yarn package dyeing machine. After bleaching/dyeing, the materials are hydroextracted and dried in chamber dryer or in air under shade.

But jute fabrics, being heavy and coarse, are processed in open-width form in jigger machine and not in rope form. After processing, the excess water is removed by pneumatic padding mangle prior to drying on vertical drying range. Sometimes the fabrics are processed through weft straightener for maintenance of width and calendared to improve fabric handle, surface texture and appearance. Special finishing treatment is however carried out by pad-dry/cure technique using pneumatic padding mangle and hot air stenter (clip type).

Bleached and/or dyed jute fabric are laminated with low density polythene (LDPE) on extrusion plant for shopping bag, rice bag and soft luggage applications.
Printing of jute fabric is mostly done by print- dry and/ or curing method using screens, pigment emulsion and synthetic pigment binder.

**Acknowledgement:**

The author is thankful to Mr. T. Nanda Kumar, Secretary General, International Jute Study Group (IJSG), Dhaka, Bangladesh for inviting me to present this paper at Biratnagar Workshop, Nepal.

The author gratefully acknowledges Mr. S. Majumdar, Jute Commissioner, Ministry of Textiles, Government of India for his continuous encouragement and support for implementation of these technologies in the jute sector.

Thanks are also due Mr. Sourav Das, The Executive Director, National Centre for Jute Diversification (NCJD) & Deputy Jute Commissioner for rendering valuable suggestions for preparation of the paper and permission to present the paper for larger interest of jute sector in Nepal.

<table>
<thead>
<tr>
<th>Table 1. Functional Properties Desired for Some Commercial Products</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product</strong></td>
</tr>
<tr>
<td>Floor Coverings</td>
</tr>
<tr>
<td>Jute shopping bags &amp; travel accessories</td>
</tr>
<tr>
<td>Jute &amp; jute blended fabric</td>
</tr>
<tr>
<td>Gift articles</td>
</tr>
<tr>
<td>Wall hangings</td>
</tr>
<tr>
<td>Process</td>
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<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>1. Preparatory Process</td>
</tr>
<tr>
<td>a) Scouring</td>
</tr>
<tr>
<td>b) Bleaching</td>
</tr>
<tr>
<td>3. Printing</td>
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<tr>
<td>3. Finishing</td>
</tr>
<tr>
<td>a) Chemical</td>
</tr>
<tr>
<td>b) Woollenising</td>
</tr>
<tr>
<td>c) Rot proofing</td>
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<tr>
<td>d) Water-repellent</td>
</tr>
<tr>
<td>e) Fire-retardant</td>
</tr>
</tbody>
</table>
Trend of Raw Jute Production and Jute Products Manufacturing in Nepal

Export of Jute Products from Nepal

Export India
- 1999/00: 1103
- 2000/01: 1407
- 2001/02: 1638
- 2002/03: 1899
- 2003/04: 1883

Export Overseas
- 1999/00: 3.78
- 2000/01: 8.55
- 2001/02: 3.57
- 2002/03: 6.07
- 2003/04: 4.16
Nepalese Jute Product Importing Countries

- India is the Major Importer of Jute Products from Nepal (~95% of products are destined to India)
- Other Overseas Buyers are from Germany, US, Japan and Norway
- Potential Buyers: Italy, Canada, Spain, Australia, S. Korea, Netherlands

Import of Raw Jute and Jute Goods 1999-2004

<table>
<thead>
<tr>
<th>Year</th>
<th>Value (in million Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999/00</td>
<td>57.56</td>
</tr>
<tr>
<td>2000/01</td>
<td>113.3</td>
</tr>
<tr>
<td>2001/02</td>
<td>66.1</td>
</tr>
<tr>
<td>2002/03</td>
<td>55</td>
</tr>
<tr>
<td>2003/04</td>
<td>86.5</td>
</tr>
</tbody>
</table>

Nepalese Import of Jute and Jute Products

- From India:
  - Mostly Raw / retted jute, Jute Sacks, Hessians and Rope
    (Average of about 8000 MT of raw jute from India is imported by Nepalese Jute mills as per GOI official data but NJMA data shows Nepal’s total import from both India and Bangladesh, of about 45000 MT in 2004)
- From Bangladesh:
  - All retted/raw jutes
Jute Products

### Conventional Products
- Yarn
- Rope and Twine
- Carpet Backing Cloth(CBC)
- Hessian
- Sacks
- Jute Bleached cloths

### Diversified Products
- Home Textiles(Matting, blended fabrics, upholstery)
- Bags( Shopping/Hand)
- Fashion accessories
- Technical Textiles/
- Geo Textiles/Soil savers
- Floor coverings
- Handicrafts, Foot Wears etc

![Jute Export Prices](chart.png)
Jute Product Export of Nepal (NJMA - Data 2005)

![Graph showing jute product export from 2001 to 2004.]

- Hessian: 4818, 6393, 7777, 8666
- Sacking: 13676, 19868, 25474, 30578
- Twine and others: 21599, 26996, 27953, 29079
- Total: 40092, 53257, 61203, 68322

Jute Production in Nepal Data by HMG and NJMA

![Graph showing jute production from 2001 to 2004.]

Industrial Production of Jute Products in Nepal Data from HMG and NJMA

<table>
<thead>
<tr>
<th>Year</th>
<th>HMG Data</th>
<th>NJMA Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>40,000</td>
<td>50,000</td>
</tr>
<tr>
<td>2002</td>
<td>50,000</td>
<td>60,000</td>
</tr>
<tr>
<td>2003</td>
<td>60,000</td>
<td>70,000</td>
</tr>
<tr>
<td>2004</td>
<td>70,000</td>
<td>80,000</td>
</tr>
</tbody>
</table>

Status of Jute Industries

- 11 industries registered with Department of Industry but only 10 are established and only 9 are operational
- Average Daily production: about 275 MT
- In 2003/04 total jute products manufactured by 9 industries: 34,862 MT by DOI but NJMA data shows ~73,700 MT (trend shows it is increasing)
- About 40% of the raw jute requirements are supplied domestically. 60% raw jutes are procured from India and Bangladesh
- Capacity Utilization: 65-72%

Things that need to be done

- Improved Seed production for increasing yield and high grade jutes
- Development of Quality Assurance Methodology for jute and jute-based products
- Development of different types of jute-based technical textiles, with special emphasis on jute geo-textiles
- Standardization of jute & jute-based products
- Development of testing instruments for jute and jute based products and providing testing services
- Modernization of jute mill machineries
- Organizing intensive HRD programs for jute industry in the area of chemical processing, mechanical processing and, design & developments, quality assurances etc
- Creation of self-employment opportunities, for SME sector
- Promotion of production and marketing of jute / fibres handicrafts
Required Promotional Activities

- Undertaking extensive publicity of jute and jute goods as environment-friendly natural fibre and diversification of the uses of jute products
- Enhancing technological strength and productivity and facilitating reduce cost and attain internationally accepted standard of quality of exportable products and thereby consolidate their competitiveness
- Ensuring maximum use of local raw materials in the production of export goods and encouraging establishment of backward linkage industries
- Participation in the international trade fairs, specialized fairs, single country exhibitions abroad and also sending out trade missions, with a view to consolidating our position in the existing market and creating new markets
- Undertaking programs for raising quality standard and expansion of market

Bangladesh Government’s support for Jute Development

- Value Added Tax (VAT) on packaging materials:
  - Should jute clothes and bags be used in the packing of export goods, VAT paid on such products will be refunded
- As an incentive to export jute yam and twine, marketing assistance at the rate of 10% of F.O.B. value is being extended to the exporters of this sector for a period of three years commencing from 1997
- Reform programs will continue for the development of the jute sector
- For developing the export of jute and jute goods, wide publicity is undertaken abroad highlighting the comparative advantage as a natural fibre. Steps were also be taken to demonstrate the diversified uses of jute goods

India Government’s support for Jute Development

GOI has many promotional schemes for Jute Growers and Jute Product Manufacturers. For these, in 2004-05, it has allocated IC Rs. 183 million as annual budget. The schemes are:

- Jute Service Centre Schemes for Extension supports to farmers
- Jute Raw Material Bank Schemes for SME’s to produce diversified products
- Market Support Schemes in support of export promotion and domestic market developments
- Jute Entrepreneurs Assistance (10-15% capital subsidies over the cost of plant and machineries for product diversification projects)

Where should we go?

- Nepal is sixth country having Jute industries and in global trade of jute (most of the major countries are the members of the BIMSTEC)
- Nepal has to remain competitive if it is to be in the global market hence productivity, quality and cost reduction and diversification programs are highly required
- Government of Nepal will have to re-prioritise the jute as the important commodity sector if the potential is established (a thorough study is to be
proposed to find out a competitive position and refocus the production technical manpower generation, product diversification and market promotion programs

- No support programs from the HMG/Nepal exists currently (except that of NARC Jute Program) for the Jute Production and Jute product manufacturing and marketing, making the competitiveness questionable

**Agro Enterprise Center (AEC/FNCCI)**

- It is a technical wing of Federation of Nepalese Chambers of Commerce and Industry (FNCCI) looking after agriculture and private sector Agro-business promotion
- Its current thrust is in counselling for business establishment, advocacy for policy improvement, market information services, export market linkages/facilitation
- AEC’s current priority commodities are high value cash crops like Tea, Vegetable Seeds, Coffee, Spices, Non-timber forest products, Floriculture, Beekeeping and Honey; Vegetables etc

**Partnership Approach**

- Nepal Jute Mills Association is also one of the Member Commodity Association of FNCCI
- AEC is closely assessing the prospect of prioritising Jute products and Leather products as the potential commodities where the Government will have to consider bringing commodity policies to develop and expand production and international market
- Jute Industries are also equally responsible for the sub sector expansion and should come forward with clear opinions and plans and start considering public private partnership approach in addressing the issues and participating in developmental programs

**AEC’s Possible Roles**

- At the request of Nepal Jute Mills (October 2004) AEC did a policy advocacy with Government of India, Directorate of Plant Protection, Quarantine and Storage for delisting of Jute Products from the requirement of complying Plant Quarantine Order 2003 Quarantine Regulation of India
- In November 2004, after intensive advocacy both by AEC and NJMA, GOI Plant Quarantine Advisor had officially de-listed the jute products from compliance requirements
- This is one of the examples where collective efforts could bring good results
- AEC could take a crucial role in commodity policy development provided it was agreed that such policy is recommended from the floor
- It also could play a facilitator’s role in market promotion through organizing buyer sellers meetings, trade fairs etc
- It could also provide Market Information Service and act as market intelligentsia, in relation to WTO’s SPS/TBT requirements and issues
ROLE AND STRATEGIES OF THE INTERNATIONAL JUTE STUDY GROUP (IJSG)

Md. Siddiquur Rahman
Consultant (Operations)
International Jute Study Group (IJSG)

Background

Jute, Kenaf, and other Allied Fibres (JAF) are the second most important natural fibres next to cotton. JAF are cash crops of great socio-economic importance in countries like, Bangladesh, India, Nepal, China, and Thailand, since they provide sustenance to more than 12 million small and marginal farm families for their livelihood.

It provides employment to hundreds of thousand of other people in the processing, manufacturing, trading of jute and jute goods. The end products of jute are used by a large number of people around the world. Jute agriculture is labour intensive, providing a scope for employment of family labour including women. The organised development of jute would, therefore, contribute to sustainable economic development and poverty alleviation of the producing countries.

About International Jute Study Group (IJSG)

The International Jute Study Group (IJSG) is an Intergovernmental Body set up under the aegis of UNCTAD to function as the International Commodity Body (ICB) for Jute, Kenaf and other allied fibres.

The importance of jute and jute products to the economies of a number of countries has led to the formation of the International Jute Study Group (IJSG) for promoting the cause of jute. It was considered that close International Corporation in finding solutions to the problems facing this commodity will further the economic development of the exporting countries and strengthen cooperation between exporting and importing countries.

It was also felt necessary to promote diversified uses of jute through research and development to sustain demand and production of jute.

It is the legal, administrative, financial and operational successor entity to the International Jute Organisation (IJO) initially established under the International Agreement on Jute and Jute Products, 1982.

Objectives of IJSG

The International Jute Study Group functions for the benefit of both exporting and importing members, with a view to achieving the following relevant objectives adopted by the United National Conference on Trade and Development.

- To provide an effective framework for international cooperation, consultation and policy development among members with regard to all relevant aspects of the world jute economy;
To promote the expansion of international trade in jute and jute products by maintaining existing markets and by developing new markets, including the introduction of new jute products and the development of new end-uses;

To provide a forum for the active participation of the private sector in the development of the jute sector;

To address the issues of poverty alleviation, employment and development of human resources, particularly women, in the jute sector;

To facilitate the improvement of structural conditions in the jute sector through improvement of productivity and quality, and promotion of the application of new processes and technologies;

To create and increase awareness of the beneficial effects of the use of jute as an environmentally friendly, renewable and biodegradable natural fibre;

To improve market intelligence with a view to ensuring greater transparency in the international jute market in collaboration with other organizations, including the Food and Agriculture Organization of the United Nations (FAO).

**Strategy of IJSG**

To achieve the objectives of the Group, the IJSG Secretariat is pursuing a strategy for the improvement of world jute economy with particular emphasis on generic promotion of jute and jute products. The strategy has been developed keeping in view the present world jute situation and the future prospects of jute.

The Strategy has been developed considering the major issues like

- Continuing loss of market of the traditional packaging segment to synthetic substitute;
- Developing products like geotextiles, composites, etc. and their market promotion; and
- Taking advantage of emerging environmental considerations and consumer preferences for promoting new and diversified jute products;

The developed strategy is oriented towards increasing the market for traditional products, developing new applications for traditional products, developing new products, improvement of productivity and product quality, addressing supply side management issues, and increasing consumer awareness by highlighting the environment friendliness of jute and kenaf.

The strategy has the following elements:

- Retain and if possible, increase the market for traditional jute and kenaf products
- Develop new applications of traditional products
- Develop new products using the advantages of natural fibres
- Improve fibre quality
- Improve productivity and product quality
- Make use of the sustainable development agenda
- Increase consumer awareness by highlighting the environment friendliness of jute and kenaf
- Address trade issues
- Address supply side management issues
- Create an R&D networks
- Highlight Employment Opportunities

**The Group Has The Following Functions:**

- To initiate, sponsor, supervise, monitor, and act as a catalyst with respect to projects and related activities aimed at improving the structural conditions of the world jute economy and the general economic well-being of those employed therein. In exceptional cases, the involvement of the Group in the implementation of projects shall be approved by the Council, provided that this involvement shall not bring about any additional costs for the administrative budget of the Group;
- To conduct consultations and exchanges of information on the international jute economy;
- To provide and improve statistics and market intelligence on jute and jute-based products in consultation with the Food and Agriculture Organization of the United Nations and other appropriate bodies;
- To undertake studies on various aspects of the world jute economy and related issues; and
- To consider problems or difficulties that may arise in the international jute economy. In implementing its functions, the Group takes into account the activities of other relevant international organizations, including the Food and Agriculture Organization of the United Nations (FAO).

**Membership**

Membership of the Group is open to all States (Countries) and the European Community which are interested in the production or consumption of, or international trade, in jute or jute products, and with the agreement of the Council, to any intergovernmental organization having responsibilities in respect of the negotiation, conclusion and application of international agreements.

**Associate Membership**

Associate Membership of the Group is open to those organizations and entities that are not entitled to full membership. This includes all associations, companies, and other entities concerned with the development of jute. At present there are 39 (thirty nine) Associate Members from different countries. Arihant Multi-Fibres Limited, Biratnagar, Nepal is an Associate Member of IJSG.

**Council**

The highest authority of the Group is the Council consisting of all Members of the organisation. The Council may, in certain circumstances, delegate its powers relating to the approval of projects and related activities.
The Committee on Projects (COP)

The International Jute Study Group has a Committee on Projects (COP), which is open to all members. The Committee may invite associate members and other interested parties to participate in its work;

The Committee on Projects shall advise the Council on all aspects of projects and related activities in accordance with the rules established by the Council;

The COP considers the project proposals received from the members and R&D institutions of the member countries and also project proposals/project ideas prepared by the IJSG Secretariat for approval and prioritisation.

The Private Sector Consultative Board (PSCB)

To facilitate interaction with the private sector a Private Sector Consultative Board (PSCB) has been established. The Consultative Board is a consultative body, which may make recommendations to the Council in matters related to the Terms of Reference of IJSG.

The Consultative Board consists of Associate Members. Other private sector entities which express a relevant interest may participate by invitation. The Consultative Board submits regular reports to the Council.

Committees and Subsidiary Bodies

The Council may establish other committees or subsidiary bodies, in addition to the Committee on Projects and the Private Sector Consultative Board on such terms and conditions as it may determine.

The Group makes arrangements for consultations and cooperation with the United Nations, its organs or specialized agencies, and with other intergovernmental organizations and institutions, as appropriate.

The Group also makes such arrangements as it considers appropriate for maintaining contact with interested Governments of non-member countries, with national and international non-governmental institutions, with private sector organizations and with research institutions which are not associate members.

Observers are invited to attend meetings of the Council or its subsidiary bodies on such terms and conditions as the Council or those bodies may decide.

Relationship with the Common Fund

The Group is designated as an International Commodity Body (ICB) under article 7(9) of the Agreement establishing the Common Fund for Commodities (CFC), for the purpose of sponsoring projects on jute and jute products to be financed by the Fund. The Secretary-General is authorized to conclude Agreements with the Fund for approved projects.

Statistics, Studies and Market Information

The Group analyses and processes jute trade information and statistics collected from the Food and Agriculture Organization of the United Nations (FAO), other
international and national institutions and the private sector. The Group provides and makes available to members, associate members and other interested parties the market outlooks and intelligence, including information on stocks and consumption by specific markets and end-use industries. The Group also encourages national institutions in producing member countries to improve data collection in the jute sector and to disseminate the results to all interested parties.

**Annual Assessment and Reports**

The Group undertakes an annual assessment of the world jute situation and related matters in the light of information supplied by members and supplemented by information from all other relevant sources. The annual assessment includes a review of expected jute production and an outlook for jute production, consumption and trade for the following calendar year, for the purpose of assisting members in their individual assessments of the evolution of the international jute economy.

The Group prepares a report incorporating the results of the annual assessment and distributes it to members. If the Group deems it appropriate, this report, as well as other reports and studies distributed to members makes available to other interested parties in accordance with the rules of procedure.

**Market Development**

The Group, in consultation with members, Associate Members and interested parties, identify constraints and opportunities in the world market for jute and jute products with a view to undertaking appropriate activities, with particular reference to increasing the demand and developing the market for jute and jute products, as well as dissemination and commercial exploitation of emerging technologies.

**Recently Completed Projects**

- IJSG has completed a project on “Biotechnological Application of Enzyme for Production of Pulp and Paper from Green Jute/Kenaf Plants” the results of which has been disseminated by holding workshops in India and Bangladesh. It has been possible to produce kraft and white paper from whole jute plants under a commercial trial conducted in a paper mill of Bangladesh. While the world is searching for “tree-free” alternatives for making pulp and paper the success of this project is expected to go a long way not only in protecting the environment but also in improving the conditions of jute/kenaf farmers.
- IJSG has established a website [www.jute.org](http://www.jute.org) which contains all relevant information about IJSG, achievements of the completed projects, list of Associate Members, manufacturer of jute products and information about them, information on traditional as well as diversified products, and Standards of different jute products of Bangladesh, India and Pakistan.
- IJSG has established a Library and Resource Centre within the IJSG premises which contain relevant books, technical articles, journals and other project related information.
- The IJSG Secretariat organised a two-day workshop on “Productivity Improvement in the Jute Industry” where a large number of papers on improvement of productivity, machinery modification etc. were presented.
A post workshop evaluation has revealed that papers and information presented in the workshop were useful to the industry.

- With the aim of providing design support to the small / medium scale producers of jute diversified products very recently we have completed a project on Design Workshop for jute diversified products both in India and Bangladesh. We are also working for implementation of the Second phase of this project.
- To elucidate more information on the conventional and improved retting practices, the IJSG Secretariat organised a one-day workshop in last September where experts from India, Nepal and Bangladesh presented papers. The recommendations of the workshop have been circulated to all the participants and are available in the IJSG website.
- The IJSG Secretariat organised a one-day workshop on Seed Situation of India Nepal and Bangladesh. Recommendations of this workshop have been circulated to all the participants and are available in the IJSG website.

On-Going Projects

- Currently the IJSG Secretariat is implementing a project on “Jute Reinforced Polyolefines for Industrial Applications: Phase II: Material Optimisation and Process Up-Scaling for commercialisation”. The objectives of the project are:
  - To develop pilot scale jute/PP granules
  - To apply these granules to produce different products

The project is being implemented by Agro-Technology and Food Innovations, Netherlands with involvement of private partners from India and Bangladesh.

- The IJSG Secretariat is implementing a project on “Designing of New Metallic Card Clothing for Jute Cards”. The project is being implemented by IJIRA, Kolkata, India. The successful completion of the project will improve the productivity and quality of jute yarn.
- The IJSG Secretariat is about to start the implementation of a very important project on “Small Scale Entrepreneurship Development in Diversified Jute Products”. The project will be implemented by NCJD, India and JDPC, Bangladesh. The objectives of this project are:
  - To transfer small scale technologies which are technically viable and environmentally sound to manufacture jute blended products for home textiles.
  - To cater to the existing handlooms and, if possible, to power looms, for producing jute blended cloth for mass consumption.
  - To provide centralised support services in Bangladesh and India in the form of Raw Material Banks (RMBs) and Jute Entrepreneur Service Centre (JESCs) offering technical and design support and market linkage.
  - To establish processing centres for facilitating bleaching, dyeing and finishing of yarns and fabrics.
- The Secretariat is processing a project on “Development and Application of Potentially Important Jute Geotextiles”. Consultative Committee of Common Fund for Commodities (CFC) has recommended the project proposal to the Executive Board for approval.
The Secretariat is preparing an interactive CD on Jute as a publicity material to create awareness.

The Secretariat is implementing a project on preparation of Common HS Codes for jute and jute products including product description. It is expected that the finalisation of the report would be completed soon.

The secretariat has taken up a project on “A Publication on Jute and Kenaf” to prepare a comprehensive book / CD including all aspects of jute and kenaf.

The IJSG Secretariat is going to take up a project on “Identification and Evaluation of Germplasm of Kenaf for Specific Applications and is looking forward for suitable partners from Nepal to be incorporated in the project.

Nepal and Erstwhile IJO and IJSG

Nepal was a Member of erstwhile IJO and participated in the implementation of a number of Agricultural and Industrial projects sponsored by IJO such as

- Collection, Conservation, Characterisation and Exchange of Germplasm for the Development of Improved Varieties of Jute/Kenaf and other Allied Fibres;
- Strengthening Jute and Kenaf Seed Programme
- Improved Retting and Extraction of Jute
- Jute Seeder Development
- Support for Varietals Improvement of Jute and Kenaf for Increased Productivity
- Adaptive Research on Improved Varieties of Jute and Allied Fibres and their Utilisation for Enhanced Income Generation Development of Improved Processing
- Techniques for Low Grade Jute including Cuttings Technical Survey and Market Study of the Potential Jute Geotextiles

IJSG is of the view that for the overall growth of this sector and for the promotion of jute and jute products, the non member countries related with production and consumption with jute and allied fibres (JAF) may be involved in various JAF related activities. Promotional activities like holding seminar /workshop in a non-member country will facilitate promotion of JAF products in that country and provide an opportunity to project the different beneficial attributes of JAF and their products by which concerned country may be benefited. This might encourage the concerned government to decide in favour of more usage of JAF products and also to work more closely with IJSG.

It is a fact that each country has a different approach for production, application, trade and marketing of natural fibres and their products. New issues also may emerge from time to time in the constantly changing global scenario.

In this back drop IJSG Secretariat has felt it necessary to organise a seminar / workshop in Nepal with the hope that it will help identify the country specific problems and provide suggestions to take appropriate decisions.

Jute and allied fibres have a bright future but for its sustainable development and promotion it needs strengthening of R&D efforts both nationally and internationally under the umbrella of IJSG to meet the challenges of synthetics as well as the needs of the environmentally conscious consumers. It also requires a commitment and involvement from national governments along with the commitment of the jute trade industry to use the research results to make jute and jute products more competitive.
RECOMMENDATION OF GROUPS

Group I: Production Technology

Constraints related to jute production

- High cost of cultivation
- Seed unavailability
- Problem in retting due to water and labour
- Weed problem
- Low price
- Low priority in jute research and development
- Unavailability of inputs in time
- Lack of coordination among stakeholders

Solutions

- Seed: Foundation Seed-NARC (JRP)
- Certified Seed- National Seed Company/CBSP
- Verification of technologies related to weeding and retting
- Low cost need based technologies generation
- Training to technicians and farmers
- Jute crop to be prioritized as a commercial crop
- A separate jute policy implementing body to be formed
- Strong coordination among growers, industrialist and research and development on participatory approach
- Assure supply of quality inputs in time
- A jute crops well fare fund is established for research and development

Group II: Jute Marketing

The group recommended following measures to promote internal and external jute marketing:

Domestic Marketing

- Awareness program:
  - Eco-friendly, biodegradable and durable
- Regulatory measures:
  - Compulsory use of jute packaging materials for food grains
- Trade fair/ exhibition/ documentary
- Advertisement (Radio, T.V. etc)
- Marketing information services- Place, process, linkages, price trend, time
- Provision of insurance
- Infrastructure (Especially godown) through cooperatives
- Product modification, diversification, blending
Export marketing

- Explore new markets
- Reduce taxes - custom, VAT
- Trade fairs, workshop, buyer-seller interaction
- Marketing information services system
- Increase competitiveness by technical know-how, quality control
- Proactive role of government machinery
- Linkage with international organizations

Group III: Product Diversification

<table>
<thead>
<tr>
<th></th>
<th>Organised Sector</th>
<th>Decentralised sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy:</td>
<td>Adoption of modern technology for jute diversified products</td>
<td>Development and strengthening of unorganized handicraft sector</td>
</tr>
<tr>
<td>Programs:</td>
<td>Diversification of non-conventional jute products in mills</td>
<td>To create employment opportunities for small entrepreneurs, Women folk, NGOs through diversification of jute products</td>
</tr>
<tr>
<td>Planning:</td>
<td>Improvement in quality and reduction in cost</td>
<td>Provide forward and backward linkages</td>
</tr>
<tr>
<td>Strategies:</td>
<td>Technical know how/supports from experts for implementation of technology</td>
<td>To set up 2 Jute service Centre and Raw Jute Materials Bank - one in Sunsari, Itahari and another in Thamel, Kathmandu</td>
</tr>
<tr>
<td>Projects:</td>
<td>6. Bleaching at batching stage without capital investment on machinery</td>
<td>1. Training of artisans through Jute Service Centre for production of jute diversified products</td>
</tr>
<tr>
<td></td>
<td>7. Improvement in brighter colour of raw jute of Nepal which is dark in colour</td>
<td>2. To provide raw materials to artisan in small quantity at mill gate price through Raw Jute Materials Banks</td>
</tr>
<tr>
<td></td>
<td>8. Bleaching and dying at fabric stage in single stage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. Super white colour in two bath systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10. Bleaching of jute fibre to produce lighter count (6-8 lbs) of yarn</td>
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</table>
WORKSHOP RECOMMENDATIONS AND SUGGESTIONS

Recommendation on production

- District Agriculture Development Office must give priority to this crop and begin extension activities right from coming fiscal year
- NARC should strengthen and give priority to Jute Research Program focusing on development of technology that reduces the cost of production as well as increase the production of high grade jute
- NICDEP and DADO must be strengthen with jute specialists: Training and workshop opportunities shall be provided to the NICDEP as well as DADO staff
- NARC and NSC should give extra effort to produce required amount of foundation and certified seed respectively.
- Seed production program shall be launched by DADOs of suitable jute seed growing districts
- Retting is the foremost problem in jute production, therefore, modern retting technology that consume less labour and water shall be promoted

Recommendation on marketing

- There should be a provision of fixing minimum support price before planting
- Mechanism for smooth procurement of raw jute should be established
- Domestic market of jute products should be promoted:
  1. Awareness program:
     - Eco-friendly, biodegradable and durable
  2. Regulatory measures:
     - Compulsory use of jute packaging materials for food grains
  3. Trade fair/ exhibition/ documentary
  4. Advertisement (Radio, T.V. etc)
  5. Marketing information services:- Place, process, linkages, price trend, time
  6. Provision of insurance
  7. Infrastructure (Especially godown) through cooperatives
  8. Product modification, diversification, blending

- Similarly following measures should be adapted to promote the external market of jute products:
  1. Explore new markets
  2. Reduce taxes- custom, VAT
  3. Trade fairs, workshop, buyer-seller interaction
  4. Marketing information services system
  5. Increase competitiveness by technical know-how, quality control
  6. Proactive role of government machinery
  7. Linkage with international organizations
Recommendation on product diversification

- Product diversification should be started both in organized (industries) and decentralized (cottage industries, women folk etc.) sectors
- The technicians of industries and, people engaging in handicraft sectors should be imparted with modern knowledge of product diversification

Recommendations not cover elsewhere

- The industrialists and farmers have strongly recommended to establish a separate body that deals with jute research and development
- Farmers should form a Jute Growers Association
- There is an immediate need of conducting a study on competitiveness of jute over other crops in Nepal
- A strong linkage among farmers, industries and government institutions should be built up and coordinated projects should be launched
- Along with public sector, farmers and industries should play proactive role to create confidence among each other
- An exchange program among jute exporting countries should be initiated
- Nepal should be a member of IJSG
APPENDICES
Appendix 1: Workshop Schedule

International Workshop on “Promotion of Jute and Jute Derivatives in Nepal”
(21-23 March, 2005)

Venue: Namaskar Hotel, Biratnagar, Nepal

Chief Guest: Hon. Dr. H. K. Upadhyaya, Member National Planning Commission

Chairman: Mr. G. P. Pandey, Secretary Ministry of Agriculture & Cooperatives

Guest of Honour: Mr. Diwakar Golecha, Vice Chairman FNCCI

Special Guest: Mr. T. Nanda Kumar, Secretary General IJSG

Master of Ceremony: Mr. G. P. Pradhan, NICDEP

Rapporteurs: Ms. N. D. Pandey, NICDEP
Mr. T. B. Ghimire, JRC

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Topics</th>
<th>Resource Persons</th>
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<tr>
<td>21 March, 2005 (Monday)</td>
<td>First session (Inaugural Session)</td>
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<tr>
<td>08:30-09:00</td>
<td>Registration</td>
<td>Workshop Organizing Committee</td>
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<td>09:00-09:15</td>
<td>Chairperson, Chief guest, Special guest and others take seat at dais of the workshop</td>
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<tr>
<td>09:15-09:25</td>
<td>Welcome address</td>
<td>Dr. K. B. Shrestha, Joint Secretary, MOAC/Chairman, WOC</td>
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<tr>
<td>09:25-09:40</td>
<td>Introduction and Objectives of the workshop</td>
<td>Ms. Niru Dahal Pandey, Act. Chief, NICDEP/Member Secretary, WOC</td>
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<tr>
<td>09:40-10:00</td>
<td>Inauguration</td>
<td>The Chief Guest</td>
</tr>
<tr>
<td>10:00-10:50</td>
<td>Few words from:</td>
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<tr>
<td></td>
<td>Nepal Jute Mills Association</td>
<td>Mr. Champa Lal Rathi, Chairman</td>
</tr>
<tr>
<td></td>
<td>Jute Growing Farmer</td>
<td>Mr. Mahendra Kumar Shah</td>
</tr>
<tr>
<td></td>
<td>Morang Byapar Sangh</td>
<td>Mr. Basu Dev Golyan, Director</td>
</tr>
<tr>
<td></td>
<td>Udyog Sangathan Morang</td>
<td>Mr. Kishor Pradhan</td>
</tr>
<tr>
<td></td>
<td>Guest of Honour</td>
<td>Mr. Diwakar Golecha, FNCCI</td>
</tr>
<tr>
<td></td>
<td>Nepal Agriculture Research Council</td>
<td>Mr. D. S. Pathik, ED</td>
</tr>
<tr>
<td></td>
<td>Special Guest</td>
<td>Mr. T. Nanda Kumar, Secy. Gen., IJSG</td>
</tr>
<tr>
<td>10:50-11:10</td>
<td>Vote of Thanks</td>
<td>Dr. D. B. Swar, DDG, DOA/ Member, WOC</td>
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<tr>
<td>11:10-11:25hrs</td>
<td>Closing statement of inaugural session</td>
<td>Chairperson</td>
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<tr>
<td>11:25-12:30hrs</td>
<td>Lunch Break</td>
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</tr>
<tr>
<td>Name</td>
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<td>Organization/Department</td>
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<tr>
<td>Mr. Pokharel Achut</td>
<td>P. Senior Officer</td>
<td>Trade Promotion Centre, Biratnagar</td>
</tr>
<tr>
<td>Mr. Poudel Yoga</td>
<td>Raj Chief District Officer</td>
<td>District Administration office, Morang</td>
</tr>
<tr>
<td>Mr. Poudyal Shyam</td>
<td>Third Vice President</td>
<td>Chamber of Industry, Morang</td>
</tr>
<tr>
<td>Mr. Pradhan Gautam</td>
<td>Prasad Agronomist</td>
<td>National Industrial Crop Development Program, DOA</td>
</tr>
<tr>
<td>Mr. Rahman Md. Siddiqu</td>
<td>Consultant (Operation)</td>
<td>LISC, Dhaka</td>
</tr>
<tr>
<td>Mr. Rajbanshi Badri</td>
<td>Narayan Group Leader (Farmer)</td>
<td>Morang Rangeli-4</td>
</tr>
<tr>
<td>Mr. Rajbanshi Manoj</td>
<td>Staff</td>
<td>Baba Jute Mills (P) Ltd, Kathari Morang</td>
</tr>
<tr>
<td>Mr. Rajbanshi Rajendra</td>
<td>Prasad Farmer</td>
<td>Tapuwa-2, Morang</td>
</tr>
<tr>
<td>Mr. Rathi Champa Lal</td>
<td>Chairman</td>
<td>Nepal Jute Mills Association, Biratnagar</td>
</tr>
<tr>
<td>Mr. Rathi Nanda Kishore</td>
<td>Director</td>
<td>C.M. Jute Mills (P) Ltd., Biratnagar</td>
</tr>
<tr>
<td>Mr. Rathi Ramesh</td>
<td>Kumar Director</td>
<td>Swastik Jute Mills Pvt Ltd</td>
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<tr>
<td>Mr. Rathi Sohan Lal</td>
<td>EM</td>
<td>Nepal Jute Industry Pvt. Ltd, Morang</td>
</tr>
<tr>
<td>Mr. Rijal Gayatri</td>
<td>Prasad Chairman</td>
<td>Swastik Jute Mills (P) Ltd, Biratnagar</td>
</tr>
<tr>
<td>Mr. Rijal Santosh</td>
<td>General Secretary</td>
<td>Swastik Jute Mills (P) Ltd, Biratnagar</td>
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<tr>
<td>Mr. Rijal Shrish</td>
<td>Director</td>
<td>Nepal Jute Industries (P) Ltd</td>
</tr>
<tr>
<td>Mr. Rijal Sushil</td>
<td>Director</td>
<td>Swastik Jute Mills (P) Ltd, Biratnagar</td>
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<tr>
<td>Mr. Sapkota Maharand a</td>
<td>Correspondent</td>
<td>Image Channel T.V.</td>
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<tr>
<td>Mr. Saral Bhikham Chand</td>
<td>Secretary</td>
<td>Morang Byapar Sangh</td>
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<tr>
<td>Mr. Sedai S. N.</td>
<td>Member</td>
<td>Nepal Jute Mills Association</td>
</tr>
<tr>
<td>Mr. Shrestha Krishna  Bahadur</td>
<td>Joint Secretary</td>
<td>Ministry of Agriculture and Cooperatives, Kathmandu</td>
</tr>
<tr>
<td>Mr. Shrestha Chandra Bahadur</td>
<td>Senior Scientist</td>
<td>Nepal Agriculture Research Council, Khumaltar</td>
</tr>
<tr>
<td>Mr. Shrestha Jitendra</td>
<td>Jute Expert</td>
<td>Kathmandu, Nepal</td>
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<tr>
<td>Mr. Shrestha Lalit</td>
<td>Office Chief</td>
<td>Commerce Office</td>
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<tr>
<td>Mr. Shrestha M. B.</td>
<td>Section Chief</td>
<td>Agriculture Development Bank, Biratnagar</td>
</tr>
<tr>
<td>Mr. Shrestha Shambhu Lal</td>
<td>Principal Scientist</td>
<td>Nepal Agriculture Research Council, Khumaltar</td>
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<tr>
<td>Mr. Singh Abdhesh</td>
<td>Plant Quarantine Officer</td>
<td>Plant Quarantine Check post, Biratnagar</td>
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<tr>
<td>Mr. Subedi Sharad</td>
<td>Raj Representative</td>
<td>Gorkhapatra Daily</td>
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<tr>
<td>Mr. Thapa I. S.</td>
<td>Director</td>
<td>Department of Agriculture, Hanhar Bhawan, Lalitpur</td>
</tr>
<tr>
<td>Mr. Tiwari Hari Babu</td>
<td>Senior Agric. Economist</td>
<td>Ministry of Agriculture and Cooperatives, Kathmandu</td>
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<tr>
<td>Mr. Upadhyaya Hari</td>
<td>Krishna Member</td>
<td>National Planning Commission</td>
</tr>
<tr>
<td>Mr. Upadhyaya Range</td>
<td>Lal Production Chief</td>
<td>Baba Jute Mills (P) Ltd, Kathari Morang</td>
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<tr>
<td>Dr. Yadav Newal Kishore</td>
<td>Regional Director</td>
<td>Regional Directorate of Livestock, Biratnagar</td>
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<tr>
<td>Dr. Yadav Y. P.</td>
<td>Senior Veterinary Officer</td>
<td>DLSSO, Morang</td>
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<td>Mr. Yadav Chitta Ranjan</td>
<td>Regional Director</td>
<td>Regional Research Station, Tarahara</td>
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<tr>
<td>Mr. Yadav Pradip Kumar</td>
<td>Regional Manager</td>
<td>National Seed Company, Itahari</td>
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<tr>
<td>Mr. Yadav Sarbjeet</td>
<td>Agronomist</td>
<td>DADO, Sunsari</td>
</tr>
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</table>
# Appendix 3: List of Participants in Technical Session

<table>
<thead>
<tr>
<th>Title</th>
<th>Family Name</th>
<th>First Name</th>
<th>Middle Name</th>
<th>Designation</th>
<th>Address</th>
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<tbody>
<tr>
<td>Dr. Abdulllah A.B.M.</td>
<td></td>
<td>Executive Director</td>
<td>JDPC, Bangladesh</td>
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<tr>
<td>Ms. Anjaya Sabita (Shrestha)</td>
<td></td>
<td>Technical Officer</td>
<td>Outreach Research Division, NARC</td>
<td></td>
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<tr>
<td>Mr. Anay Saroj P.</td>
<td></td>
<td>Senior Statistics Officer</td>
<td>Ministry of Agriculture and Cooperatives</td>
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<tr>
<td>Mr. Basnet Sunil</td>
<td></td>
<td>Farmer</td>
<td>Gauradha-9, Jhapa</td>
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<tr>
<td>Mr. Bhandari Hari</td>
<td></td>
<td>Program Director</td>
<td>Crop Development Directorate, DOA</td>
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<tr>
<td>Mr. Bista Chandra Bahadur</td>
<td></td>
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<tr>
<td>Mr. Gautam Hem Sagar</td>
<td></td>
<td>Senior Agriculture Development Officer</td>
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<tr>
<td>Dr. Ghamire Mohan Chandra</td>
<td></td>
<td>Management Consultant</td>
<td>Biranagar Jute Mills</td>
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<tr>
<td>Mr. Ghamire Gopi Prasad</td>
<td></td>
<td>Industry Officer</td>
<td>Cottage and Small Industry, Morang</td>
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<tr>
<td>Mr. Ghamire Tara Bahadur</td>
<td></td>
<td>Coordinator</td>
<td>Jute Research Program, Itahari</td>
<td></td>
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<tr>
<td>Mr. Golchha Raj Kumar</td>
<td></td>
<td>Director</td>
<td>Arhati Multi Fiber Ltd., Sonapur, Sunsari</td>
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<td>Dr. Guha Roy T. K.</td>
<td></td>
<td>Consultant (Technical)</td>
<td>NCJD, Kolkatta</td>
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<tr>
<td>Mr. Jha Asheshwar</td>
<td></td>
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<td>Mr. Koirala Balram</td>
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<tr>
<td>Mr. Kumar T. Nanda</td>
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<td>Secretary General</td>
<td>UJSG, Dhaka</td>
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<td>Mr. Mehta Chandra Dev</td>
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<tr>
<td>Mr. Mishra Krishna Kumar</td>
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<td>Ms. Pandey Niru Dahal</td>
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<td>Mr. Pareek G. N.</td>
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<tr>
<td>Mr. Pathak D. S.</td>
<td></td>
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<tr>
<td>Mr. Privee Achut</td>
<td></td>
<td>Senior Officer</td>
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<tr>
<td>Mr. Pradhan Gautam Prasad</td>
<td></td>
<td>Agronomist</td>
<td>National Industrial Crop Development Program, DOA</td>
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<tr>
<td>Mr. Rahman Md. Siddiqui</td>
<td></td>
<td>Consultant Operation</td>
<td>UJSG, Dhaka</td>
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<tr>
<td>Mr. Rajbansi Badri Narayan</td>
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<td>Mr. Rajbansi Rajendra Prasad</td>
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<tr>
<td>Mr. Raht Champa Lai</td>
<td></td>
<td>Chairman</td>
<td>Nepal Jute Mills Association, Biranagar</td>
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<td>Mr. Raht Sohan Lai</td>
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<td>Mr. Seetha Manoj</td>
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<td>Finance Executive</td>
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<tr>
<td>Mr. Shaky Shankar Lai</td>
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<td>District Agriculture Development Office, Jhapa</td>
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<tr>
<td>Mr. Sharma Parikshit Raj</td>
<td></td>
<td>Senior Economist</td>
<td>Ministry of Agriculture and Cooperatives</td>
<td>Kerala</td>
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<tr>
<td>Dr. Shrestha Krishna Bahadur</td>
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<td>Mr. Shrestha Chandra Bahadur</td>
<td></td>
<td>Senior Scientist</td>
<td>NARC</td>
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<tr>
<td>Mr. Shrestha K. K.</td>
<td></td>
<td>Managing Director</td>
<td>AIICL, Teku</td>
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<td>Mr. Shrestha Shambu Lai</td>
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<td>Principal Scientist</td>
<td>NARC</td>
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<tr>
<td>Dr. Swar Deep Bahadur</td>
<td></td>
<td>Deputy Director General</td>
<td>Department of Agriculture</td>
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<tr>
<td>Mr. Upadhyay Ranga Lai</td>
<td></td>
<td>Jute Technologist</td>
<td>Baba Jute Mills</td>
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<td>Mr. Yadav C. R.</td>
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