

Prospects of Jute Industry in Nepal

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Abstract

This paper aims at examining prospects of jute industry in Nepal. For this, the paper is dealt with Profiles of Specific Diversified Products with Commercial Potential; Problems of Nepalese Jute Industry Traditional Uses of Jute Products and Their Market Situation in Nepal; Non-Traditional Diversified Products; Difficulties in Evolving New Uses and Marketing Them; New Jute Product Potential; Future Demand for Raw Fibre and Jute Products; Supply of Jute and PP Sacks; Future National and International Approaches in developing and Marketing New Jute Products and the concluding remarks. The ability of jute to compete with synthetic substitutes depends on price competitiveness, and its meeting technical requirements for specific uses. A long side with traditional uses quite recently new and diversified jute products such as geo textiles for erosion control, jute-reinforced plastics, jute laminates, paper pulp and paper, as well as many types of decorative fibers, furnishings, carpets and handicrafts are though accounting for relatively small quantities of fiber at present, seem to offer potential for future development.

The jute industry is pioneer and well-established agro-based industry in Nepal. The history of jute industry reveals that the people of the Indian sub-continent had known jute fiber from ancient times. It is said that the word Pat (Bengali word of jute) was mentioned by MANU some 800 years before the birth of christ (Kerr, 1874). It is, however, evident from indigenous literature and accounts of foreign travellers that for several centuries' jute was an important cottage industry of Bengal and its peripheral area such as Bihar, Assam and Orrisa, and the eastern terai region of Nepal. The jute handloom industry assumed special importance in the 18th century and continued its prosperity right up to the third-quarter of the 19th century when its place was briskly occupied by the rapidly growing power-driven jute mills at Bengal and abroad (Choudhary, 1921).

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In spite of its long history, however, jute as a cheapest natural bast fiber ranks amongst the youngest in the world. Jute was cultivated on a very small scale until the development of the jute mill industry first in Dundee, Scotland then in other parts of the world. Jute started to emerge as a commercially important crop of the sub-continent since the later part of 18th century. It was during that time the East India Company started the research for a possible alternative fiber to be used in the flax machinery of Dundee. In 1793 the first consignment of 100 tons jute fiber was exported to England. The export quantum rose to 364 tons in 1818 (Hossain and Chowdhury, 1988/89). In 1832 it was made possible for the first time in Dundee to spin thread with jute fiber and in the following year (1833) the first jute mill was established there. This ushered in a new era of increased importance for jute in the world market.

Jute is cultivated mainly in Asia and some parts of Africa and Latin America. About 70 percent of world production originates in South Asia particularly in India, Bangladesh, and Nepal (Koirala, 1993). India is so far the largest raw jute producer, jute goods manufacture, and exporter in the world while Nepal's contribution in the world jute market is only a small fraction of India's contribution.

Jute possesses suitable technical qualities. Because of its cheapness, high strength, flexural rigidity, bulk and non-elastic properties it has mainly been used traditionally in ropes and twines for domestic, agricultural and navigational purposes, cloths and sacks and bags as packaging material for the transport and storage of agricultural products, as well as fertilizers, cement and some chemical products and practically been enjoying monopoly in these fields till middle of sixties (Khan, 1987/88). Along side with traditional uses quite recently new and diversified jute products such as geo textiles for erosion control, jute-reinforced plastics, jute laminates, paper pulp and paper, as well as many types of decorative fibers, furnishings, carpets and handicrafts are also being produced in jute producing countries which, though accounting for relatively small quantities of fiber at present, seem to offer potential for future development.

The period of prosperity in the jute industry remained continue to the sixties. Although the world jute consumption had increased rapidly during the decade, the rate of expansion had been widely different from country. The major feature of this period had been rising share of the developing countries in the world jute consumption. While consumption continued to increase more rapidly in developing than in developed countries, in some highly industrialized countries it had also been far from stagnant. In the USA in particular, jute consumption, which had fallen heavily during the war and post-war periods, had grown steadily during the decade. The rapid expansion was accompanied by a considerable change in the pattern of utilization. As a result of technological changes such as the development of bulk handling and increasing competition from paper, synthetics and other materials, consumption in the traditional end-uses had shown little of no increase, or even declined (FAO, 1964). Meanwhile, consumption in new uses such as backing for tufted carpets had risen very sharply.

The decade of the seventies witnessed sharp changes in packaging technology and consumption pattern of traditional end-uses which led to the development of synthetic packaging materials as close substitute to jute manufactures. Moreover, some other countries than Bangladesh such as China and Thailand emerged as competitors in the world jute market

during the decade. The fall in the world demand for traditional end-uses of jute due to growing uses of synthetic materials on the one hand, and the emergence of new and strong competitors in the world market, on the other presented serious threat to the jute industry. In addition, raw jute scarcities, labour unrest and problem of power shortage had a depressing effect on the jute industry during the decade. The decade did not remain favourable for the Nepalese jute industry either. However, a massive modernization programme was launched in the Nepalese jute mills with a view to improving productivity and reducing production costs at the financial assistance of ADB.

The fortunes of the world jute industry were at their lowest levels in the eighties. The Nepalese jute industry was not exception. Nepal's production of raw jute and jute manufacturers alarmingly declined from 61,102 tones in 1985/86 to 15,611 tones in 1989/90 respectively (Upadhyay, 1990). The performance of Nepalese jute mills, which recorded heavy losses through out the whole decade. Likewise, India's actual export of jute manufactures recorded 223.5 thousand tones in 1988/89, the lowest ever since 1961/62 (JMDC). The scarcity of raw jute, labour unrest, shortage of power supply and vicissitudes of demands were mainly responsible for the poor show of the jute industry.

No doubt, the golden days of once called golden fiber loses its sheen. For the last two and half decades the trend of the jute industry did not evince so significant improvement which could seriously after the synthetic packaging materials and bulk handling. Such a gloomy trend has caused serious concern towards this traditional agro-based industry of jute producing countries such as Nepal, India and Bangladesh because of its dominant bearing on their respective economics. However, there is a few rays of hope for the world jute industry as there is a growing concern about plastic pollution in many developed countries which has again focused great attention on the use of biodegradable jute fiber packaging materials instead of non-biodegradable plastic materials (Laskar, 1991). Rising concern over ecology and impact on environment of the use of disposal of synthetic materials has generated a new interest in jute. Over the last few years, significant developments have taken place in evolving new uses of jute in specific areas. Such items include geo textiles for erosion control, various types of jute reinforced plastics, jute laminates, paper and paper pulp, automobile panels made non-woven fabrics, as well as many types of decorative fabrics, furnishing, carpets, handicrafts, etc., if things go favourably in the years to come the jute industry may get a new lease of life.

The ability of jute to compete with synthetic substitutes depends on price competitiveness and its meeting technical requirements for specific uses. Only developing new products or adapting to new uses can offset loss of jute market to such technological innovations as bulk handling in transport and storage of commodities and materials. In recent years the use of synthetic fiber products, because of their preferential price over jute goods dominated global market. This dominance of synthetic goods has had adverse affects on jute market and resulted lower price, day by day. But, jute is one of the major economic cash crops of jute producing and exporting countries like India, Bangladesh and Nepal. We will have to save it, and find out ways and means to diversity its products to make it economically viable, competitive and commercially attractive. To save the jute from adverse competition with synthetic products efforts are to be made sincerely. The change over has to be effective on two plans: one,

improved varieties of traditional products and, two, introduction of new, diversified products. By now everyone connected with jute industry knows that to survive, there is a need to enter new markets and find new customers, and the best part is that the scope for such new ventures is limitless (Sarkar, 1994).

Jute industry circles agree that the traditional products could fight back if only they become brighter and lighter. In this context the offering of light weight, lower-cost products of acceptable technical performance has been effective in keeping jute a major factor in secondary carpet backing and in light weight sacks.

The products suggest that possible areas for diversification need to be explored. As a result of research efforts, a number of diversified products have been developed but are yet to be produced commercially. Other which can be produced economically, need to be promoted and marketed. While the volume of non-traditional products is at present basically supplemental, there may be considerable future potential for some of the diversified products. The environmental dimension has been acknowledged as one of the key issues of global interest. With its environment-friendly attributes, jute may aspire to a larger market share in many end-uses such as geo textile, soft luggage and carpets. The significant employment generation and high value return from the production of various diversified products could also be an important consideration to encourage expanded production and use of non-traditional products.

The FAO has also prepared a long list of diversified jute products. The main heads are household textiles (jute/ jute blended yarns, upholstery, sheeting, curtains, carpets, blankets and jute wall coverings/dividers), jute based apparels (jeans, safari or summer suit etc), jute based industrial textiles (soft luggage fabrics, tarpaulins and awnings, coated fabrics, geotextiles), jute reinforced plastics (jute stick particle boards and decorative laminates), fire retardant jute (brattice cloth and barrier fabric) jute fabric/yarn based handicrafts (shopping bags, jute matting and floor tiles, dolls and jute based painted/printed wall coverings and room dividers on frame and jute knits), and jute /jute blended non woven (carpet underlay, insulations for heat, air conditioning, filter fabrics, wiper cloth and dust bags). A number of diversified jute products have already been developed or are in the process of development but for which intensified marketing efforts are required.

Profiles of Specific Diversified Products with Commercial Potential

Geo-jute is biodegradable which adds fiber and fertility to the soil. It provides soil surface protection against run off erosion, absorbs and stores water-creating microclimate conducive to germination and reduces erosive effects of over flow and helps sedimentation in the netting.

Jute Geo-textiles

Geo-Jute is used to stop land erosion in roads and embankments and prevent other soil erosion. The idea of using jute cloth, as a method of controlling erosion was first suggested and tried by soil conservationists in the USA some years ago. The material chosen was the readily available jute mesh used for wrapping cotton bales. This has now become known as

Geo-jute. Jute cloth designed for woolpacks and fine mesh jute are also being used as geo textile.

Jute geo textiles are considered to have a number of properties, which, if properly utilized, can give significant advantages over synthetic. These include very good water absorbency, good drapability, low unit cost, and environmental compatibility, including biodegradability. Thus in view of the above property-advantages it has been possible to successfully introduce geo-jute in flood protection embankments and stabilization of the topsoil of newly constructed roads and high ways.

However, the term "Geo Textile" is sometimes restricted to civil engineering applications of textiles like the use of a fabric to form a barrier/reinforcing structure when constructing access roads on building sites. The term "Agro Textiles" is also used when the primary function is erosion control.

Thus the use of jute mesh as geo textile and Geo-engineering material is considered to be one of the diversified end uses of jute offering the greatest potential. Geo jute an open mesh weave weighing only 500 g/m² which is laid to protect ground after soiling and seeding, provides protection from rain and surface water runoff absorbing up to five times its own weight of water which is retained within the structure by the formation of a series of 'micro dams.' (Nepal Jute, 1986/87). Demand for geo textiles is increasing very fast, at about 20 percent per annum in the last few years. With the increasing tendency of re-greening areas, demand for geo textiles is expected to increase further. In Europe alone about 50 millions sq. meters of land has been classified as having a moderate to severe erosion problem and jute geo textiles has potential for entering this market. The present market of geo textiles of about 700 millions sq. meters is dominated almost exclusively by synthetics (FAO, 1991). No exact figures are available, but the slop erosion control product market is probably running at about 20 millions sq. meters per annum. In terms of jute fabric at 500 g/m² this would represent some 10,000 tons per annum. This market is expected to expand rapidly, particularly in Europe and Australia where there is increasing awareness and concern over the problem of soil erosion. One estimate for Europe suggests that the market for jute nets for erosion control is rising to about 6 millions sq. meters annually by 1992 (FAO, 1991). Although, problems such as the high cost of transportation and lack of promotional measures are hindering the development and marketing of Geo-Jute. Nevertheless realization of the new potentials of the industry has led to fresh investments in setting up specialized mills.

All Jute Pile Carpets and Mats

The amount of jute used per unit of area is quite high in these items. An expansion of its use would result in a substantial rise in the volume of jute consumption if the market for these products could be developed properly. In this context Bangladesh has made good progress in producing and selling jute carpets both in local and export markets. The government of Bangladesh has established 6 face-to-face carpet manufacturing units with the production capacity of around 3.3 millions sq. yards. However, the country has a limited domestic market and consequently future production increases would be predominantly for export markets. To

increase marketability of jute carpets, efforts are being made to improve its fiber shedding, resiliency and wash ability. Although exports to some markets increased considerably in the past, over all demand has remained stable in recent years due to various problems associated with quality of the products and marketing. Production of all jute pile carpets in Bangladesh amounted to about 700 tons in 1988/89 against 600 tons in 1980/81.

India has recently showed an interest in producing jute carpets and mats on a large scale. One of the mills has installed Belgian looms of latest technology and started manufacturing 100 percent jute carpets. Another jute mill is shortly going in to commercial production of jute carpets with blended yarn for domestic as well as export market. The blended carpets are price competitive. A number of jute mills have stepped up production of jute mats and matting in attractive designs and colours, which are increasingly becoming popular, both in local and export markets.

Pulps and Paper

Low-grade jute, jute cuttings and green jute plant are now producing paper and pulp. Techno-economic studies have proven the usefulness of jute and Kenaf as a raw material for making pulp and paper. These are renewable source of raw materials and can be utilized effectively. Especially Kenaf fiber has made remarkable headway in the news print market. The quality of paper is evaluated on the content of cellulose fiber. Research in Kenaf fiber going on for more than 40 years reveals the fact that Kenaf has the highest pulping potential among competing fibers. The Phoenix Pulp and Paper Company has been producing paper pulp from Kenaf whole plant at Khonkaen, Thailand, for some years. The "Institute de Recherches du coton et des Textiles Exotiques" (IRCT) of France is also manufacturing paper pulp from Kenaf. In Bangladesh Sylhet Paper and Pulp Factory already started to produce pulp in commercial basis. Recently government decided to produce paper and pulp in all the four mills of the country. Meanwhile International Finance Corporation (IFC) and Common Wealth Development Corporation (CDC) proposed to Bangladesh Chemical Industries Corporation to set up paper mill, security paper mills and Board Mills based on raw jute. China also expressed similar intension to set up jute based joint venture paper and pulp mill Bangladesh (Abdullah) The North Bengal Paper Mills of BCIC at paksey has started production of paper with the green jute plants for the second time.

Likewise three paper mills based on Kenaf are expected to be set up in the USA at Texas, Louisiana and Mississippi. The one at Texas was, in fact, to start working in 1990 and the expectation was that after Kenaf-based paper mills are set up in the United States, rapid progress might be made in the establishment of similar mills elsewhere. Kenaf International in the United States has finalized a 400-acre site for a mill near Weslaco in Southern Texas.

At the moment, raw jute fiber and jute waste consumption by the Indian paper industry is around 18,000 tons, constituting about 1.3 per cent of average annual raw jute production of 1.3 millions tons in the country. In order to provide incentive for the use of jute in manufacturing paper, the Indian Government allowed some fiscal concessions in the Union Budget of 1989 by way of exemption of excise duty to those varieties of paper and paper boards which contain

not less than 75 percent of pulp made from raw jute and Kenaf. From the point of the farmers raw jute consumption by the paper mills will help them in getting remunerative prices. Paper industry can economically support the farmer and the jute industry by utilizing low grade jute and kenaf, bottom cuttings, fescua and jute mill waste (entangled yarn waste and gunny waste). Superior quality paper can be produced by the paper industry by utilizing low quality jute kenaf there by preserving higher-grade jute kenaf for the requirement of the traditional jute industry. Evolving suitable technology for the commercial manufacturing of paper and pulp from Kenaf in small and medium sized enterprises has been identified as an important project idea by the member countries of the IJO council.

Jute Wall Coverings

The product is considered as a fashion product, for which the demand pattern can change frequently and rapidly. Jute wall coverings had a considerable market in Western Europe but because of technical problems including colour fastness, alternative materials displaced the product. Jute was used for wall coverings, for a market of about 3 millions meters in the seventies. But in 1988, the market slowed down to 400,000 meters only. Reports suggest that the problem lies with colourfastness and the presence of lignin, which has led to reduction in demand. These problems need to be solved properly for the successful development of this end-use. At the same time, yarn export is important as sophisticated users in Europe are producers of wall covering, and sales of specialized yarns to these small sophisticated weavers depend entirely on quality.

The European market for textile wall covering including jute is mainly concentrated in France, Sweden, the UK, Germany and Italy. Other countries with limited consumption are Belgium, Denmark, and Norway. Ireland is also a significant market and imports mainly from the United Kingdom. Nearly 130 million sq. meters of textile wall covering were consumed in the above mentioned European markets during 1979-1981 (FAO, 1991).

Jute Decorative

There is considerable demand in India and Bangladesh for various types of decorative items such as upholstery, curtain materials, blankets, blended jute fabrics and jute felt, but to meet that demand the production base needs to be strengthened and quality improved. Though Bangladesh and India have initiated measures to promote jute decorative. The production and marketing of decorative have a special significance for the traditional handloom industry of India which employs 10 million weavers and produces around 3500 millions meters of cloth, out of total cloth production of 15000 millions metres for the entire economy (Saptharishi, 1990). The program of utilization of jute yarn for production of 100 percent jute fabrics of blended fabrics has been undertaken at various handloom centres and in order to achieve a successful and broad-based program, it is necessary to ensure continuous availability of yarn, arrange proper training, identify product lines for upholstery, bed linen, cotton material and organize processing and marketing so that the resultant products may be priced at competitive

levels.

Jute Laminates

The area of semi-rigid jute laminates and rigid laminates has a special appeal in view of the environmental consciousness and the desire for ecological balance the world over. Its applicability on woven jute fabrics for manufacturing tea chests, apple chests and other fruit packaging is being tried with a measure of success.

The Indian Jute Industries Research Association has established the feasibility of treating jute hessian cloth of different layers with resin and making out of it flexible packaging boxes for different requirements, like the packaging of fruit, tea, textile garments and spices. The field trials in various provinces of India have led to encouraging findings and considerable interest has been shown in this application. Around 20000 jute boxes were used for packing apples in India in 1989. The economic implications are being worked out and the product adaptation as a result of field trials is underway.

Jute Handicrafts

With the gradual tightening on the supply of traditional famous raw materials like wood and ivory (on account of environmental and wild life preservation factors) jute is emerging as an attractive raw material for production of a number of utility oriented handicrafts. Jute fiber, jute yarn, and jute fabric are raw materials that can be properly used by the crafts men for manufacture of a number of handicraft items.

In India, special assistance is being provided by the government under the Jute Special Development Fund for furniture and related items made of jute, floor coverings and furnishings, soft luggage, shoes and slippers, shopping bags, purses, office and table accessories, jute based garments and fashion accessories. A number of designers are being assisted in the development of product design, prototypes for commercial reproduction and marketing. Success in this field will require regular supply of raw materials, and appropriate training programs. Marketing arrangements are also of critical importance. The jute handicraft sector is so diverse that no detailed statistics covering their production are available.

Jute handicrafts production in Bangladesh is widely promoted in the small cottage industry sector. The products include handmade jute carpets, jute mats, jute twine and rope, wall covering, printed jute fabrics, shopping bags and other jute handicrafts. Price wise, jute handicrafts from Bangladesh are quite competitive in the export market.

Specialized Jute yarns

Blended yarns have their application in diversified field like wall coverings, upholstery materials and in a number of handicraft items. These yarns being manufactured by organized mills in India. The products are also being used by small-scale sectors for manufacture of

shopping bags, soft luggage, apparels, made-up articles etc. The fabric is also treated in the small scale sector for production of jute decorative laminates which are used for table tops, room partition, room panelling and soon. These laminates could be nailed, sawed etc and are excellent value for money.

With support from UNIDO, a project was initiated on the production of blended yarns for carpet pile. Sid law yarns worked in collaboration with Kidderminster Technical College on this project, which reportedly has been terminated. However, another initiative has been reported in which the feasibility of using 15 percent Polypropylene bi-component fibre and 85 percent jute will be investigated. The International Jute organization (IJO) and the British Technology Development Group (BTDG) are the co-operating organizations for this project (Jarman, 1990).

Soft Luggage

Jute mills in India and Bangladesh have brought out excellent bags, which are being marketed domestically and exported. A market survey carried out by the Common Wealth Fund for Technical Co-operation (CFTC) identified soft luggage product as one of the most promotional, which needed promotional support. The main potential for jute lies in the high fashion handbags and similar products and also for jute shopping bags, with some opportunity also for soft travel luggage. According to one estimate, the normal market potential for shopping bags is expected to exceed two millions units a year, while for other soft luggage, the market is over one million units in France alone. It is reported that the Soviet Union has shown interest in this product. Jute has ideal aesthetics, strength and low cost for use in blends with polypropylene for use in soft luggage. Many leading manufactures in India and the USA are getting attracted towards jute based soft luggage and the market could be enlarged.

Jute Blankets & Garments

The fiber of jute can be used along with cotton, wool and synthetics for manufacturing fabrics which are suitable for blankets and apparel such as suiting materials, shirting, wrappers, jeans, cardigans and jackets. Some research institutes have successfully developed products from these fabrics and most of the need commercialisation as well as promotion in the market. Bangladesh produced Novocel wool from jute. The Novocel wool blanket is very popular in the domestic market. Polythene made nursery pot has been proved harmful, as it is not biodegradable. At the time of plantation of the sapling polythene nursery bags are needed to be removed but jute nursery pot is biodegradable and does not need to be removed.

Panels for Automobiles

Panels for automobiles made of jute non-woven can be another significant outlet for jute. Some companies in Europe and United States have indicated interest in this possibility. Experiments with flax are also being undertaken at important research institutes. If important

car manufactures accept jute-based panels, there could be a substantial rise in demand for the fiber.

Problems of Nepalese Jute Industry

The jute industry of Nepal occupies a place of pride in national economy not only because it substantially contributes to Gross Domestic Product and convertible foreign exchange earnings, but also provides direct and indirect employment opportunities for thousands of people in the fields and in the factories. A crisis in this industry has, therefore, serious repercussions on economy in general.

The industry of such an importance is, however, going through vicissitudes of fortune owing to such reasons as fall in the global demand for and rise in the prices of raw jute and jute products, emergence of synthetic packaging materials as their close substitute, lack of innovations, increasing competition among jute growing countries etc. Such situations have seriously affected both the fields and the factories, there by the economy as a whole. Gradually farmers are losing interest in jute cultivation. Land coverage by jute cultivation has been condensed to 11 thousand hectares. The over all annual production has plunged to almost 15 thousand tons (table 4.16). According to Jute Mills Association of Nepal the cultivation of jute as a traditional cash crop has gone down to 98 percent and the District Agriculture Development Office has even left to keep production record records (Kantipur, 1999). Volume of export of raw jute and jute products has declined so much that once booming business has given a nosedive. The export of jute till the beginning of the seventies used to share eight in every ten dollars worth of foreign exchange earnings. Since the 90s the product has even failed to secure place in the list of major exportable items to the overseas countries. Though the situation is undoubtedly due to the competition with some other exporting countries deterioration in price globally and the competition with the substitutes. The quality of Nepalese jute products is inferior to those in India and Bangladesh if we consider the required quality for export in the global market. Hence, in recent years the industry depends excessively on Indian trade channels for it exports. This is not because of the better quality of Nepalese product but due to the price factor. Variation of taxes in different states of India has created a market for Nepalese jute goods, which becomes slightly cheaper than their own products. In the industry prevailing practices of purchase of raw jute on credit are quite unsatisfactory. The burden arising out of accumulated losses and the interest on borrowed capital are proving to be excessively high and detrimental to its viability. Severe fluctuation in prices of raw jute not only in the country, but all other producing countries has caused many difficulties in the matter of export of manufactured goods. Continuous trend of high price has led to the uses of substitutes. The industry is facing the problem in the form of middleman as a result of which the factory has to pay higher prices for the raw jute. Speculation trend jute trade has greatly hampered the jute industry.

Liberal issuing of export licenses of raw jute and comparatively high margin of profit in raw jute export have led to attempts being made by the mushroom exporters to export every bit of good quality fiber and to sell the sub standard goods to the local jute mills as standard

goods (Pandey, 1968). This trend has greatly affected the quality of finished goods; the result is that there are no overseas buyers.

Because of an old and obsolete machines in the industry incurred high maintenance expenses, high degree of wastage, high operation charge all add up to low production, resulting in high cost of production. Due to insufficient working capital the industry's production efficiency has greatly hampered. The industry cannot pay cash for raw jute and store it in required quantities at the harvest season. As a result purchasing raw jute on credit leads to higher prices. Problem of raw jute and other auxiliary raw materials like jute batching oil, spare parts, etc along with government's custom VAT and Local Development Tax imposition have all these directly affected the cost of production. In nutshell, technological degradation, managerial weaknesses and the poor financial status are the leading factors that ail the jute industry of Nepal. The noted sector has been not only ailing, but has virtually collapsed.

Traditional Uses of Jute Products of Their Market Situation in Nepal

In Nepal the major production belongs to the traditional items like jute hessian, twine, yarn and carpet backing cloth. As has been indicated above, jute has so far been used as packaging requirements of the sectors like food grains, sugar, cement, fertilizer, cotton packaging, salt, vegetables, postal canvas etc. In the forms of hessian and sacking and has been used as material for making ropes of different kinds. Later on some quantities were exported to India and thus it gained a commercial potentiality. It attracted a lot of farmers, as it became easily saleable cash crop. Further more, after the First World War, there was a tremendous growth in demand for jute goods in the international market, which resulted the establishment of jute industry in Nepal. However, at present jute cultivation is no more remunerative in relation to its price. The increase in the price of competitive crops like paddy and maize has affected jute cultivation. Compared to the competing crops, the coverage under jute is very low. The low price of jute coupled with decrease in global demand for jute and jute and jute goods has worsened the jute scenario.

The market prospect for the traditional goods is far from encouraging and there is general trend of falling price in the world market due to stiff competition from synthetic substitutes and also due to serious price competition among the jute goods exporting countries. As far as hessian and sacking are concerned, the demand for heavier fabric is shrinking over the years and the trend seems in favor of lighter fabrics. As for carpet backing cloth, even for the secondary carpet backing the market is being alarmingly lost. The demand for hessian and sacking in the global market depends mainly on the global food and cash crop harvest. "FAO Jute Quarterly Statistics" reveals that although the world demand for packaging materials has considerably gone up jute failed to benefit from the expanded demand and even its original share has depleted. No doubt coupled with quality and price comparable to synthetics.

Jute/Kenaf product

Raw jute is the main raw material for jute mills. In Nepal, Volume of kenaf produced is quite insignificant. The produce is totally consumed by the mills. Jute mills use kenaf mixed raw jute. The products of jute mills are only hessian, sacking and twine. Recently carpet backing cloth and fine yarns are also being produced. Besides these products, jute mills have not gone to the diversification program as they have their own constraints.

Jute Products

Jute products are categorized into three groups -

- (i) Mill Products - hessian, sacking, yarn, twine and CBC
- (ii) Domestic or Cottage Industry Products - mat, doormat, decorative like wall hanging, bags etc.
- (iii) Home Product - mat, rope of different kinds.

Production of Jute Goods

The existing jute mills are mainly producing three basic items like (I) Hessian 40"x26.5" (ii) Sacking (iii) A' Twill bags 44"x26.5"; B' T will bags 44" x 26.5" and heavy sack bags 43" x 29" and twine up to 4 ply. The recently established Arihant Multi Fibers Ltd. Produces special fine yarns and carpet backing as new product diversification.

Jute goods production has fluctuated widely during the past decades. Sacking is by far the most important item produced although volumes have declined in recent years. A big volume of sacking production has been exported to India in the recent years. There is a demand on increasing scale for sacking in the domestic market on account of increase in agro and industrial products. Though most of the sacking production recorded by mills as sold to domestic merchants cannot be accounted for by major end users and the researcher assumes at least part of this portion is exported by the merchants. It is sufficient to note that even at present low level of jute goods production by the mills, output considerably exceeds domestic requirements. The production of jute goods as shown in table 1 reveals that the products have fluctuated considerable from year to year largely depending upon the domestic demand, external market and export outlook. The main output of the industry is sacking which goes partly to meet domestic demand and partly for export. Between 1970/71 and 1991/92, production of hessian dropped from 5658 to 3608. The range of hessian varied from 7406mt. to 1841mt. between these periods. The most substantial decrease in hessian was in 1989/90 in which 61% production of hessian decreased over previous year. Most of the production was sacking some 8176mt. in 1991. Sacking has occupied the highest position in the share of total jute goods production followed by hessian and twine. Jute industry produces maximum percentage of sacking due to increase in domestic demand of packaging materials of industries and agriculture products. Between the years 1970/71 and 1991/92 maximum sacking production of about 14764mt. was achieved in 1982/83 but subsequently the production has been declining to lower levels with some ups and downs in between. The most substantial decrease in sacking production was in 1989/90 decreased by 34.7per cent over previous year. Decrease in sacking

production has tremendously affected the over all level of production. As demand for sacking is decreasing with the availability of cheap substitutes, its production has to decrease. Production of twines fluctuated widely in recent years, but was 5855 tons in 1991/92. The maximum output of 21323mt. was achieved in 1983/84; the production has since been declining. It had declined to the lowest production 541mt.in 1989 due to trade difficulties. Part of the reason of over all declining trend is due to sluggish international demand but in part, the downward trend has been accentuated by the financial technological and managerial problems of the industry based on the figures presented in Table 1. The average annual jute production has increasing trend especially after eighties. In the 1970's it was 14502mt. while those figures for the 1980's and first two years of the 1990's were 17223mt. and 16227mt. respectively. The increased level of production may be associated with the increased demand for jute production both in internal and external (India jute market) jute market.

Table 1. Production of Jute Goods in Nepal

Qty in mt.

F/Y	Hessian	Sacking	Twine	Total
1970/71	5685	7291	695	13644
1971/72	5308	6981	641	12930
1972/73	5467	7161	629	13320
1973/74	4991	7266	632	12888
1974/75	4786	6579	514	11879
1975/76	6344	8512	802	15658
1976/77	7406	8491	608	16505
1977/78	7313	8105	340	15758
1978/79	7389	8836	368	16593
1979/80	6950	8418	484	15852
1980/81	6701	8802	402	15905
1981/82	4825	10223	454	15502
1982/83	3060	14764	1795	19619
1983/84	4909	13287	3127	21323
1984/85	6155	10250	3621	20026
1985/86	4878	8900	3398	17176
1986/87	5586	10019	3435	19040
1987/88	4839	8917	3532	17288
1988/89	4719	9711	3386	17816
1989/90	1841	6340	360	8541
1990/91	3001	6834	4981	14816
1991/92	3608	8176	5855	17639

Linear growth rate = +1.03 per cent per annum.

Compound growth rate = +0.92 per cent per annum.

Source: JDTC & DOI.

In recent years, rising concern over ecology and impact on environment of the use and disposal of synthetic materials and the price of synthetic production having pushed up by oil crisis in the world have increased the demand for jute products. In conclusion, the decline in production of jute goods is not because of any shortage of raw jute in the country. Nor it is because of the rising prices of raw material, as raw jute itself is still exported. Rather it may be traced to inefficient management and technological backwardness in the industries. Since the increased quality consciousness and the growing competition with synthetic products are driving slowly back the demand for Nepalese jute in the international market. A part, the entry of china into export business of jute and the introduction of carpet backing of Burma with cheap price even less compared with the price offered by India and Bangladesh. Thus to maintain the export of jute and jute products, it is necessary for improving the quality of raw jute and jute products by up bringing of grade and standard. To fulfill these objectives, HMG/N has set-up the Jute Research Centre (JRC) at Itahari of Sunsari district to commence research activities. HMG has carried out various jute development program like improved jute seed multiplication programs, retting pond development programme, package programme and small jute farmers programme and soon.

The long-term growth trend has showed an increasing trend, as the growth rate has been found +1.03 percent per annum and compound growth rate has been found +0.92 percent per annum.

It is seen that the yearly output of jute production is more than the long term growth trend particularly in the years 1975/76, 1976/77, 1977/78, 1978/79, 1979/80, 1980/81, 1982/83, 1983/84, 1984/85, 1985/86, 1986/87, and 1988/89 while it lies below the growth line in the rest years. In the year 1989/90, the yearly output is found in its bottom level and it reached in its peak level in the year 1983/84.

The low level of production of jute goods in 1989/90 is mainly due to Indo-Nepal transit trading difficulty. Generally low production of jute products is due to the declining demand of Nepalese jute goods because of their poor quality. At the same time the operating inefficiency of the jute mills is responsible for the decline in production. So in order to improve the production domestic market should be developed. To achieves product diversification and for better quality product, the quality of jute fiber should be improved and modernizing procedure of the existing jute mills should be carried out in future.

Domestic Product-Jute Mat

Jute products other than the Hessian, Sacking and Twine, are home made jute mats. The products are used as sitting and flooring material, base materials to dry grains in the sunlight, cot cover and as a bed holder. Women belonging from Rajbansi and Tajpuria communities are mostly engaged in weaving such mats. The communities are in a far eastern terai region where jute is intensively grown. This product has somewhat increasing markets mainly in rural areas. Biratnagar Jute Mills had also produced 3mt. and 2mt. of jute mats in 1988/89 and 1989/90 and has since then stopped.

Total estimated production, consumption and sales figures are shown in Table 2.

Table 2. Production of Jute Mat

Number of villages Engaged in Mat Production	Yearly Production (in No.)	Yearly self-consumption (in No.)	Left over for sales (in No.)
59	1,63,445	29704	1,33,741

Source: Second Survey of Jute Mat Production conducted by JDTC in 1988.

Consumption of Jute Products

Domestic consumption of jute products has been stagnant in recent years, and has actually increased significantly for some products such as sacking (table 3). Between 1970/71 and 1991/92, domestic use of hessian rose up from 51 to 700 tons. The domestic demand of sacking fluctuated widely in recent years. It rose from 762 to 5636 metric tons between 1970/71 to 1991/92. Consumption of twines between 1970/71 and 1991/92 increased from 125 to 929 tons. Though major volume of hessian, sacking and twine are exported mainly to India, most of the domestic demand is for sacking. A very small quality of twine is consumed in domestic market nearly 80 per cent of the total production is exported to India. India has become the dominant market for Nepal jute products. Partly this reflects changing exchange rates, it also reflects the deteriorating conditions in overseas markets.

No doubt, market for traditional product has remained stagnant in the domestic market in the recent years. Establishment of new cement and sugar industries may enhance the domestic consumption of sacking some 5636 metric tons in 1991/92. High cost of production, competition with substitute have caused substantial decline in its export to overseas. Only locally made jute mat has a significant market, which shows an increasing trend. The market for jute mat is expanded as it is being sold in hilly and some other areas other than the traditional localized market in the eastern terai region. A survey was conducted by Jute Development Trading Corporation (JDTC) in 1988 on the production, market, and market promotion of jute mat (Table 2) from the survey it was found that jute mat has real demand in certain segments. But lack of financial assistance, improved technology, and proper agency for market promotion and organized market, and its growth is not that much as it should have been. In real cost basis, jute mat production is not profitable as return is less than the cost involved. It is being a home job; the weaving women do not calculate their labour cost as they make it in their leisure time. So, going for mass production required cost reduction technique and also product improvement.

Table 3. Consumption of Jute Products in Nepal

FY	Hessian	Sacking	Twine	Total
1977/78	125	4506	231	4862
1978/79	199	3425	217	3841
1979/80	122	2725	255	3102
1980/81	177	4193	242	4612
1981/82	223	3825	038	4086
1982/83	252	3738	135	4125
1983/84	298	3504	146	3948
1984/85	250	1774	199	2223
1985/86	349	5326	330	6005
1986/87	386	4702	280	5368
1987/88	431	5240	312	5983
1988/89	467	4129	383	5979
1989/90	513	6724	432	7669
1990/91	531	3740	288	4559
1991/92	700	5636	929	7265

Linear growth rate = + 4.34.

Compound growth rate = +2.63.

Source: JDTC/N.

According to Table 3, though the jute products consumption exposes the ups and down period after period but it shows an increasing trend. Between the years 1970/71 and 1991/92 jute products consumption is found in its peak level in 1989/90 while it is found bottom level 1970/71. In this year the consumption of jute products was only 938mt. while it was 7669mt in 1989/90 increased by 71.7%. The consumption figure rose up to 4862mt in 1977/78 increased by 41.8 percent as compared to 1970/71. The consumption declined to 3841mt. in 1978/79, which showed 21 percent decrease compared with the previous year. The declining trend continued in 1979/80 by 19 percent decrease over previous year. In 1980/81 consumption rose to 4612mt increased by 48 percent in comparison to the previous year and again slowed down to 4086mt. in 1981/82 decreased by 11 per cent over previous year. The consumption slightly improved in 1982/83 by 0.9 percent increase with compared to the previous year and again it declined to 2223mt in 1984/85 decreased by 46 percent as compared to 1982/83. The figure drastically came up to 6005mt in 1985/86 increased by 170 percent over previous year and again came down to 5368mt. in 1986/87 decreased by 10 percent over the year. In 1987/88 the consumption of jute products raised to 5983mt. increased by 11 percent over previous year, which slightly decreased in 1988/89 and rose up to a record figure of 7669mt. in 1989/90 and drastically slowed down to 4559mt. in 1990/91 decreased by 40 percent in comparison to previous year. Though the situation revived in 1991/92 increased by 59 percent.

There is long-term trend of jute goods consumption, which shows an increasing trend at the rate of 4.34 percent per annum. The yearly consumption of jute products is less than the

year 1970/71, the yearly consumption is found in its bottom level and it reached in its peak level in the year 1989/90. The compound growth rate of consumption of jute products is found to be +2.63 during the period 1977/78 to 1991/92.

Indicative Production Targets

The manufacturing industry would be to optimise the production potential from the existing capacity rather than to add to it. This approach is indicated on the basis of demand studies, which do not show long-term prospects for the growth of jute industry in Nepal. New investments for creating fresh capacity would not, therefore, be justified.

In the strategic consideration of the future of the industry, it is desirable to achieve option output from existing capacity. In this view, production can be expected to be gradually stepped up with the modernization of the existing jute mills to the optional level of 14,000 metric ton in 1994/95 and 20,000 metric ton by 1999/2000. (Table 4).

Table 4. Indicative Production Targets for Jute Goods

	Metric Ton
1989/90 (Actual)	8,540
1994/95 (Proposed)	14,000
1999/2000 (Proposed)	20,000

Source: Basis of calculations.

Non-traditional Diversified Products

In Nepal considerable research has not been carried out to find newer and diversified uses of jute. Not any significant non-traditional products have yet been developed. Some items were developed in a scattered way without going through the proper assessment. It is believed that jute materials are not remunerative considering the involvement of cost in the making of such product. Market research is necessary to make any definite conclusion on this matter. But to survive in the global market, Nepal should improve in quality and quantity of jute by following improved agronomic practices in one side and the other to compete with synthetic products the efficiency of the existing jute manufacturing units should be improved and product diversification must be achieved.

Pulp and Paper

Techno-economic studies have proven the usefulness of jute as a raw material for making pulp and paper. Through using jute or jute materials for the making of pulp, has not been commercially launched in Nepal. Existing paper industries do not have proper machinery and

technology to use jute for the making of paper. One of the paper industries namely Everest Paper Mills, Janakpur procures low-grade jute old-used hessian, sacking, caddies and thread waste (as one of the raw materials to be mixed with other main raw materials) totalling about 1,600mt. per year from jute industries of Nepal for paper pulp manufacture. It is observed that there is a great scope for making paper pulp using jute or jute materials. Some cottage industries engaged in the making of local-type paper known as Nepali Paper use jute as the raw material. But they find using jute as uneconomical compared to raw materials.

Geo-Jute

Recent case study on installed jute mesh fabric/ geo-jute system confirms that geo-jute is very effective in containing soil erosion, strengthening embankments of canals and constructing roads and highways. In Nepal one of the jute mills has tried to manufacture geo-textile on trial basis with the existing machines. But the product wasn't according to the required specification. For the production of geo-textiles as per specification some modification is required in machinery of jute mill but due to great financial crisis, the mill is not in a position to produce geo-textile in the near future. Again, the domestic market of such product is not assessed.

Decoratives

In Nepal there is not much organized production of decorative items. Some individual entrepreneurs started producing items like wall hanging, shopping bags and other decorative in small quantities but could not continue the production, as there is no market or demand for such products in commercial scale. A proper market promotion is needed to promote such products. And, of course, financial assistance should be provided to the producer in the initial stage.

Carpet Backing and Fine Yarns

The recently established Arihant Multi Fibers Ltd. Produces carpet backing and jute fine yarns. Fine Yarns, which is used for carpet backing, will get good export market it is assumed. Manufacturing of fine yarns process is broadly the same as that of hessian and sacking manufacturing process but with finer controls and details. Fine yarn can be used in making coarse jute carpets, jute shopping bags, wall hanging materials, jute carpet pile, binding materials, packaging etc. But the specific use of fine yarn is for decorative jute fabrics, insulation materials in electric cables, carpet yarn either in the form of 100per cent jute based carpets and cardage as in the form of fine twine and rope making. As regards to its use in the manufacture of floor covering, jute carpet backing fabrics serves either as a medium into which the tufted pile yarns are stitched or as a reinforcing layer by laminating it to the back of woven or tufted pile floor coverings. So if the jute mills can make special fine yarns, the demand for making jute carpet backing is tremendous.

Difficulties in Evolving New Uses and Marketing Them

In developing new products of jute and kenaf lack of financial resources and technical know-how are the crucial difficulties. There is no agency, which can provide the desired technological know-how to the entrepreneurs. Since the existing machinery are not suitable for new uses, their replacement/modifications involves cost and trained manpower. It is also important that people have to change their habitual concept in their minds to new things. It is a long process for them to be familiarized to the new technique and to the new products. Introduction of new product needs a proper market promotion, liberal financial assistance and a guaranteed market. At present, there is no agency, which can assist in marketing research, sales campaign and other related aspects. New product development, product improvement and modifications need a systemic approach towards the production. Also correcting of marketing strategies is the key point in diversification programme. In Nepal, as imports are liberalized, availability of very high quality of imported goods work as substitutes of jute products. Jute products such as clothes, shoes, apparel and decorative have to face stiff competition from these goods and it fails to compete both in terms of price and quality. Government has to give protection to these products by imposing heavy tax on import or making total restriction on import of such items. Difficulties in evolving new uses can be summarized as lack of financial resources, lack of technological know-how, absence of market promotion agency, lack of technological research laboratory, lack of marketing research works, lack of systematic approach towards diversification, lack of long term government policy, liberal import permission, limited domestic market, quality of jute fibers, and competition from other materials. Some of the constraints are given below.

Lack of Research

There is no research institute, which is directly responsible for jute/kenaf products development. Although there is a research centre known as Jute Research Center (JRC) Itahari-Sunsari. The JRC is the only research centre in Nepal engaged in the activities of various crop improvements. Programmes including different agronomic experiments on jute/kenaf. Neither the University nor any other research organization in Nepal has conducted any research work, even of a fundamental nature, on jute/kenaf. Apart from that, there is no research and development in jute industry.

Quality of Jute Fibers

Jute fibers produced in Nepal are not as the quality of Bangladesh and India. Poor quality of fibers is also due to breeding and retting process mentioned in chapter 4. Coarseness, hardness and poor quality of jute/kenaf fibers become a problem in evolving new uses. Some products, like wallpaper, need high quality fibre that is hardly achieved by using local jute/kenaf as a raw material. On the other hand, new products made of poor quality fibers will not be attractive to the market especially the handicraft products such as hand bags, belts etc.

Competition from Substitutes

Almost every kind of jute/kenaf products can also be made of polypropylene, which gives better strength than jute/kenaf products. Presently, packaging bag for less than 50kg pack weight is always made of polypropylene to contain fertilizer, animal feeds and agricultural products. These bags are also cheaper than jute/kenaf bags and available almost everywhere. The competition from this material and the adoption of bulk storage system make it more difficult to diversify jute/kenaf products.

Non-availability of Machine and Technology

Sometimes the personnel's in jute industry have the idea to develop a new jute product but they cannot continue their idea since the machine and equipment are not available. Also there is no research laboratory to do the experiment. There are very few jute technologists in Nepal. Most of technical staffs in jute industry graduated from other fields.

Market Force

As already known demand from the market is most important and influencing factor for any investment decision to produce new product especially jute/kenaf products. The situation to create the market demand for jute/kenaf products is, thus, very important. The inducement could be done in many ways such as promotion of new product, new end-use and marketing promotion. However, there is no market force for jute/kenaf products right now in Nepal. Nepalese jute industry is not in the position to create the demand of these products.

Financial and Marketing Assistance Provided

Nepalese jute sector has not come under the preferential sector. Adequate financial support could not be provided yet. Earlier JDTC/N (at present dissolute) entrusted with the responsibility of overall development of jute sector as a whole, could not achieve many of its objective due to non-availability of adequate funds. The existing jute mills are in acute need of modernization so as to enable them to go for diversification. These mills are not getting financial assistance on liberal terms and conditions. There are no jute technological research facilities available for quality control, fiber technology, cost reduction etc., to help them to under take and adopt production and marketing of diversified jute products and also to develop techniques to optimise utilization of existing production capacity and preventive maintenance of the machinery.

Marketing Assistance

JDTC was supposed to provide marketing assistance, but this organization is now dissolute. JDTC did not have any financial resources, which could be utilized in providing marketing assistance. Another agency that could do this job is Trade Promotion Centre (TPC) but as this

organization has to look after all commodities and also due to financial constraints it has not been very useful for the purpose. For any marketing project activity it has to depend on foreign aid or assistance. So, it is high time to take an appropriate decision and formulate a long-term policy for the development of the jute sector as a whole.

New Jute Product Potential

An important aspect emerging from the research study is the possibility of finding diversified use for jute goods-particularly as blended fabrics and geo-textiles. The potential use of jute as geo-textiles appears to be promising and large. The practical aspects connected with the use of geo-textiles should be examined in consultation with the potential user Ministries concerned. However, there are number of additional products which the Nepalese jute mills could produce either for the domestic market or for export. But as demand studies do not show long-term prospects for the growth of jute mills they would be to optimise the production potential from the existing capacity rather than to add it. The existing mills should investigate what other products they can profitably manufacture. Apart from the non-traditional diversified jute products like pulp and paper, geo-jute, decorative and carpet backing the other now-traditional diversified products appear to be as follows:

- (a) The floor coverings market may prove to be a profitable diversion, even though the quantities are small. Existing mills have spinning equipment, which only needs rehabilitation and proper maintenance to be able to produce higher grades of yarn required for manufacture of the jute floor coverings. Total investment will not be high since the "dry dyeing" technique of jute fiber has been established. The only new equipment required would be for yarn twisting plus a few special looms to weave the floor covering. The market size is uncertain, but if the market expanded, the number of looms could be increased.
- (b) Presently high-grade yarn manufacturing for export is a potential area for diverting a small proportion of the spinning capacity. In this respect FAO mission had made two trials in RJM using high-grade Nepalese jute and the existing spinning equipment. The results were encouraging, although more work needs to be done in overhauling machines and adopting different spinning system settings. The recently established jute mill at Sonapur - Khanar of Sunsari district namely Arihant Multi Fibers Ltd. produces jute fine yarn which is used for carpet backing in the mill as product diversification. Though special fine yarn is also used for making coarse jute carpets, jute carpet pile, jute shopping bags, wall hanging materials, binding materials, packaging etc but besides these there are many applications of special fine yarn in the specific use in export markets such as decorative jute fabrics, as insulation materials in electric cables, as carpet yarn either in the form of 100 per cent jute based carpets and cardage as in the form of fine twine and rope making.

The demand of fine yarns is almost confined to the developed countries. It appears reasonable to study the demand for jute fine yarns in the overseas market. Import of fine yarns in EEC as per the Association of European Jute Industries, France reveals that the

import of fine yarns in the European countries is on the increase where as the import of jute cloth and bags is declining. With a modest import of 1800 tons in 1967 the import of jute yarn in the EEC countries has increased to more than 25000 tons in 1979. The import of jute cloth and bags has declined gradually and has come down to 75000 tons from a level of 120000 tons in 1967.

The import of jute fine yarn during 1978 by various EEC/West European Countries includes West Germany 6992 mt, Belgium 18689 mt, Denmark 473 mt, France 2907 mt, Ireland 1751 mt, Italy 575 mt, Netherlands 10754 mt, UK 840 mt, Austria 919 mt, Norway 120 mt, Sweden 399 mt, Switzerland 244 mt, totalling 44570 mt.

These markets are sophisticated, fashion conscious and highly demanding in terms of special fabric requirements of jute fine yarn, the demand of which in the international markets are being presently met by Bangladesh, Thailand and to a limited extent by India. The exporters of the fine yarns to EEC countries include Bangladesh with an export of 365 tons in 1974/75 increased to 4280 tons in 1976/77 followed by India with an export of 444 tons in 1974/75 to 9255 tons in 1977/78; Thailand 1463 tons in 1974/75 to 10427 tons in 1978/79; Spain 873 tons in 1974/75; and Portugal from 23 tons in 1974/75 to 1380 tons in 1977/78.

Among the various products, jute fine yarn plays import role for jute carpet backing. The demand for it is dependent on the world market. So if the mills can make quality jute yarns, the demand for making jute carpet backing is tremendous. So there is sufficient scope for the export of special fine yarn and backing cloth to overseas countries and India.

- c) Production of cheap knitting yarn, by the process of 'woollenization' of jute fiber also may be possible. In this context HMG has been encouraging, but these machines are presently being supplied with imported acrylic/ Viscose yarns.

Future Demand for Raw Fiber and Jute Products

The availability of raw fiber has never been a constraint in the production of jute goods. In fact fiber production has generally been in the excess of domestic demand. As a result substantial quantities of raw jute are exported. The production, export and domestic consumption of raw fiber have fluctuated considerably from year to year largely depending upon the external market situation and export outlook. In recent years raw fiber production has steadily dropped. Since jute products are being replaced by synthetics, the export of raw jute and jute products do not seem to offer a great potential for further developments. On the basis of demand studies which do not show long term prospects for the Nepalese jute industry reveals the fact that new investments for creating fresh capacity would not be justified. Thus the future of the jute industry is desired to achieve optimal output from existing capacity. Keeping view, the outlook for raw fiber and jute goods are not encouraging. The future sale of raw fiber in Nepal for processing into jute products (either for domestic consumption or export) may be determined more by export demand for finished goods than by a growth in jute goods requirements. With the mills needing to increase their volumes of jute goods production it is expected demand for

fiber by the mills to expand primarily for sacking production.

For export markets the situation is less clear. At present levels fiber production it is expected sales to India to recommence. Such sales however, will probably be a residual activity to dispose of fiber not required in the domestic market. Fiber sale possibilities to third countries should also be explored, but given the extra transport costs Nepal faces due to its land-locked position, these markets will be less profitable than India and therefore be of second priority to merchants sacking export outlets for fiber. Only if prices in international fiber markets were to strengthen significantly (or the India market be denied to Nepalese fiber) would merchants be expected to seek overseas markets for fiber.

The outlook for jute goods is disappointing although local demand will grow more than export demand. In view of the serious competition jute goods are facing in export markets, the future of the Nepalese jute industry rests largely on an expanding domestic market. The increased production of food grains, sugar and cement are expected to result in an increase demand for jute goods, particularly sacking normally used for packing these commodities. But the expectations of growing domestic market for jute goods may hamper by substitutes. The use of jute sacking is steadily being replaced by synthetics for packaging purposes. To avoid such a contingency, a specific policy decision needs to be taken not to permit the import and use of synthetic packaging materials in all uses in which jute could functionally meet the requirements.

To project future jute goods demand the FAO Mission (1983) evaluated the anticipated production expansion of main end-users of sacking. It also assumed that Nepal would continue to be a captive market for jute goods, not likely to be replaced in the foreseeable future by polypropylene and bulk handling techniques. The results of these projections are contained in table 5 and 6.

According to the Ministry of Industry, sugar production is projected to increase by over 10000 tones by 1987/88 to reach 31000 t/year. A much larger increase is forecast for cement production with the Himal Cement Plant expanding to 120000 tones and the Hetauda Plant commencing operation and producing 225000 t/year (table 8). With Government policy favouring the active procurement of rice by the Nepal Food Corporation (NFC), volumes of cereals handed by NFC is forecast to increase substantially to 140000 tones (table 9). Taken together, and assuming the private rice trade demand for sacking remains relatively constant, these end-users would require sacking equivalent to 5700 tones of jute annually by 1987/88.

The growth in demand of "other" users cannot be adequately quantified until further information becomes available as to the nature of this demand. However, even if all the recorded sales were presently used in Nepal, and expanded by 250 t/year it would only reach 3700 tones by 1987/88, resulting in a total sacking demand of 9400 tones. After allowance for some hessian and twine production total jute goods demand in five years would be less than 10000 tones even under the rather optimistic expansion programmes and assumptions set forth above. A domestic demand of only 10000 tones is not sufficient to support a economically viable jute industry. Thus it is considered what additional demand might be generated within the country.

The most important development in this regard is the construction and operation of the massive Udaipur Cement Plant having a capacity of 277300mt. per year (Economic Survey, 1993/94). Demand for jute sacking for entire output is raised by a further 10000 tones. It is notable here that Agriculture Input Corporation (ATC) imported 86000 tones of fertilizers in 1981/82 primarily in polypropylene sacks. Of this about 38000 tones was stable (complex or phosphate) fertilizer, which could be brought into Calcutta port in bulk and then bagged using jute sacking. Assuming 20 bags/t and a weight of 0.48 kg/bag, this volume of fertilizer would require the equivalent of 1600 tones of jute sacking per year. It is suggested HMG investigate the feasibility of such a practice for the future.

Table 5. Projected Sugar and Cement Production

	F/Y	Sugar	Cement
Actual	1977/78	26502	35850
Actual	1978/79	23690	21019
Actual	1979/80	14105	29163
Actual	1980/81	11900	32326
Actual	1981/82	19149*	22897*
Projected	1987/88	310001	3450002

Note: * denotes provisional.

Source: Ministry of Industry, Kathmandu.

1.) Actual plus 10800 t/year from mill under construction.

2.) Himal Cement Co. Ltd. expands to 120000 t/year plus 225000 t/year from Hetauda Cement.

Table 6. Calculation of New Jute Bags Required by Identifiable Users, Nepal, 1987/88

Product	t	Bags/t	No. of bags	Average weight of bags, kg.	Jute weight of bags, t
Sugar	31000	10	310000	1.200	372
Cement	345000	20	6900000	0.480	3312
Rice (NFC)	140000	10	1400000	1.134	1587
Rice (Millers)	210000	2	420000	1.020	428
Others					3700
Total:					9399

Source: FAO Mission.

Market research through secondary and primary survey conducted by National Productivity and Economic Development Centre, Nepal have revealed that due to unavailability of jute sacks in time and its cost price, consumers are compelled to use PP sacks which are mainly imported from India.

To assess demand for sacks (both jute and PP sacks) in the country, the prominent consumers of sacks were identified as industries and agricultural products as follows.

	Sacks used
Cement industries	PP sacks
Sugar industries	Jute sacks
Flour mills	Jute sacks
Animal feed	PP sacks
Food grain packing	Jute sacks

The following table 7 shows the consumption pattern of jute and PP sacks by industries.

Table 7. Consumption Pattern of Jute and PP Sacks by Industries

Consumers	Total Approved Capacity (MT)	Capacity Utilization % in the year 1992	Weight per Packing Media (wt/bag)/kg	Requirement of Packing			
				Jute sacks		Polypropylene	
				Pcs.	MT	Pcs.	MT
1. Cement Industries	617133	30	50	-	-	12342660	740.56
2. Sugar Industries	52185	79	100	521850	521.85	-	-
3. Flour Mills	148414	28	80	1855175	1855.17	-	-
4. Animal Feed	34411	44	50	-	-	688220	41.29
Total	2377025	2377.02	13030880	781.85			

N.B. Wt. of jute bag (100 kg capacity) = 1 kg

Wt. of polypropylene bags (50 kg capacity) = 60grams

The above table shows that requirement of jute sacks on the basis of major industrial user is 2377mt. and the requirement of PP sacks is 782mt. at full capacity utilization.

The second major use of woven sacks is for storing & packing agricultural products such as maize. Paddy, wheat, barley, oilseeds, potato etc. The estimated requirement of sacks in agriculture produce are as presented in the table 8 shows that the estimated total annual requirement of jute sacks for packing food grain is 45416 MT. Hence the total requirement of jute sacks for industrial and agricultural products packing and storage is estimated to be 47793

Mt and PP sacks 782 MT (on the assumption of cement and animal feed preferring to use PP sacks).

Table 8. Estimated Annual Requirement of Jute Sacks

S.N	Cereals	Unit	Production (1993/94)	Total demand of bags No.
1.	Maize	'000 MT	1210	12,100,000
2.	Paddy	'000 MT	3493	34,930,000
3.	Wheat	'000 MT	877	8,770,000
4.	Barley	'000 MT	29	290,000
5.	Oilseeds	'000 MT	99	990,000
6.	Potato	'000 MT	780	7,800,000
	Total			64,880,000
				Less 30% = 19,464,000
				45,416,000
				Net Required 45,416 MT

Note: Basis of Calculations:

- ★ Assuming 1 bag contains 100 kg of total grains.
- ★ A bag weighs 1 kg.
- * 30% is assumed for re-use purpose.
- * Source: Production of food grains is extracted from Economic Survey, MOI.

Supply of Jute and PP Sacks

There are 179 plastic manufacturing units registered in the Department of Industry (Kantipur, 1999). It is learnt that PP bags are being met through imports from India. It has also been learnt that PP bags are imported from China. No statistics is available regarding import figure of PP bags in the country. Probably these are being shown in the import statistics under different product name.

There are at present 6 jute mills manufacturing jute twine, hessian cloth heavy twill, sacks, the total approved capacity of all six jute mills is reportedly 47112 MT (Table 9). Four of the six jute mill are reported involved in jute sacks production.(including now sheet down Raghupati and Biratnagar Jute Mills.)

Separate data on production capacity of twine, hessian, and sacks is not known. Even on the assumption of 50 per cent of total approved capacity of these mills (471 12 MT) i.e. comprise of jute sacks, maximum of 23500 MT of jute sacks is likely to be produced by these mills.

Demand Supply Gap

Looking at demand for jute sacks as 47793 MT and supply capability of jute sacks as 23500 MT, there seems considerable supply gap for jute sacks in the country.

Price Structure

Jute sacks 100kg capacity Rs.25-27 per piece. PP sacks 50 kg capacity Rs.6 without custom duty. It has been found that the existing jute mills are unable to cope with market demand for sacks in the country. Because of this, the consumers are compelled to use other substitute such as imported polypropylene sacks etc. In Nepal demand for sacks of either type is increasing year by year. The potential industries that use jute bags are coming up in the country, which will also consume the sacking bags for packing purposes. Rising concern over ecology and impact on environment of the use and disposal of synthetic packing materials has also generated a new interest in jute bags. Though it is felt that domestic demand for jute goods has not carefully and systematically analysed. In many parts of the country second hand jute bags are smuggled from, India and if this can be checked, the domestic demand will certainly be high. For this it is necessary to adjust our marketing and sales network. Domestic factors like sick jute industries, low domestic consumption, absence of organized and guaranteed market for domestic trade of raw jute and jute products, low productivity etc and international factors such as stiff competition with synthetics and other substitutes, low quality of products, lack of contact with international marketing agencies, no marketing research etc are some of the factors affecting jute sector. We should analyse the situation and should concentrate our efforts to solve the problem, which is within our control. Considering the domestic factors there should be a National Jute Policy, which would manage the aforesaid factors. Jute policy will take care of these factors and there will be a systematic approach to the problem arising out of inter-action of different factors at national and international level. In this context an in-depth study of the whole jute sector is required and there should be a systematic approach towards the formulation of National Jute Policy. But before formulating new jute policy, an appropriate decision is needed regarding running of the existing sick jute mills. Either close the sick jute mills or provide financial support to modernize them according to current need. National Jute policy should envisage that thousands of farmers and labourers are engaged in jute farming and industries directly or indirectly and it can be a major source of foreign exchange earning again as it was before. Proposed policy should also consider the institutional development, remunerative price, steady supply of raw jute to the industries, mill modernization and diversification, enhancement of domestic consumption etc. In this regard the role of dissolved JDTC should again be reviewed according to the guidelines drafted in the policy. Re establishment of JDTC can be a nucleus body and effective focal point unit to implement the policy. Following should be the basis of jute policy. (i) Jute agriculture production planning

(ii) Fixation of remunerative price before jute sowing (iii) Proper marketing network and institutional development. (iv) Modernization of existing jute mills or establishment of new jute mills with new technology (v) Product diversification (vi) Development of cottage industries based on jute and jute products and market promotion (vii) Imposition of statutory rules and regulations regarding compulsory use of jute products to increase the domestic consumption (viii) Jute agriculture and technical research (ix) A permanent body for the recommendation of incentive of subsidy.

But one thing notable here that jute policy only in itself, is not a perfect remedy for the deteriorating jute sector. It will have to be accompanied by other industrial, fiscal and trade supportive measures.

Table 9. Production of Jute Goods (Twine, Hessian & Sacks)

			Production Figure
	Name of Industry	Approved capacity MT as of 1991/92	1992/93(MT)
1.	Guheswori Twine Plant	2060	424
2.	Nepal Jute Industries (Pvt) Ltd	5400	2605
3.	Biratnagar Jute Mills Ltd	12000	3408
4.	Raghupati Jute Mills Ltd	7800	2086
5.	C.M. Jute Mills Pvt. Ltd	4500	3429
6.	Arihant Multifibres Ltd.	22984	Mill recently started Production
	Total production during 1992/93 hessian, sacks, twine		11952
	Approved capacity of all six industries	54744	47112
	Capacity Utilization % (1992/93)	43%	32%

Source: Department of Industries.

Future National and International Approaches in Developing and Marketing New Jute Products

It should be clearly understood that the marketing of diversified jute products is an entirely new concept and therefore new institutional arrangement and framework are required to be developed. Market information seems to be the basic requisite for marketing the diversified products. Other diversified and new products, which are still in their various phases of research and development, need proper support in terms of finance, expertise, training and equipment support. The developing and marketing of new jute products are bound by many constraints. The Nepalese jute industry has no incentive to develop any new products. The in

competitiveness of jute industry has discouraged any new investment. People believe that jute industry is in low profile. It is the declining one. The future approaches must result in gaining the confidence of jute industry. Due to the financial constraints on the part of the Government and concerned institution it seems that at present international agencies can help in many ways to give boost to the diversification programme. Assistance, both local and foreign, is of the utmost necessity to overcome the problems in developing and marketing new jute products. It is clear that jute as a natural fiber has a bright future not only in its domestic markets but also in markets abroad provided right type of guidance, financial supports and marketing strategy available to the entrepreneurs engaged in production and marketing of these products.

National Approach

At the outset, a detailed study of the jute sector is required and there should be a systematic approach towards the formulation of policy for developing and marketing new jute/kenaf products. The study should cover the size of market, target market, consumers behaviour, production cost etc. As if, the success of developing and marketing new jute/kenaf products rely heavily on the market force and the confidence of private sector in the future of jute industry, proper marketing research should be done before going for diversification. The government should play the significant role in promoting the jute marketing by co-operating with the private sector in various marketing programmes such as conducting market research in some country-target markets, promoting the jute markets through the offices of commercial counsellors in various countries. The national approach required in this aspect would be proposed as follows:

- i) An appropriate decision has to be needed regarding the existing sick jute mills, either closing the sick mills or providing adequate financial support to modernize them.
- ii) Enhance the process of establishing new jute manufacturing units, which is supposed to have modern technology suitable for product diversification.
- iii) Handloom, small scale, cottage and handicrafts units should be established especially for making non-traditional jute products.
- iv) Either task of market promotion should be entrusted with some other suitable national agency or re-establish the dissolute JDTC and its activities should be expanded with full financial support.
- v) A long-term national jute policy is needed to safe guard the interest of the jute sector.
- vi) Proper study of the market and a feasibility survey is required to have the knowledge of new products acceptable in the domestic as well as in the international market. In this regard full financial support is needed before going for diversification.
- vii) Since the lack of machinery and equipment is also major cause affecting the new product development, the government should support the industry by giving tax incentive.

- viii) Since the major competitor of jute/kenaf products is chemical fiber - polypropylene, its disadvantage when compared to jute products is environment pollution. If people become aware of this problem (as rising concern over ecology and impact on environment of the use and disposal of synthetic materials has generated a new interest in jute) the demands of jute/kenaf products would certainly increase. The government and other relevant organizations concerning environment protection should initiate this approach. The campaign should also emphasize on the preference of natural bast fiber - jute/kenaf to man-made fiber (pp).

International Approach

As stated earlier due to lack of financial assistance and technological known-how on the part of the government and concerned institution it is observed that without international assistance, new product development is not possible. It seems that only international agencies can help to give boost to the diversification programme. Types of international approach required are as follows:

- i) International fund to start the project
- ii) Technological known-how through expertise consultation service in the initial stage
- iii) Support for the establishment of technical research work.
- iv) Availability of the latest information about the market situation through international marketing information service.
- v) Availability of soft loan or aid to modernize the existing jute mills. It is necessary to continue the traditional product and for diversification of the product according to the need of market.

Concluding Remarks

Rising concern over ecology and the impact on the environment of the use and disposal of chemical materials has recently led to renewed interest in the possible advantages of natural fibers. A long side with traditional uses quite recently new and diversified jute products such as geo textiles for erosion control, jute-reinforced plastics, jute laminates, paper pulp and paper, as well as many types of decorative fibers, furnishings, carpets and handicrafts are though accounting for relatively small quantities of fiber at present, seem to offer potential for future development. The ability of jute to compete with synthetic substitutes depends on price competitiveness, and its meeting technical requirements for specific uses. Jute's loss of markets to such technological innovations as bulk handling in transport and storage of commodities and materials can be offset only by developing new products or adapting to new uses and find out ways and means to make them economically viable, competitive and commercially attractive in one side and the other to improve varieties of traditional products. The traditional products could fight back if only they become brighter and lighter. The offering of lightweight, lower-cost products of acceptable technical performance can be effective in keeping jute a major factor. The prospects for jute products depend on both a dependable

supply of competitively priced jute goods and improved market access where trade barriers non-effectively exclude imported jute products. Improved efficiency of jute agriculture and manufacturing combined with trade policy improvements are crucial to jute's prospects.

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