Current Journal of Applied Science and Technology

25(3): 1-6, 2017; Article no.CJAST.38295
Previously known as British Journal of Applied Science & Technology
ISSN: 2231-0843, NLM ID: 101664541

Jute Production: The Need for Linkage among Research, Farmers and Industries in West Bengal, India

A. Shamna[1*], S. K. Jha[2], A. K. Chakraborty[2] and S. Kumar[2]

[1]Agriculture Extension, ICAR-Central Research Institute for Jute and Allied Fibers, Barrackpore, Kolkata, India.
[2]Agricultural Statistics, ICAR-Central Research Institute for Jute and Allied Fibers, Barrackpore, Kolkata, India.

Authors' contributions

This work was carried out in collaboration between all authors. Author AS designed the study, developed the schedule, primary data collected from the respondents, managed the analyses of the study and wrote the first draft of the manuscript. Authors SKJ and SK assisted in schedule preparation and data collection. Author AKC assisted in statistical analysis. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/CJAST/2017/38295
Editor(s):
(1) Ahmed Fawzy Yousef, Associate Professor, Department of Geology, Desert Research Center, Egypt.
Reviewers:
(1) Olutosin A. Otekunrin, Federal University of Agriculture, Nigeria.
(2) Fakunle Aremu, Obafemi Awolowo University, Nigeria.
Complete Peer review History: http://www.sciencedomain.org/review-history/22615

Original Research Article

Received 21st November 2017
Accepted 29th December 2017
Published 6th January 2018

ABSTRACT

The research study was conducted in four major jute growing districts of West Bengal to analyse the problems in jute sector as a whole and to develop a model to frame for the effective functioning of the jute sector. The major constraints faced by the jute farmers in the jute production (n=120) was analyzed using rank based quotients which indicated (1) the high cost of labour (2), Middle men (3), Lack of knowledge about fibre grades (4), unavailability of labour and so on. Similarly one of the major problems in this area is workers' unavailability which have been scored highest (0.99) followed by cost of labour (0.86), competing with synthetic products (0.68) and lack of demand among others (0.63). Industrial views on jute fiber production and procurement showed that, 86.5 per cent of the respondents were unhappy with the retting method and required them to be

**Corresponding author: E-mail: shamnaext@yahoo.co.in;*

improved so that no part of the fibre should be wasted, they think that there should be more participation come from the State government. After analyzing the existing linkage, the study had come out with a new model for the better performance of the jute sector, involving all the stakeholders.

Keywords: Jute farmers; jute industry; research; linkage; West Bengal.

1. INTRODUCTION

Jute and allied fibres are group of natural fibers which have tremendous economic and trade importance particularly in West Bengal, India. The area under jute in the country is around 7.96 lakh ha with a production of about 102.85 lakh bales [1]. West Bengal contributes the maximum area to the tune of about 74.7% and 81.6% of total national scale of production, respectively (five years average of 2006-07 to 2010-11). Jute supports nearly four million families and provides employment to about 0.26 million industrial workers besides livelihood to another 0.14 million persons in the tertiary sector and allied activities [2]. Jute is the cash crop for the poor and the marginal farmers in India and it continues to be an important commodity for employment and source of income for them. The jute agriculture was adversely affected after partition of India. To meet the demands of the industry, production of jute and ailed fibres have to be increased. Two important means for it was to increase the productivity and to increase the area covered under jute cultivation. With the continuous efforts of the scientists as well as the special programs for jute production implemented by the Government, the area and productivity of jute had increased tremendously. Even then the jute sector could not be revived for the fullest extent. The industry faced stiff competition from its cheaper substitutes and is to be set with many problems. The farmers on the other hand are not receiving remunerative prices for the fibre produced. It is high time that the problem to be sorted out to the extent possible and bring back the past glory of jute production. Here comes the necessity of close linkage between the stakeholders in uplifting the jute farmers as well as industry. The study was focused mainly on the major constraints faced by farmers and industries, of present scenario and whether the present situation of jute production sector can be improved or not is also needed to be known. The study was designed to find out the hurdles faced by the farmers in the jute cultivation sectors, so as faced by the industries regarding procurement, processing and marketing zones.

2. METHODOLOGY

Looking into the nature of research problem, Expost facto research design was selected as the present investigation dealt with a phenomenon which has already occurred. Survey method was used to collect data from jute farmers as well as jute industry. Data were collected from farmers of five villages one each from the major jute growing districts which include Nadia, Murshidabad, North 24 Parganas, Hooghly and Malda. Twenty Jute farmers were selected randomly from each village which constitutes to a total sample size of 100. In the case of industry, stratified random sampling method was used to select the industries on the basis of jute exports as well as internal consumption. The respondents from the farmers group and industries were asked to list the constraints faced by them in profitable jute production and Procurement, Processing and Marketing respectively. The listed constraints were again ranked by them based on their priority.

2.1 Quantification of Data in Terms of "Rank Based Quotient" (RBQ) Estimation

To find priority of the constraints "Rank Based Quotient" (RBQ) method [3] was used. The formula is as given below

$$RBQ = \frac{\sum i = \ln(Fi)(n+1-i)}{Nn} \times 100$$

where, Fi = Frequency of farmers for the ith rank of the problem.
N and n = Number of respondents and maximum number of ranks given for various problems by a farmer among all the contacted farmers, respectively.

3. RESULTS AND DISCUSSION

3.1 Constraints Faced by Jute Farmers in Profitable Jute Production

The major constraints faced by the jute farmers in profitable jute production were listed by them

and then constraints were again given to the respondents for ranking which is based on their severity. Rank based quotient (RBQ) was then calculated and the results are presented on Table 1. The highest ranked constraint was lack of organised market (RBQ 92.15). Many times the farmers had to sell their product below minimum support price in order to meet their daily home requirements. This distress sale had resulted in loss of interest and confidence in jute farming. The second major constraint reported by farmers was high cost of labour (RBQ 90.76). The labour charges had increased considerably since last few years but the price received for jute fibre by the farmers had not increased proportionately. This gap had remained as a major constraint. The third constraint as per the RBQ (89.65) was middlemen. The major chunk of the profit is being obtained by the middlemen. Unless this practice is brought under control, the jute farmers are going to suffer in future. Many farmers had low knowledge on the grading system of jute and this is being exploited by the middlemen and obtains quality fibre from farmers at low price. This can be checked by educating the farmers on the grading system of jute fibre. The fifth ranked constraint (RBQ 79.93) was unavailability of labour especially during retting operation. Jute is a labour intensive crop where the majority of labour is required for weeding operation followed by retting. The labour requirement during weeding is addressed by the introduction of nail weeder in jute which had resulted in drastic reduction of the number of labour required for weeding operation. But the labour requirement during retting operation is apparent which needs to be addressed. The unavailability of labour during the retting period also results in high cost of labour for the retting operation. The other constraints were related to water crisis, pest and disease attacks among others. The studies of Hussain, et al. [4], Kakoty and Bora [5] Deka and Sarma [6] Ghimire and Thakur [7], Das and Chanu [8] confirm the above results.

3.2 Constraints Faced by Jute Industry in Procurement, Processing and Marketing

The study was conducted on constraints faced by industry in order to assess the actual problems faced by jute sector as a whole. The listed constraints by the industries were further ranked by them. These ranks were quantified by using Rank Based Quotient method. The results are presented in Table 2. The results indicated that the jute industry also faced constraints but different from that of jute farmers in many aspects (Table 2). Among the constraints listed, unavailability of labour (0.99) scored highest closely by cost of labour (0.86), competition from synthetic products (0.68), lack of demand (0.63), Middlemen (0.57) and unavailability of quality fibre (0.54). The study confirms the report of Singh [9] and Banik and Shil [10].

3.3 Linkage Model for Enhancing the Performance of Jute Sector

The existing linkage among research, farmers and industry was studied by participant observation and group discussions with the research stations, farmers and industry (Fig. 1), constraints faced by the farmers and jute industry were also studied and based on this, a Model was suggested for the better performance of the jute sector in Fig. 2. The existing linkage analysis revealed that there was a wide gap among research, farmers and industry. The technologies from research station had been disseminated only to few villages in and around

Table 1. Rank Based Quotients (RBQ) for the constraints faced by farmers in profitable jute cultivation

Sl. no	Constraints	RBQ	Rank
1	Non availability of labour	79.93	5
2	High cost of labour	90.76	2
3	Lack of knowledge about fibre grades	80.20	4
4	Middle men	89.65	3
5	No organised market	92.15	1
6	Insect pest attack	46.87	7
7	Water crisis during sowing	67.70	6
8	Water crisis during retting	43.54	9
9	Lack of space for storing the fibre	21.66	12
10	Lack of availability of quality seeds	41.66	10
11	Problem of weeds	30.48	11
12	Lack of knowledge about variety	46.04	8

Source: RBQ calculated from the Primary data collected from the jute farmers

Table 2. Rank Based Quotients (RBQ) for the constraints faced by industries in profitable jute procurement, processing and marketing

Constraint	RBQ	Rank
Labour availability	0.99	1
Labour cost	0.86	2
Sufficient Fibre availability	0.22	15
Fibre quality not up to the mark (Lack of fine fibre)	0.54	7
Less storage facility	0.22	14
Competition from other similar synthetic products	0.68	3
Lack of latest machineries	0.55	6
Middle men	0.57	5
Demand Constraint	0.63	4
Dominance of single product-sacking	0.48	10
Dominance of domestic consumption	0.39	13
Non exploitation of Export market potential	0.45	11
Absence of institutionalized marketing effort	0.53	8
Lack of awareness of jute in developed nations	0.49	9
Lack of process and quality controls	0.43	12

Source: RBQ Calculated from Primary data collected from the jute mills

extension centres. To bridge this gap the Effective collaboration and functioning of state level extension systems in dissemination of technologies was suggested.

The linkage between farmers and industries was mainly through middlemen. Because of this existing linkage, jute farmers get poor price to the product irrespective of the quality. Lack of appropriate price for better fibre quality restrained farmers from adopting new technologies demonstrated by the research institute. The relation between farmers and industries can be improved by avoiding the middle men and by forming Farmers Interest Groups or Commodity Interest Groups. These groups can be trained on grading of fibres and can be an effective link between farmers and Industry. Most of the Jute mills also accepted to procure jute from such groups provided they are well trained on grading and supported by any government source like Jute Corporation of India. The linkage between research and Industry is very weak. The relationship is limited to processing technology related information. A strong linkage where both fibre quality related and processing technology related information or feedback sharing is very much required for overall growth of the jute sector. By considering all the above aspects, a linkage model was suggested for the better performance of the jute sector (Fig. 2).

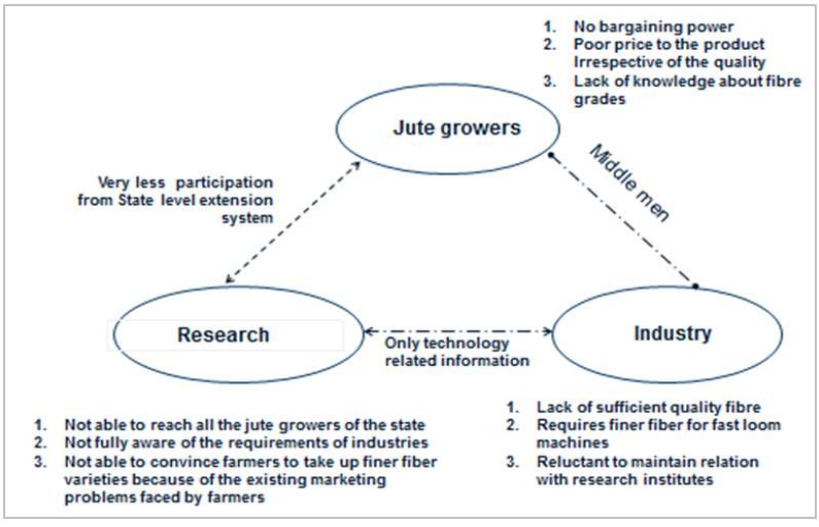

Fig. 1. Existing linkage among research, farmers and Industry in jute sector

Source: Derived from the Primary data collected from jute farmers, industry and research institutes

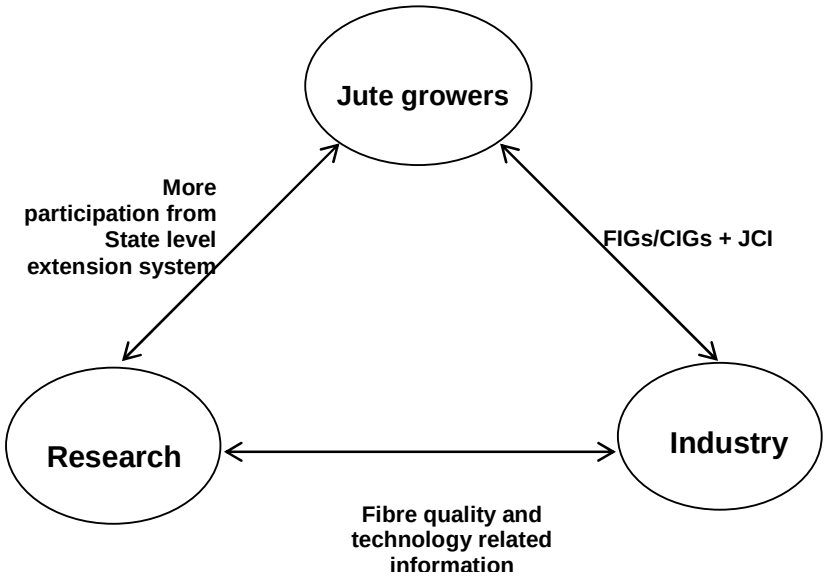

Fig. 2. Suggested model for linkage among research, farmers and Industry in jute sector
Source: Derived from the Primary data collected from jute farmers, industry and research institutes

4. CONCLUSION AND RECOMMENDATION

Jute is an economical crop which plays a significant role in the economy of Asian countries especially India and Bangladesh [11]. Raw jute was considered as a source of raw material for packaging industries only. Here it has now emerged as a versatile raw material for diverse applications, such as, in the textile industries, in the paper industries, in building and automotive industries; it is also used as soil saver, decorative and furnishing materials, etc. Raw jute being bio-degradable and annually renewable source, it is considered as an environment-friendly crop. For the sustainability of jute sector, it is required to keep both the farmers as well as the industries to remain sustainable at every scale. This can be done by addressing the problems that experienced by the jute growers and jute industry to an extent. More involvement from the State Government and farmer-groups are recommended to be dynamic and updated in jute production system. The model suggested for the better performance of the jute sector can be executed with the cooperation of all the stake holders involved like the farmers' interest groups /commodity interest groups, state level extension agencies, research organizations & jute industries etc. The model developed from the study will spread more light on strengthening the jute sector through emphasizing the role of various stake holders at different stage of the same.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Singh M. Status paper: Status of raw jute (Jute and Mesta) in India. Directorate of Jute Development, Ministry of Agriculture, Department of Agriculture and Cooperation, Government of India; 2014.
2. Seth R. Industrial economics. Ane Books Pvt. Ltd. New Delhi; 2010.
3. Sabaratnam VE. Manual on field experience training for ARA scientists, National Academy of Agricultural Research Management, Rajendranagar, Hyderabad (A.P.); 1988. Kakoty G, Bora D. Impact of emerging channels in agriculture, report by Agro Economic Research Centre, Assam Agricultural University; 2013.
4. Hussain M, Rahman M, Uddin MN, Taher MA, Nabi MN, Mollah AF. Problems and solutions in jute cultivation faced by the farmers in a selected area of Bangladesh. Journal of Biological Sciences. 2002;2(9): 628-629.

5. Kakoty G, Bora D. Impact of emerging channels in agriculture, report by Agro Economic Research Centre, Assam Agricultural University; 2013.
6. Deka P, Sarmah D. Constraints and prospects of agricultural marketing in North-east India. International Journal of Commerce and Business Management. 2012;5(2):145-151.
7. Ghimire TB, Thakur NS. Constraint and opportunity of raw jute production: A case study of Eastern Terai, Nepal. Agronomy Journal of Nepal. 2013;3:117-122.
8. Das M, Chanu LA. Farmer‟s share in consumers" price in jute marketing with reference to jute farmers of Barpeta District of Assam. Indian Journal of Applied Research. 2016;6(4):235–238.
9. Singh BNP. Indian economy today: Changing contours. Deep and Deep Publications PVT Ltd, New Delhi 110027. 2004;682.
10. Banik S, Shil P. Indian jute diversified products in the export market, 2000-01 to 2012-13: Pattern and performance. International Journal of Economic and Business Review. 2014;2(11):181-187.
11. Das BB, Goswamy KK. Jute and Mesta statistics a critical analysis. All India Coordinated Research Project on Jute and Allied Fibres, Barrackpore; 2001.

Peer-review history:
The peer review history for this paper can be accessed here:
http://sciencedomain.org/review-history/22615