

Problems Faced by the Farmers in Sugarcane Cultivation under Joypurhat Sugar Mills

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ABSTRACT

The study was conducted to identify, describe and prioritize the problems confronted by the sugarcane farmers regarding cultivation of sugarcane in Joypurhat Sugar Mills area. Data for this study were collected from 100 sugarcane farmers' of ten subzones in Joypurhat Sugar Mills by using an interview schedule during the cropping season 2012-2013. Majority (63%) of the farmers faced moderate problems, while 11% faced low and 26% faced serious problems in sugarcane cultivation. To measure each of the items in rank order, Problem Faced Index (PFI) was developed. It was observed that among the 16 selected problems, shortage and high wages of labor ranked first (PFI =297) which was followed by high price of inputs (seed, fertilizer, insecticide, pesticide), low price of cane; non availability of fertilizers, pesticide and insecticide in time; insect, pest and diseases; lack of clean seed; lack of mechanization in plantation, weeding and harvesting; payment system of cane; getting loan; irrigation and drainage system; lack of capital; lack of training facilities; non co-operation from mills; lack of high yielding varieties; adverse climatic condition and difficulty in getting purji from mills with lowest PFI (36) problems among the farmers in cultivating of sugarcane.

Keywords: Problem, sugarcane farmers, cultivation, sugar mill, subzone

INTRODUCTION

In Bangladesh, sugarcane is generally cultivated in northwest and southwest part. It is the major sugar or gur producing crop of the country. The contribution of sugarcane crop to the national GDP was worked out at 0.67 % out of which highest GDP contribution was earned by gur (0.39 %) followed by sugar (0.15 %), chewing and juice (0.04 %), seed (0.03 %), cattle feed and fuel (0.03 %) and by-products (0.03 %), respectively (Rahman al. 2010). On the other hand, GDP contribution of sugarcane economy was found highest in the gur production (57.35 %) followed by sugar (22.61 %), chewing and juice (6.25 %), seed (4.95 %), cattle feed and fuel (4.61 %) and by-products (4.23 %), respectively (BBS, 2012). Although it is the main source of sugar, the production of sugarcane has not been able to keep pace with the increased demand of sugar in the country.

Sugarcane ranks second among cash crops and third among the major field crops in the country (Alam et al. 2005). Bangladesh is producing on an average 6.8 MMT of sugarcane out of which 2.3 MMT are used by sugar mills to produce 0.15 to 0.20 MMT

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sugar (Alam *et al.*, 2005). Bangladesh suffers from chronic shortage of sweetener (sugar and gur) and raw material of sugar mills. In Bangladesh average production of sugarcane is 47 tons per hectare (BBS, 2014). However, the climatic condition in the sugarcane growing areas in Bangladesh has supported to increase yield as high as 100-150 tones cane per hectare. So, there exists an ample prospect and potentiality to increase the yield of sugarcane. For these reason, it is necessary to identify problems related to cultivation and production of sugarcane. In sugarcane cultivation farmers face a variety of problems for which sugarcane cultivation and production cannot reach to a satisfactory level. Problem faced by the farmers mean the difficulties that the farmers face in capital, high yielding varieties, adverse climate, insect and pest attack, non-availability of fertilizer and pesticide, irrigation, tying, failure of relay crops, skilled labor, getting purji and loan, necessary extension services, training facilities of sugarcane. Sugarcane has an important consideration in agricultural field of Bangladesh. It is therefore, important to have adequate understanding on problem faced in selected sugarcane cultivation technologies at farm level.

In most of the cases, the sugarcane farmers are not familiar with modern techniques of sugarcane cultivation. For this reason we have to find out problems faced by farmers and prioritize the problems which farmer face the most. So, there is a scope to increase production of sugarcane, sugar, gur and its by-product though increasing yield per unit area, which is not only to meet up country's growth of demand for sugar and gur as well as increase national GDP. Understanding the problems in sugarcane cultivation is very important for farmers, researchers and policy makers to increase the cultivation and production of sugarcane as well as sugar. It is therefore, urgently necessary to devise the ways and means to increase sugarcane cultivation by identifying the problems and by minimizing the problems. Considering the above facts, the researchers undertook this research and formulated the following objectives: (i) to identify and describe the major problems faced by the farmers in cultivation of sugarcane; (ii) to prioritize the problems faced by the farmers in Joypurhat Sugar Mills area.

MATERIALS AND METHODS

Ten sugarcane growers were selected from each of the 10 subzones of Joypurhat Sugar Mills by following proportionately random sampling techniques representing small, medium and large growers. Each respondent was interviewed to indicate the extent of difficulty caused by each of the problems by checking any one of the four responses such as serious problem, moderate problem, minor problem and no problem. Weights were assigned to these responses as 3, 2, 1 and 0 respectively.

Problem Faced Index (PFI) was measured for each problem-item with the help of the following formula:

$$PFI = P_s \times 3 + P_m \times 2 + P_n \times 1 + P_n \times 0$$

Where,

PFI : Problem Faced Index

P_s : No. of respondents faced serious problem

P_m : No. of respondents faced moderate problem

P_n : No. of respondents faced minor problem

P_n : No. of respondents faced no problem

Thus, the PFI of individual problem could range from 0 to 300, where 0 indicating 'no' problem and 300 indicating 'high' problem.

Statistical techniques used in data analysis

The SPSS/PC + computer program (Statistical Package for Social Sciences) was used to perform data analysis. Descriptive statistical measures such as range, mean, number and percentage distribution, standard deviation were used to describe and interpret the data.

RESULTS AND DISCUSSION

This section deals with systematic and logical presentation of the findings of the investigations followed by their logical interpretation. Data received from respondents of problems faced by the farmers in sugarcane cultivation under Joypurhat sugar mills area were compiled, tabulated and statistically treated analyzed in the line with the objectives. Procedures of using data for the measurement needed some discussion for clear understanding.

Selected socio-economic characteristics of the farmers

Fifteen socio-economic characteristics of the farmers were selected for this study. The characteristics include: age, education, family size, farm size, area under sugarcane cultivation, annual family income, income from sugarcane, sugarcane farming experience, credit availability, input availability, organizational participation, extension media contact, innovativeness, training exposure and sugarcane cultivation knowledge. Salient features of these characteristics have been shown in Table 1.

Table 1. Salient features of the selected socio-economic characteristics of the sugarcane farmers

SL No.	Socio-economic Characteristics	Measuring Unit	Ranges Observe	Mean	SD
1	Age	Years	24-67	42.15	10.74
2	Education	Schooling year	0-16	9.54	4.96
3	Family size	Numbers	3-12	5.66	2.35
4	Farm size	Hectare	0.3-7.4	1.50	0.89
5	Sugarcane cultivation area	Acres	2-24	5.36	0.81
6	Annual family income	'000' Taka	42-1183	193.72	85.36
7	Income from sugarcane	'000' Taka	30-625	100.57	81.54
8	Farming experience	Years	2-50	27.32	0.96
9	Credit availability	Percentage	0-100	65.46	39.65
10	Input availability	Scores	7-13	8.66	1.72
11	Organizational participation	Scores	0-27	10.37	4.68
12	Extension media	Scores	9-32	18.90	6.32

	contact				
13	Innovativeness	Scores	7-35	22.74	5.29
14	Training exposure	Days	0-100	9.52	11.43
15	Sugarcane cultivation knowledge	Scores	15-46	35.85	4.90

Sugarcane cultivation knowledge

The computed sugarcane cultivation knowledge scores of the farmers ranged from 16 to 50 against the possible range 0 to 50, the mean being 35.85 and standard deviation of 4.90. Based on their sugarcane cultivation knowledge scores, the farmers were classified into three categories as shown in figure 1. Data presented in the Figure 1 indicates that majority (74%) of the farmers had medium sugarcane cultivation knowledge as compared to (16%) high and (10%) low sugarcane cultivation knowledge. From the figure we may conclude that more than eighty percentages (84%) of the farmers had low to medium sugarcane cultivation knowledge.

Table 2. Distribution of the farmers according to their problem faced in sugarcane cultivation

Categories (scores)	Respondents (100)		Mean	SD
	Number	Percent		
Little problem (up to 12)	11	11	19.23	5.76
Moderate problem (13 to 24)	63	63		
Serious problem (above 24)	26	26		
Total	100	100		

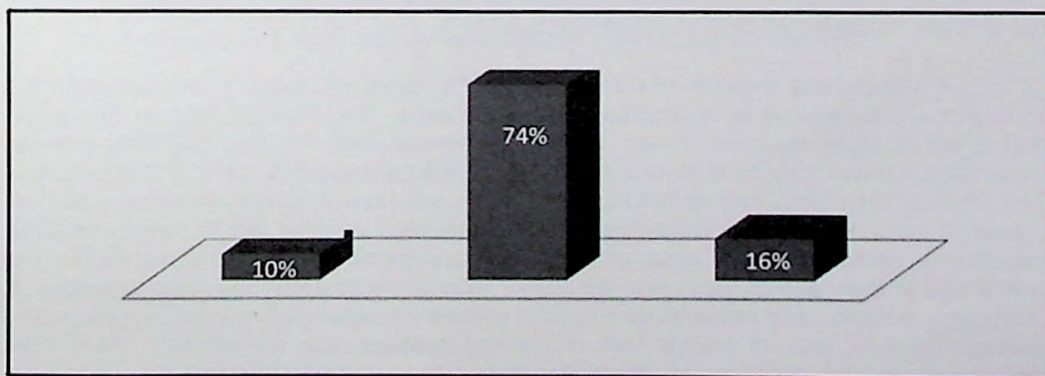


Figure 1. Categories of the respondents according to their sugarcane cultivation knowledge

Computed problem faced in sugarcane cultivation scores ranged from 5 to 42 against the possible scores ranged from 0 to 48 with a mean of 19.23 and standard deviation 5.76. On the basis of problem scores the respondents were classified in to 3 categories according to M.A.K. Bhuyan (2007) as shown in Table 2.

Data presented in Table 2 indicated that all the respondents of the study area faced little to serious problem in sugarcane cultivation. The majority (63%) of the farmers faced moderate problem while 26 percent of the farmers faced serious problem. Comparatively few farmers (11%) faced little problem in sugarcane cultivation. The findings again revealed that an overwhelming majority (89 %) of the farmers faced moderate to serious problem.

Comparative severity among the problems faced by the farmers in sugarcane cultivation

The computed PFI of the 16 problems ranged from 36 to 297 against the possible range on 0 to 300 have been arranged in rank order according to their PFI.

On the basis of PFI, it was observed that shortage & high wages of labour in sugarcane cultivation ranked first in the rank order with highest PFI (297). In Agriculture sector labour decrease day by day and increase labour wages. In sugarcane cultivation requires more labour. For this reason, in Joypurhat Sugar Mills area it is the main problem. High price of inputs (seeds, fertilizer, pesticide & insecticide) ranked second. Now a days in our country pesticide and insecticide price increasing in trend. In Shamim H. (2008) study high price of fertilizers & pesticide got first ranked problem in cultivation of sugarcane. According to Bahgat et al. (2007), shortage and high cost of fertilizers, labor, pesticide and irrigation was the main problem both farmers and extension personnel. Kumer et al. (2014), found that non availability of sufficient finance was the first major problem (ranked as the first) for them followed by other problem such as insufficient water supply, seeds, additional labor, fertilizer, non availability of technical guidance from concerned authority were the main problem among the farmers of the Bhusnoor Sugar Factory's and the Abzalpar Sugar Factory's area faced the first and foremost problem was non availability of additional labor force. These are also similar result of the present study. The Table 3 also reveals that among 16 selected problems purji system of sugar mills ranked at the bottom of the rank order with PFI (36). Now it is time of digitalized and information is available to all, for this reason it is ranked 16 among the problem. Shamim H. (2008) got similar results.

It is found that majority of the farmers (89%) faced moderate to serious problems in sugarcane cultivation at Joypurhat sugar mills area. The findings lead to conclusion that it would have negative impact on the farmers in their farming activities and the sugarcane farmers may be discouraged to continue sugarcane cultivation and production. The findings also indicate that among the sixteen selected problems shortage and high wages of labor ranked first which was followed by high price of inputs (seed, fertilizer, insecticide, pesticide); low price of cane; non availability of fertilizers, pesticide and insecticide in time; insect, pest and diseases; lack of clean seed; low mechanization in plantation, weeding and harvesting; payment system of cane; getting loan; irrigation and drainage system; lack of capital; lack of training facilities; non co-operation from mills; lack of high yielding varieties; adverse climatic condition and difficulty in getting purji from mills. The government and non-government organization working with sugarcane farmers should take necessary measures to mitigate the problems and also to increase their facilities in cane cultivation for better production.

Table 3. Problem faced index (PFI) with rank order

Problems	Number of Respondents (100)				PFI	Rank Order
	Serious Problem	Moderate Problem	Little Problem	No Problem		
Shortage and high wages of labor	97	03	0	0	297	1 st
High price of inputs (seed, fertilizer, pesticide and insecticide)	94	6	0	0	294	2 nd
Low price of sugarcane/sugar	82	18	0	0	282	3 rd
Difficulty of getting fertilizer, pesticide and insecticide in time	73	15	10	2	259	4 th
Insect, pest and diseases	61	24	15	0	246	5 th
Clean seed	48	32	13	7	221	6 th
Low mechanization at plantation, weeding and harvesting of sugarcane	40	33	21	6	207	7 th
Difficulty in payment system of sugar mills	32	39	17	12	191	8 th
Difficulty in getting loan	29	36	28	7	187	9 th
Irrigation and drainage system	21	38	40	1	179	10 th
Shortage of capital	15	44	19	22	152	11 th
Training facilities	7	42	33	18	138	12 th
Non co-operation from sugar mills	1	37	50	11	127	13 th
High yielding varieties	0	35	41	24	111	14 th
Climatic condition	0	28	45	27	101	15 th
Purji system of sugar mills	0	10	16	74	36	16 th

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