

Disposal Pattern of Sugarcane for Gur and Sugar Production in Natore Sugar Mills Zone

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Received on 05.02.2000

ABSTRACT

The present study was conducted during the cropping season 1996-97 among the 60 sugarcane growers and 50 gur makers in the Natore sugar mills area to identify their existing business activities and disposal pattern of sugarcane. The average per ha sugarcane production was found 52.5 tons and the average cost of production was Tk. 32,898.98 per ha on the full cost basis. Total net return was found Tk. 27,682.09 per ha and the benefit- cost ratio was 1.82 only. The gur makers are getting higher return of Tk. 40088.79 per ha from the gur production by using power crushers as compared to Tk. 32774.80 by country crushers. The large farmers supplied less of their product to the mills as compared to other groups and cane sold to the mills by small, medium and large farmers were 68.2, 72.3 and 56.7%, respectively. Among them the large farmers divert maximum quantity of cane to the gur makers and cane sold to the gur makers by small, medium and large farmers were 24.4, 20.0 and 35.8%, respectively.

Key words: Sugarcane, disposal pattern, BCR, cane price, gur production

INTRODUCTION

Sugarcane is an important cash cum industrial field crop to the farmers covering 2.3 percent of the country's total cultivable land (BBS, 1996). Sugarcane ranks second among cash crops and third among the major field crops in the country. A brief characteristic of the sugarcane growers and gur makers in the study area is needed to understand the socio-economic environment under which the study has been undertaken. However, it intends to focus mainly on existing sugarcane production and marketing aspects of cane farmers and gur makers of Natore sugar mills area. In the study area, about 23,000 sugarcane farmers cultivated on an average 8,000 ha of land under sugarcane cultivation annually, out of 19,000 ha potential sugarcane land (Alam, 1997). Natore sugar mills zone comprising an area about 15km radius around the mills. About 60 percent of total cane plantation area are covered under credit programme of the sugar mills. There are also a large number of gur (brown sugar) makers who produce gur by using either country crusher or power crushers. The gur makers usually offer a higher price of cane than that of sugar mills (Alam, 1997). For this reason a significant quantity of cane from the credit farmers are diverted to produce gur in the mills area.

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Bangladesh Gur, Sugar and Sugar Products (Manufactures and Movement) Control Order, 1956, regulates the marketing of sugarcane by demarcating the mills zone area from that of non-mills zone areas in order to ensure supply of sugarcane to sugar factories (Rahman, 1975). The sugar mill is the only buyer of the cane produced in the mills zone and the cane growers are bound to sell their product to the respective mills. But most of the sugar mills in Bangladesh face difficulties in getting enough supply of cane for optimum crushing. It is also observed that the farmers usually divert their cane to the gur makers at a higher price. Natore sugar mills require 2,50,000 tons of cane for full utilization of its crushing capacity during the optimum period of 120 days, while during 1996-1997 the farmers supplied only 1,71,000 tons of sugarcane (Anon, 1996). Enough supply of cane is urgently needed to boost up production of sugar. Thus, the present study was conducted to obtain the farmer's disposal pattern of sugarcane as well as to know the socio-economic characteristics of the sugarcane growers and gur makers in Natore sugar mills area.

MATERIALS AND METHODS

The study was conducted in eight sub- zones of Natore sugar mills area. In the present study, respondent was identified as an individual sugarcane grower and non-producer (gur maker) in the respective study area. To cover the whole mills zone for the purpose of surveys, a representative samples of 60 sugarcane growers and 50 gur makers were selected randomly from 8 sub zone of mills area. After pre-testing, data were collected through personal interview using a schedule during March 15 to April 15, 1997. Frequent visits were made to get required information by interviewing the cane growers and gur makers directly. One of the problems encountered in conducting the survey was that the respondents did not keep in any records of their farming activities. To minimize respondents' memory bias and to ensure a reasonable level of data accuracy, cross-questions were asked and sometimes the sugar mills personnel supplemented it. The schedule was designed for both sugarcane growers and gur makers. In case of sugarcane farmers, related section was designed to obtain the general background information about the respondents, sugarcane production, cost, marketing information and the farmers' disposal pattern of sugarcane. The schedule for gur makers was designed to obtain general background information about the respondents, sugarcane purchase from cane growers, gur production in the mills zone and the price for sugarcane paid by the gur maker during the period 1994-95 to 1996-97 in the study area.

RESULTS AND DISCUSSION

Among the sample farmers, on an average, the large, medium and small farm categories had 5.49, 1.67 and 0.85 ha sugarcane, respectively (Table 1). The literacy rate of the sample farmers were found to be more than 38 percent (Table 2). This level of literacy is comparable to national average. The main occupation of a sample farmer is considered important from which most of the income was earned. Agriculture was found to be the main occupation of 70 percent sample farmers and it was a subsidiary occupation to 30 percent farmers (Table 3).

Table 1. Distribution of sugarcane farms based on farm size.

Farm size (Ha)	Number of farmer	Farm size (Ha)
0-1 (Small)	13	0.85
1.01-2.0 (Medium)	13	1.67
2.01 and above (Large)	34	5.49
All Farm	60	3.66

Table 2. Level of education of sugarcane farmers.

Educational level	Number of Sugarcane Farmers	Percentage
Illiterate	37	61.67
Primary level	6	10.00
Secondary level	10	16.67
Higher Secondary level	5	8.33
Degree and above level	2	3.33
Total	60	100

Table 3. Occupation of sugarcane growers in the study area.

% Distribution of sugar cane growers		
Occupation	% of main occupation	% of subsidiary occupation
Agriculture	70.00	30.00
Service	11.67	0
Business	18.33	16.67
Total	100	46.67

During 1996-97 cropping season, the average per ha sugarcane production was 52.5 t ha^{-1} , cost of production was Tk. 32,898.98 per ha on full cost basis. Total net return was worked out Tk. 27,682.09 per ha and the benefit- cost ratio was 1.84. BCR was almost double to their investment (Table 4). Among the 50 gur makers, 18 of them use country crushers and the rest 32 operate power crushers for gur processing. The respondent gur makers reported that gur making continues in the study area from September 15 to March in every season. On an average, the gur makers can crush 1.1 ton and 3.7 ton cane per day with the country crusher and power crusher (Alam, 1997). Per ha gur production cost was Tk. 68,025.20 and Tk. 60,071.21 by using a country crusher and power crusher respectively (Table 5). The study also revealed that the gur makers got higher returns of Tk. 40,088.79 per ha from gur production by using power crushers as compared to Tk. 32,774.80 by country crushers in the year 1996-97 which was higher than the sugar mills price (Tk. 27682.09/ha). Higher returns from gur production is increasing day by day. This situation encourages them to continue gur production as business in the mills zone violating the Government restrictions. The study also revealed that the gur making is profitable in the mills zone.

Table 4. Per ha cost and return of sugarcane production on full cost basis (1996-97).

Item	Sugar cane		
	Quantity/ha	Cost/Return Tk/ha	% of total cost/return
A. Gross cost		32898.98	100
Human labour			
Family labour	32.7	1308.00	3.98
Hired labour	105.5	4220.00	12.83
Animal Power			
Family supplied	8.3	498.00	1.51
Hired	30.00	1800.00	5.47
Material input cost		11808.28	35.90
Seed	5.59	5617.95	17.08
Urea	235.89	1297.38	3.95
TSP	238.85	1791.37	5.45
MP	107.45	827.33	2.51
Insecticides/Fungicides	4.75	1547.75	4.70
Manure	105.3	526.50	1.60
Irrigation	-	200.00	0.61
Rental value of land	-	12195.00	37.06
Interest on operating capital	-	1069.70	3.25
B. Yield (ton)	-	52.50	-
C. Gross return	-	60581.07	-
D. Net return (C-A)	-	27682.09	-
E. BCR	-	1.84	-

Table 5. Cost and return of gur production (1994-95 to 1996-97)

Year	Cost of gur production Tk /ha		Per ha gur production (ton)	Wholesale price of gur in the open market		Return from per ha of gur production(Tk)	
	Country crusher	Power crusher		(Tk./ton)*	Gross Return (Tk.)	Country Crusher	Power crusher
1996-97	68025.20	60711.21	5.25	19200	100800.00	32774.80	40088.79
1995-96	63996.13	56524.63	5.10	18100	92310.00	28313.87	35785.37
1994-95	54328.73	48796.34	4.85	15300	74205.00	19876.27	25408.66

* Source: Field survey 1997 & District Marketing office, Natore, Directorate of Agricultural Marketing.

Further it was found that the percentage of cane sold to the mill by small, medium and large farmers were 68.2, 72.3 and 56.7, respectively. The large farmers sold less of their product to the mills compared to other group of farmers. The cane sold to the gur makers by small, medium and large farmers were 24.4, 20.0 and 35.8 % respectively. Among them, the large farmers divert large quantity of cane to the gur makers. Gur production (self) by small, medium and large farmers were 2.1, 1.8 and 1.6%, respectively. Among them the small farmers diverted large amount of their product for gur production by themselves. It was also found that the seed requirement by the small, medium and large were 5.3, 5.6 and 5.9, respectively. The large farmers used more seed for plantation (Table 6).

Table 6. Disposal of sugarcane (in ton) according to farm size (1992-93 to 1996-97)

Farm size	Cane supplied		Gur production (Self)	Seed	All farms
	To the mills	to the gur makers			
Small	912.52 (68.2)	326.47 (24.4)	28.09 (2.1)	70.9 (5.3)	1338 (100)
Medium	2255.76 (72.3)	624 (20.0)	530.4 (1.8)	174.72 (5.6)	3120 (100)
Large	5899.64 (56.7)	3724.99 (35.8)	1664.8 (1.6)	613.90 (5.9)	10,405.0 (100)
All	8694.86 (58.5)	5098.01 (34.3)	222.95 (1.5)	847.19 (5.7)	14,863 (100)

(Figures in the parenthesis indicate percentage)

It was found that sugarcane farmers faced manifold problems regarding supplying of cane to the mills such as supply of insufficient "purjee", delaying in payment, high transport cost, defective weighing machine and lower price of cane. It was reported that 60 percent small, 56 percent medium and 49 percent large farmers received insufficient number of "purjee"(supply order) for the supply of cane to the mills. Fifty five percent farmers told that they obtained insufficient number of purjees for the supply of cane to the mills, 48 percent of the farmers complained for late cane price payment. Fifty percent of the farmers opined that high transport cost was a major problem for supplying cane to the mills. Most of the farmers (84 percent) reported that defective weighing machine was one of the major problem to supply cane to the mills. The existing low price of cane as fixed by the authority influences 96 percent farmers to divert their cane to gur makers at higher price (Table 7). These are the prime reasons that forced the growers to sell their cane to gur makers. In order to reduce these problems, the respondents suggested various measures. All the respondent of the farmers advocated that the existing crushing capacity of the mills should be increased. Ninety percent of cane growers suggested that the cane produced in the mills zone should be procured within 90 days instead of existing 120 days. It was suggested by 96 percent farmers that existing cane price should be increased and 60 percent of the farmers recommended that sufficient "purjee" to be supplied to the cane growers by the mills. Again all the studied farmers advocated that sufficient found should be provided regularly by the mills for payment of cane price and fair weight of supplied cane at the purchasing center's should be ensured (Table 8).

Table 7. Problems encountered by the farmers during supply of cane to the mills

Problems	% of respondent			
	Small	Medium	Large	All farms
1. Supply of insufficient purjee	60	56	49	55
2. Delay in payment of cane price	58	46	40	48
3. High transport cost	55	49	46	50
4. Defective weighing machine	86	82	84	84
5. Relative low price of cane compared to high price offered by the gur maker	98	96	94	96

Table 8. Measures suggested by cane growers.

Suggestions	% of respondent			
	Small	Medium	Large	All farms
1. To increase the crushing capacity of the mill	100	100	100	100
2. To get all the cane from the mill areas within three months.	87	89	94	90
3. To increase the price of sugarcane	98	96	94	96
4. Sufficient purjee have to be supplied to the cane growers	68	58	54	60
5. Sufficient money have to be supplied for the payment of dues (cane price)	100	100	100	100
6. Installation of accurate balance	100	100	100	100

REFERENCES

- Alam, M.M 1997 Sugarcane pricing and it impact on sugarcane production in some selected areas of Bangladesh, M.S. Thesis, Department of Agricultural Economics, IPISA, Gazipur, Bangladesh. pp.49-69
- Anonymous, 1996. Performance report of Natore Sugar Mills, 1996. pp.15-17
- BBS, 1996, Statistical Year Book of Bangladesh, Bangladesh Bureau of Statistics, Dhaka, Bangladesh. p. 29
- Rahman, P.M.M, 1975. An econometric analysis of production and consumption of sugarcane. M. Phil (statistics) thesis, Institute of Statistical Research and Training, Dhaka University. Bangladesh. pp.42-45