

SOCIO- ECONOMIC IMPACT OF SUBSIDY IN SUGARCANE AND BENEFICIARIES APPRAISAL: A CASE STUDY OF A SUGAR MILLS OF BANGLADESH

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ABSTRACT

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The economy of North Bengal revolves round the sugar mills. The crux attempt of the study was to dig out the socio-economic impact of subsidy for the beneficiaries as well as sugar mills and to assess the beneficiaries' appraisal about the subsidy in sugarcane. Data were collected from both primary and secondary sources. Due to subsidy cane yield was increased by 18.47 t/ha and found that due to subsidy additional 978.91 ton sugarcane were produced. Thus additional return from those were taken about 1.3 million among the respondents and total extra money flow was taken 1.7 million. Data also expressed that the sugar mills received a total benefit of Tk. 2.84 million, 125.37 million, 205.10 million and 188.55 million during 2003-04, 2004-05, 2005-06 and 2006-07 cropping year respectively. Beneficiaries' appraisal were evaluated and ranked as per weight. Top three responses were as 'it should be continued'; 'subsidy is a motivation tool for STP' and 'it should be distributed during Sept-Oct'.

Key words: Subsidy, sugarcane, Beneficiaries appraisal

INTRODUCTION

Sugar industry lays an immense importance in agro-based economy of Bangladesh. Sugar cane, the only raw material of this industry is the main cash-crop of north Bengal of our country. Sugar cane industry is contributing importantly in building roads and developing physical infrastructure in rural areas, generating employments along with developing socio- economic conditions. Many industries can be formed by using various by-products of Sugar industry like as molasses, bagasse etc. Molasses are used to produce alcohols in distilleries, spirits, vinegar, citric acid, lactic acid, yeast, bio- ethanol etc. At the same time, it is a quality fodder also. Another by-product of this industry is press- mud.

Thakurgaon sugar mill was established in 1958 at the underprivileged Thakurgaon by the former EPIDC considering the urgency of Sugar industry.

The sugar mills had daily crushing capacity of 1000 tons and annual sugar production capacity of 10,000 tons at the time of installation. From 1966- 67 seasons, the daily crushing capacity was increased to 1524 metric tons and yearly sugar production capacity to 15240 metric tons. Nearly 1017-man power is directly engaged here. In this mills zone, about 30,000 families cultivate sugar cane where as a huge number of farm laborers are involved in cane culture, harvesting and transportation. The economy of such locality revolves round the sugar mills indeed.

Paying subsidy to the farmers is a great social welfare activity of the Government. Almost all the developed countries including USA, EU and developing countries pay subsidy on agriculture either directly as cash incentive or on agricultural production inputs. Subsidy on agricultural input is now treated as social investment as it can boost agricultural production. However, developing countries are assured to pay subsidy upto 10% of its GDP and LDCs have no such obligations as per WTO rules of business.

Economy of Bangladesh depends mainly on its agriculture. About 66.18 percent farm families of the country depend on farming businesses which influences their lives each year (BBS, 2003). Agriculture sector is contributing 23.5 percent GDP to the national economy (BBS, 2003). Among this 5.52 percent GDP is coming from crop sub-sector of which 0.74% is from sugarcane (Pal *et al.*, 2003). Sugarcane is an industrial crop which is contributing more than 15 billion taka to the national economy. It is the most important cash-cum industrial crop of northern and north-western part of the country. About 0.17 million hectare land is utilized for the crop of which 0.086 million hectare in sugar mill zone and 0.084 million hectare in non-mill zone. About 0.6 million farmers depend directly on sugarcane (Pal, *et al.* 2005). But the Socio-economic conditions of these farm families are not satisfactory. Because sugarcane is a long durational (12-18 month) crop and its production cost is much higher than many other crops. Per hectare cost of production of sugarcane is taken 55 thousand (Rahman *et al.* 2005). The major cost involved in inputs like seed (11.44%), fertilizer (10.58%), pesticide (3.40%),

irrigation (1.90%) and transport for cane supply to the mills 8.79% for sugarcane production (Alam and Pal, 2006; Alam *et al*, 2007). Under the present socio-economic condition sugarcane farmers can not pay all these inputs correctly which results ultimate decreasing in sugarcane production. Thus decreasing yield makes the crop unprofitable which ultimately hampers the production of sugar and gur. Hence, it is necessary to subsidize the production cost of sugarcane for its survival.

Government of Bangladesh decided to pay subsidy to the sugarcane farmers since 2003-04 considering the poor conditions of the farmers and vulnerability of frequent natural disaster. With the increasing rate of production cost of sugarcane, authorities has increased the payable amount of subsidy per hectare and also extended the area of payments. Earlier, the farmers received only Tk. 1740.00 per acre if he/she produced any one of six selected varieties and followed the plantation method of Spaced Transplanting Technology (STP). From the year (2005-06) the amount and the number of selected varieties were increased from Tk. 1740.00 to 2500.00 and from six varieties to ten varieties. Moreover, it has included intercrop, seed plot and ratoon technologies within the subsidy program. From the year 2006-07, the amount and the number of selected varieties were further increased from Tk. 2500.00 to 3000.00 and they have included intercrop, seed plot and methodological ratoon technologies within the subsidy programme. Thus this study was undertaken to ascertain the farmers' response on subsidy and its impact on their socio-economic conditions.

Table 1. The land area cultivated and no. of farmers in mills zones during the last five years

Year of plantation	Land area(hectres)	Number of farmer
2003-04	10005	9800
2004-05	9685	8775
2005-06	12538	10500
2006-07	13000	9700
2007-08	9320	8500

Table 2. Five Years Production Statement

Serial No.	Description	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
a)	Duration of Crushing (days)	89	62	89	132	118	74
b)	Sugarcane Crushing (M. ton)						
	Target	175000	150000	95000	135000	155000	100000
	Achieved	109000	77595	111746	164160	153260	
c)	Sugar Production (M. ton)						
	Target	12688	11700	7078	9990	11238	7250
	Achieved	7681	5523	7904	10957	10040	
D)	Recovery %						
	Target	7.25	7.80	7.45	7.40	7.25	7.25
	Achieved	7.03	7.116	7.076	6.676	6.55	-

METHODOLOGY

For this study, Thakurgaon Sugar Mills area was purposively selected to ascertain the impact of subsidy on socio-economic condition of farmers during April 2008. Data were collected from both primary and secondary sources. A pre structured questionnaire was used to collect information regarding beneficiaries' appraisal about subsidy. Other data were collected from sugar mills record and analyzed after that. Descriptive statistics were employed to analyze the data of the study.

RESULTS AND DISCUSSION

It was found that subsidy was paid to the all kind of farmers from illiterate to highly educated; marginal land holder to big farmers and poor farmers to rich farmers including all the sub zones of the sugar mills. It helped to increase the yield of sugarcane by 18.47 t ha⁻¹ among the 143 respondents (Table 3). Average yield of sugarcane with and without subsidy were 60.46 t ha⁻¹ and 41.99 t ha⁻¹ respectively. The additional production of sugarcane due to subsidy was 978.91 ton from the subsidized 44.0 ha of land. Although the total land areas of the respondents were 344.90 ha but they received subsidy only on 53.0 ha, because of its condition. Additional

return from additional production was Tk. 13, 99841.30 and total amount of money received as subsidy was Tk. 377155.0. Thus the total extra flow of money was taka 1776996.30. This additional money flow helped them positively in their farming business as well as to sustain their livelihood.

Table 3. Effect of subsidy on beneficiaries' economy

No. of respondents	Total area of land (ha)	Land occupied in subsidy (ha)	Total amount of money received as subsidy (Tk)	Yield sugarcane in subsidy plot (t ha ⁻¹)	Yield of sugarcane in other plot (t ha ⁻¹)	Yield increased (t ha ⁻¹)	Additional cane production from subsidy plot (Ton)	Additional return from subsidy plot (Tk)	Total extra money flow (Tk) (column 4+9)
1	2	3	4	5	6	7	8	9	10
143	555.70	53	377155.00	60.46	41.99	18.47	978.91	1399841.30	1776996.30

Benefit accrued by the sugar mills was also identified and presented in Table 4. It is clear that Thakurgaon Sugar mills was able to produce additional sugar on an average of taka 17,884823 by distributing average amount of taka 3530609 during the cropping year 2003-04, 2004-05, 2005-06 and 2006-07. Thus the average national benefit of those 4 years was taka 13686234. This was due to an average extra production of 13.39 t ha⁻¹ of those 4 years. Thus an average of 9883.09 ton cane was produced as extra which worth Taka 13570382 (as the price of cane Tk. 1328.35 per ton). All the canes of subsidy plots were supplied to the mills. Thus from the mean additional 9883.09 ton sugarcane a mean additional 663.04 ton sugar were produced. The market price of 663.04 ton sugar was taka 17884823. The achievements of subsidy were 174.61, 413.94, 932.65 and 1302.59 hectare during 2003-04, 2004-05, 2005-06 and 2006-07 respectively. Thus the trends of total benefits were also very positive which were Tk. 28,41,293, Tk. 1,25,37,491.0, 2,05,10,191.0 and Tk. 1,88,55,960.0 respectively.

Table 4. Total Benefits of Thakurgaon Sugar mills due to subsidy in sugarcane

Production Season	2003-04	2004-05	2005-06	2006-07	Mean
Sugarcane yield in subsidized plot (t ha ⁻¹)	44.46	62.94	62.49	60.46	57.5875
Sugarcane yield in non-subsidized plot (t ha ⁻¹)	35.70	46.64	46.60	47.86	44.2
Additional yield (t ha ⁻¹)	8.76	16.30	15.89	12.62	13.39
Land area where subsidy was given (Hectare)	174.61	413.94	932.65	1302.59	705.9475
Total additional sugarcane production (ton)	1529.58	6744.28	14819.80	16438.68	9883.09
Mill price of sugarcane (ton)	1254.70	1254.70	1355.10	1448.90	1328.35
Price of additional sugarcane (Tk.)	1919164.02	8462048.11	20082310.98	2,38,18,003.45	13570382
Recovery (%)	7.116	7.076	6.676	6.55	6.8545
Additional sugar yield from additional sugarcane (ton)	108.84	477.22	989.36	1076.73	663.04
Price of sugar (ton\ Tk)	33,000	30,000	27,000	25,000	28750
Market price of additional sugar (Tk.)	35,91,720	1,43,16,600	2,67,12,720	2,69,18,250	17884823
Amount of subsidy given (Tk.)	7,50,427	17,79,109	62,02,529	80,62,290	3530609
Total National benefit (Tk.)	28,41,293	1,25,37,491	2,05,10,191	1,88,55,960	13686234

Source: Department of Agriculture, Thakurgaon sugar mills

Recording beneficiaries' appraisals were also the major scope of the study and were collected through an open questionnaire. Beneficiaries' appraisal were arranged and ranked as per total weight, which were presented in Table 5.

Table 5. Beneficiaries' appraisal

	Topic	Total weight	Rank
1.	Subsidy helps to purchase production inputs	14	13
2.	Subsidy enhances intercropping	32	9
3.	Subsidy is a motivation tool for STP	54	2
4.	Subsidy helps to increase production per hectare	47	4
5.	Net benefit helps to sustain livelihood	45	5
6.	It should be continued	70	1
7.	It should be distributed during Sept-Oct.	48	3
8.	Training program should be arranged regularly	40	6
9.	Maximum STP cultivating farmers should be selected and awarded with subsidy	20	10
10.	Best plots of conventional plantation should be included in subsidy	35	8
11.	Amount of subsidy is inadequate	39	7
12.	Irrigation, early plantation etc. should be included as different items in subsidy	18	11
13.	Authorities should be alert for selecting the farmers for subsidy	8	14
14.	All the farmers should be included in this program	15	12
15.	Subsidy can be treated as a big-business of the Govt.	7	15

It was found from the Table 5 that 'it should be continued' ranked top of the list with a total weight of 70. 'Subsidy is a motivation tool for STP' and 'it should be distributed during Sept-Oct' ranked 2nd and 3rd with the total score weight of 54 and 48 respectively. Weight of 47 was received by 'subsidy helps to increase production per hectare' was ranked 4. Other responses were as follows: net benefit helps to sustain livelihood (weight 45, rank 5); training program should be arranged regularly (weight 40, rank 6); amount of subsidy is inadequate (weight 39, rank 7); best plots of conventional plantation should be included in subsidy (weight 35, rank 8); subsidy enhances intercropping (weight 32, rank 9); maximum STP cultivating farmers should be selected and awarded with subsidy (weight 20, rank 10); irrigation, early plantation etc. should be included as different items in subsidy (weight 18, rank 11); all the farmers should be included in this program (weight 15, rank 12); subsidy helps to purchase production inputs (weight 14, rank 13); authorities should be alert for selecting the farmers for subsidy (weight 8, rank 14); subsidy can be treated as a big-business of the Govt. (weight 7, rank 15).

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