

Economics of Subsidy Used for Sugarcane Production in Mills Zones of Bangladesh

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ABSTRACT

The present study aimed to assess the impact of on going subsidy programme in the mills zones using secondary data from 2003-04 to 2005-06 with a view to help the policy makers and stakeholders in formulating future strategies for augmenting sugarcane and sugar production in Bangladesh. Due to subsidy, sugarcane yield in the mills zones were 61.76, 64.33 and 67.45 t ha⁻¹ in 2003-04, 2004-05 and 2005-06 cropping year respectively. On the other hand, without subsidy it were 46.19, 47.62 and 46.93 t ha⁻¹ during the aforementioned time respectively. Increased net incomes due to subsidy were Tk.14255.00, Tk.17206.00 and Tk. 19954.50 ha⁻¹ respectively. Due to subsidy programme additional sugar productions were 1385.43, 5881.85 and 10847.00 ton respectively. Market price of the production was in total of Tk. 617.48 million. Benefit cost ratio of sugarcane production under subsidy programme during the time were 4.28, 5.08 and 3.51 respectively. Additional sugar productions due to subsidy programme are saving our hardcore foreign exchange because domestically we are not self-sufficient in sugar production.

Key words : Net return, sugarcane, subsidy, sugar, yield.

INTRODUCTION

Sugarcane is the most important cash cum industrial crop in Bangladesh. Due to extension policy of department of agricultural extension (DAE), sugarcane crop is less cared and less subsidized among other agricultural crops like rice, wheat, and pulses. The domestic cost of production of agricultural commodities in Bangladesh is the highest in the world. Higher input price as fertilizer, seed, fuel for irrigation, pesticides etc. with lower output price in the market reduces profitability of agricultural production. Per hectare production cost of sugarcane is the highest (Tk. 51,236.95) among other crops in Bangladesh. The shares of cost of major inputs for sugarcane production in the mills zones are seed (11.44%), fertilizer (12.58%), pesticide (3.40%), irrigation (1.90%), and transport for cane supply to the mills (8.79%) (Kabir and Alam, 2000). On other hand, different studies (Anon, 1984,1986) showed that proper application of these inputs contribute significantly to increase sugarcane production as good seed contribute 10-12%, recommended fertilizer 40-50%, pesticides 20-25%, and different level of irrigation 30-40% for sugarcane yield advantage. It is very difficult for the poor sugarcane farmers to bear all the production cost from their own. Hence, they naturally use less input than required for sugarcane production and reap very low output.

Subsidy on agriculture first introduced worldwide after the Second World War to meet up the deficit of food grains in that time. However, still the developed countries providing huge amount of subsidy for the development of agriculture sector. But they are creating continuous pressure and imposing conditions for providing loan/grants to the developing countries on the

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issue of withdrawing subsidy from agriculture. In EU, 67 per cent of sugar production cost is borne by the EU where as in USA 50 per cent of sugar production cost is borne by miller/planter and 50 percent by the government. Due to the continuous pressure of donor agencies Bangladesh government decided to withdraw subsidy from agriculture in 1992. But later on, considering the poor conditions of the farmers and vulnerability of frequent natural disaster of agriculture government ignoring the pressure of donor agencies again decided to continue subsidy on agriculture in 2001. Noteworthy, in the mid- 1980s the government substantially reduced subsidies on fertilizer and irrigation which led to drastic reduction in the share of crop sector in the development budget. Subsidy for sugarcane production was first introduced in 2003-04 cropping year on STP method of cultivation with the variety of Isd-16, Isd-21, Isd-26, Isd-32, Isd-33 & Isd-34 @ Tk. 4299.54 per hectare in the mills zones. The present study aimed at to help the policy makers and stakeholders in formulating future strategies for augmenting sugarcane and sugar production by assessing the impact of on going subsidy programme for sugarcane production in the mills zones. Salient feature of agricultural subsidy in Bangladesh from 2001-02 to 2007-08 are given in Table 1.

Table 1. Salient feature of agricultural subsidy in Bangladesh.

Financial Year	Amount of subsidy (Tk./Crore)	Area of Subsidy
2001-02	100.00	Irrigation equipment, diesel
2002-03	200.00	Irrigation equipment, diesel and agricultural rehabilitation
2003-04	300.00	Seed, fertilizer, irrigation equipment, diesel, agricultural rehabilitation and STP sugarcane.
2004-05	600.00	Seed, fertilizer, irrigation equipment, diesel, agricultural rehabilitation and STP sugarcane.
2005-06	1100.00	Seed, fertilizer, irrigation equipment, diesel, agricultural rehabilitation and STP sugarcane.
2006-07	1541.00	Seed, fertilizer, irrigation equipment, diesel, agricultural rehabilitation and STP sugarcane.
2007-08	2250.00	Tk. 750.00 crore for diesel, Tk. 1500.00 crore for fertilizer and Tk.350.00 crore for additional research endowment fund.

MATERIALS AND METHODS

The cropping years 2003-04, 2004-05 and 2005-06 were considered for the study. Secondary data was used. Data were collected mainly from BSFIC, BSRI report and other public sources. Descriptive statistics were employed to analyze the data of the study. Net return and BCR were calculated as:

Net return = Additional yield due to subsidy/ha. × Price of sugarcane/ha. – Amount of subsidy/ha.

BCR = Additional sugarcane production due to subsidy × Price of sugarcane ÷ Use of subsidy fund.

RESULTS AND DISCUSSION

It can be seen from Table 2 that in 2003-04 cropping year mean yield of sugarcane with and without subsidy in the mills zones were 61.76 and 46.19 t ha⁻¹ respectively. The additional increase of sugarcane yield due to subsidy was 15.72 t ha⁻¹ and income was Tk. 188562.00 ha⁻¹ on an average. Amount of subsidy per hectare was Tk. 4299.00. Thus increased net income came from subsidy programme was Tk.14263.00 ha⁻¹ on an average.

Table 2. Sugarcane yield and net return with and without subsidy in the sugar mills area in 2003-04 cropping year.

Name of Sugar mills	Without Subsidy Yield (ton/ha) Yield (t ha ⁻¹)	With Subsidy		Benefit from Subsidy			
		Cane cultivation (ha)	Yield (t ha ⁻¹)	Additional yield (t ha ⁻¹)	Additional income (Tk ha ⁻¹)	Subsidy (Tk ha ⁻¹)	Net return (Tk. ha ⁻¹)
PSM	36.97	115.10	46.78	9.81	11566	4299	7267
JSM TSM	44.34	43.30	66.49	22.15	26115	4299	21816
RSM	49.78	53.76	69.20	19.42	22896	4299	18597
NSM SHSM	46.81	24.99	57.19	10.38	12238	4299	7939
NBSM TSM	49.01	20.73	62.57	13.56	15987	4299	11688
MSMZBSM	49.54	163.93	59.80	10.26	12096	4299	7797
KSM	45.70	7.90	70.27	24.57	28968	4299	24669
Others	47.40	794.49	61.76	15.58	18628	4299	14329
Mean	46.19	153.03	61.76	15.72	18562	4299	14263

Source: BSFIC report.

In 2004-05 cropping year mean yield of sugarcane under subsidy programme was 64.33 t ha⁻¹ whereas without subsidy it was only 47.62 t ha⁻¹. Due to subsidy additional increase of sugarcane yield was 15.72 t ha⁻¹ and income was Tk. 21506.00 ha⁻¹ on an average. Amount of subsidy per hectare was Tk. 4299.00. Thus mean increased net income came from subsidy programme was Tk.17206.00 ha⁻¹ (Table 3).

Table 3. Sugarcane yield and net return with and without subsidy in the sugar mills area in 2004-05 cropping year.

Name of Sugar mills	Without Yield (t ha ⁻¹)	With Subsidy		Benefit from Subsidy			
		Cane cultivation (ha)	Yield (t ha ⁻¹)	Additional yield (t ha ⁻¹)	Additional income (Tk ha ⁻¹)	Subsidy (Tk ha ⁻¹)	Net return (Tk. ha ⁻¹)
PSM	43.78	474	55.5	11.76	15128	4299	10828
TSM	41.84	480	69.6	27.76	35710	4299	31410
STSM	43.74	91	57.63	13.89	17868	4299	13568
SHSM	44.11	284	58.98	14.87	19129	4299	14829
JSM	49.49	571	69.93	20.44	26294	4299	21994
ZBSM	49.35	119	70.89	21.54	27709	4299	23409
RSM	53.35	243	72.49	19.14	24622	4299	20322
NTSM	50.65	361	62.96	12.31	15836	4299	11536
NBSM	54.75	187	74.84	20.09	25844	4299	21544
KSM	45.59	190	68.15	22.56	290218	4299	24721
MKSM	53.77	337	74.69	20.92	26911	4299	22611
CAREW	56.48	418	51.35	4.87	6265	4299	1965
FSM	43.86	210	52.19	8.33	10716	4299	6416
PBSM	45.91	118	61.48	15.57	20029	4299	15729
Mean	47.62	349	64.33	16.72	21506	4299	17206

Source: BSFIC report.

According to BSFIC report, in 2005-06 cropping year mean yield of sugarcane in the mills zones under subsidy programme was 67.20 t ha^{-1} whereas without subsidy programme it was 46.93 t ha^{-1} . The additional increase of sugarcane yield due to subsidy was 20.27 t ha^{-1} and income was Tk. 27364.50 ha^{-1} on an average. Amount of subsidy per hectare was Tk. 7410.00. Thus increased net income came from subsidy programme was Tk. 19954.50 ha^{-1} on an average.

Table 4. Progress of subsidy programme from 2003-04 to 2005-06 cropping year.

Year	Target		Achievement (%)		Date of fund release
	Hectare	Crore Tk.	Hectare	Crore Tk.	
2003-04	16187.78	7.00	1224.20 (7.56)	0.53 (7.52)	08/11/2003
2004-05	16187.78	6.96	4807.77 (29.70)	2.07 (29.70)	29/11/2004
2005-06	6529.83	5.65	6529.83 (100)	5.65 (100)	29/02/2006 & 06/06/2006

Source: BSFIC report.

It is clear from the Table 4 that in 2003-04 and 2004-05 cropping years the area under subsidy programme was very much low than target mainly due to delay in fund release. In 2003-04 and 2004-05 cropping years only 7.52 and 29.70 per cent of the targeted fund was possible to disburse among farmers. It slowed down to achieve the target of bringing more area under subsidy programme which were only 7.56 and 29.70 percent respectively in those cropping years respectively. During 2005-06 cropping year government took very positive steps to accelerate this programme may be taken into consideration the previous two years positive results. For this reason in 2005-06 year targeted area to bring under subsidy programme and disbursement of fund among farmers were successful.

Table 5. Additional sugar production and return due to subsidy in the sugar mills.

Cropping Year	Allocated fund (mill. Tk.)	Uses of fund (mill. Tk.)	Additional sugarcane production (ton)	Price of additional sugarcane (mill. Tk.)	BCR	Additional sugar production (ton)	Market price (mill. Tk.)
2003-04	70.00	5.30	19268	22.72	4.28	1385.43	45.03
2004-05	69.60	20.70	81805	105.24	5.08	5881.85	247.03
2005-06	56.47	56.47	152780	198.61	3.51	10847.00	325.42
Total :	196.07	82.47	253853	326.57		7267.28	617.48

Source: BSFIC report.

Table 5 implies that due to subsidy programme additional sugar productions in 2003-04, 2004-05 and 2005-06 cropping years were 1385.43, 5881.85 and 10847.00 ton respectively. Market price of the production in total of Tk. 617.48 million. Additional sugar production due to subsidy programme are saving our hardcore foreign exchange because domestically we are not self-sufficient in sugar production. Every year we have to import sugar to meet up our increased demand. Benefit cost ratio of sugarcane production under subsidy programme in 2003-04, 2004-05 and 2005-06 cropping years were 4.28, 5.08 and 3.51 respectively (Table 5).

A very simple question would raise by policy makers or other stakeholders that how could subsidy increased sugarcane yield. Common assumptions about subsidy is that it benefits the farmers by reducing input cost or keep the input cost affordable. Keeping peace with time BSRI evolved many high yielding varieties which required proper inputs to get maximum yield or benefit from those. But different report showed that sugarcane farmers did not use input properly even many farmers divert the provided input by the respective sugar mills to other crops and thus got very low yield of sugarcane (Anon, 1984,1986). These practises not only reduce over all sugarcane production but also decrease sugar production in Bangladesh. The present on going subsidy programme with close supervision of BSFIC and BSRI ensuring application of inputs for sugarcane production that leads to increase per unit sugarcane yield/production. Alam *et al.* (2006) reported that only proper application of recommended dose of fertilizer would increase sugarcane yield by 64 per cent.

The study uphold that subsidy programme would lead to increase sugarcane yield per unit area and thus to increase sugar production in Bangladesh. Increased sugar production will help to save our hardcore foreign exchange. So government should increase subsidy for sugarcane production and continued the programme.

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