

## A Comparative Analysis of Backward Integration Methods Followed by Co-operative and Private Sugar Factories in North Coastal Zone of Andhra Pradesh

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### ABSTRACT

The sugar industry is the second largest agro based processing industry in India. The present study was carried out to compare and contrast the backward integrations methods adopted by sugar factories under private and cooperative sectors. Total of 60 farmers were selected using probability proportionate sampling method and the primary data was collected with using interview schedule. The results revealed that the private sugar factories are purchasing the sugar cane from the contract farmers and whenever they need extra sugarcane they purchase from the non- contract farmers also. The farmer's satisfaction was poor regarding cooperative sugar factories. The study suggested that the cooperative sugar factories should purchase cane from non-shareholders also.

**Keywords:** *Backward integration, Contract farmer, Sugarcane and Sugar factory.*

India is the largest producer and consumer of sugar in the world. Indian sugar industry, the second largest agro based processing industry after the cotton textiles industry in the country, has a lion's share in acceleration industrialization process and bringing socio-economic changes in under developed rural areas (Sathya, 2016). Sugarcane is the most important cash crop, almost six million farmers were grown in India (Mishra *et al.*, 2019). In India 747 sugar mills were installed, in which 329 mills are co-operative sector, 43 in public and 375 mills in private sector. These Indian Sugar companies apart from manufacturing sugar and power, it is also manufacturing bio-ethanol, bio-manure and chemicals. These totally contribute about one per cent to our National GDP.

Sugarcane cultivated farmers from north coastal zone are linked with sugarcane industries,

operating under organized cooperative and private sectors nearer to rural areas. Even so sugarcane industries are facing problems from both industry and farmer side like shortage of labour, high cost of production, low rate of sugar recovery, low yield of sugarcane, short crushing season, fluctuating production trends, faulty government policy, de-reservation of cane area etc., which were fully or partially impacting the viability of sugar industries.

Sugar prices falling for a couple of years in a row while sugarcane prices moving up over the last few years, has put the industry in serious problems. One of the main problems that the sugar sector faces is delay in payments by sugar mills to sugarcane farmers. The purchase system in sugar industry of NC Zone is manual. In view of the above problems, the present study was undertaken with following objectives:

1. To identify methods of backward integrations adopted by cooperative sugar factories.
2. To identify methods of backward integrations adopted by private sugar factories.
3. To compare and contrast the methods of backward integrations adopted by Cooperative and Private sugar factories.

### MATERIAL AND METHODS

In Andhra Pradesh North Coastal Zone was selected based on highest area under sugarcane cultivation. In North Coastal Zone, one each for cooperative sector and private sector were selected based on highest turnover. A total of 60 respondents were selected comprising 30 from each factory. Descriptive statistics were used for analysis.

### RESULTS AND DISCUSSION

#### Methods of backward integrations adopted by The Chodavaram Cooperative Sugars Limited, Govada, Visakhapatnam.

The purchase system in The Chodavaram co-operative sugars Limited, Govada is manual as they are purchasing the cane from shareholder farmers only. In this factory Cane Development Council (CDC) was formed, through which the factory supplied seed, fertilizers and pesticides to shareholders only.

A perusal of Table 1 shows that the factory buys cane from shareholders only. The factory follows online mode of payment, they were provided with seed up to 66.67 per cent farmers and remaining farmers purchased seed from other sources. Nearly 80 per cent of farmers were provided with fertilizers and plant protection chemicals by the factory and remaining 20 per cent farmers purchased from the market. The factory employees provide 100 per cent technical guidance to farmers. The factory did not provide any credit facilities and mechanical harvesters

to shareholders. They provide transportation facilities to farmers up to 66.67%. The 33.33 per cent shareholder farmers were satisfied with the facilities provided by the company and remaining 66.67 per cent farmers were not satisfied. Siddeswari *et al.* (2016) reported that majority of the sugarcane growers had poor adoption level about mechanization in sugarcane cultivation in Chittoor district of Andhra Pradesh. Results from present study reveals that mechanisation in sugarcane was at very low level.

#### Methods of backward integrations adopted by EID Parry(India) Ltd., Sankili, Srikakulam.

The Purchase system in EID Parry (India) Ltd., Sankili is manual as they are purchasing the sugar cane from the contract farmers and whenever they need extra sugar cane they purchase from the non-contract farmers from other districts through middlemen. The factory bears transportation costs about 100 per cent.

Table 2 reveals that about 66.67 per cent farmers followed contract farming and cane was purchased from those farmers directly and payment was done online within 15 days from crushing date. Remaining 33.33 per cent farmers did not followed contract farming, they sold their cane through middlemen and they received money directly from middlemen. These 33.33 per cent non-contractual farmers were from V.V.Ramana sugar factory, Thumpala, Visakhapatnam (which was closed). The factory supplied seed upto 66.67 per cent farmers and supplied fertilizers and chemicals upto 43.33 per cent farmers those are contract farmers only. Factory provided two mechanical harvesters covering about 33.33 per cent farmers. About 53.33 per cent of contract farmers were satisfied with the facilities provided by the EID Parry (India) Ltd., Sankili. Rout *et al.* (2013) stated that the sugar factories provided

**Table 1. Methods of backward integrations adopted by the Chodavaram Co-operative Sugars Ltd., Govada.**

S.No	Type of Integration	Integrated farmers (%)	Non-integrated farmers (%)
1	Contract farming	100.00	0.00
2	Online payment	100.00	0.00
3	Supply of Seed	66.67	33.33
4	Fertilizer/Pesticides	80.00	20.00
5	Technical Guidance	100.00	0.00
6	Credit facilities	0.00	100.00
7	Mechanical Harvesters	0.00	100.00
8	Transportation	66.67	33.33
9	Shareholder Satisfaction	33.33	66.67
10	Purchasing Directly	100.00	0.00

**Table 2. Methods of backward integrations adopted by EID Parry(India) Ltd., Sankili.**

S.No	Type of Integration	Integrated farmers (%)	Non-integrated farmers (%)
1	Contract farming	66.67	33.33
2	Online payment	66.67	33.33
3	Seed Supply	66.67	33.33
4	Fertilizer/Pesticides	43.33	56.67
5	Technical Guidance	60.00	40.00
6	Credit facilities	40.00	60.00
7	Mechanical Harvesters	33.33	66.67
8	Transportation	100.00	0.00
9	Satisfaction	53.33	46.67
10	Purchasing Directly	66.67	33.33

**Table 3. Methods of backward integrations adopted by sugar industry in North Coastal Zone of Andhra Pradesh**

S.No	Type of Integration	Integrated farmers (%)		Non-integrated farmers (%)	
		Cooperative sugars	Private Sugars	Cooperative sugars	Private Sugars
1	Contract farming	100.00	66.67	0.00	33.33
2	Online payment	100.00	66.67	0.00	33.33
3	Seed Supply	66.67	66.67	33.33	33.33
4	Fertilizer/Pesticides	80.00	43.33	20.00	56.67
5	Technical Guidance	100.00	60.00	0.00	40.00
6	Credit facilities	0.00	40.00	100.00	60.00
7	Mechanical Harvesters	0.00	33.33	100.00	66.67
8	Transportation	66.67	100.00	33.33	0.00
9	Satisfaction	33.33	53.33	66.67	46.67
10	Purchasing Directly	100.00	66.67	0.00	33.33

the inputs such as seeds, fertilizers etc., to the farmers without cash from the farmers and these costs were deducted at the time of final payment.

**To compare and contrast the methods of backward integrations adopted by Cooperative and Private sugar factories.**

A perusal of Table 3 reveals that cooperatives follow 100 per cent contract farming and purchase cane directly from shareholders only and make payments to farmers through online. Whereas under private sugar factories 66.67 per cent farmers were followed contract farming and remaining farmers were not followed contract farming. The private sugar factories purchase cane directly from contract farmer's payment through online. Non-contract farmers sold their cane through middlemen and they received money directly from middlemen. Cooperative sugar factory supplied seed upto 66.67 percent shareholder farmers and remaining farmers were purchase seed from other sources. Whereas the private sugar factory supplied seed to contract farmers and non-contract farmers were purchase seed from other sources. The cooperative sugar factory supplied fertilizers and pesticides upto 80 per cent farmers, though the private sugar factories supplied fertilizers and pesticides upto 43.33 per cent farmers and remaining farmers were purchased from the market. Through the field men, the sugar cooperative delivered technical guidance to all shareholder farmers. Whereas private sugar factory provided technical guidance upto 60 per cent farmers only. The private sugar factory provided credit facilities upto 40 per cent farmers and provided two mechanical harvesters covering about 33.33 per cent farmers. Whereas the cooperatives did not provide any credit facilities and mechanical harvesters to shareholders. They provide transportation facilities to farmers up to 66.67 per cent though the private sugar

factory provided transportation facilities to all the cane suppliers. The 33.33 per cent shareholder farmers were satisfied with the facilities provided by the cooperatives, whereas 53.33 per cent of contract farmers were satisfied with the facilities provided by the private sugar factory. Sugar factories directly purchased cane from shareholder farmers and the extra sugarcane if needed would be purchased from the non-shareholder farmers or from the other states (Hagargi, 2018).

**CONCLUSION**

The farmers under the Chodavaram Cooperative Sugars Limited followed contract farming only, Cane Development Council was formed, through which farmers were getting seed, fertilizers and pesticides. Technical guidance was given by field men and cane was directly purchased from shareholders and payment made through online. The EID Parry(India) Ltd., Sankili purchased sugar cane from the contract farmers and whenever they need extra sugar cane they purchased from the non-contract farmers from other districts through middlemen. The factory bears transportation costs 100 per cent and factory provides two mechanical harvesters for harvesting of sugarcane to contract farmers and provide credit facilities upto 40 per cent.

**SUGGESTIONS**

1. The sugar factories should provide adequate facilities like seed, fertilizer and harvesting machines to sugarcane growers in order to continue the sugarcane cultivation.
2. The sugar factories should make regular in payments to cane growers.
3. The private sugar factories should purchase cane directly from non-contract farmers in order to avoid middleman.

**LITERATURE CITED**

- Hagargi A K S 2018** Sugar cane purchase pattern from cane growers in Karnataka state: a case study of BSSK Ltd, Hallikhed. *Global Journal of Commerce and Management Perspective*, 7 (1): 29-38.
- Mishra V, Ganjeer P K, Sinha H K and Shukla S 2019** Estimated models for the area, production and yield of sugarcane in Mahasamund district of Chhattisgarh. *Andhra Agricultural Journal*, 66 (spl): 92-95.
- Rout R K, Mishra R K, Bar N and Mondal D 2013** Farmers perception on contract farming of sugarcane in Orissa: A village level study. *Economic Affairs*, 58(4): 367-371.
- Sathya S 2016** A study on financial performance of selected companies in sugar industry, India. *International Journal of Multidisciplinary Research and Development*, 3(2): 328-332.
- Siddeswari G K, Lakshmi T and Prasad S V 2016** Adoption dynamics of improved sugarcane cultivation in Chittoor district of Andhra Pradesh. *Andhra Agricultural Journal*, 63 (1): 230-234.

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