

## CONTRACT FARMING IN SUGARCANE CULTIVATION AND DEVELOPMENTS OF THE GROWERS

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### ABSTRACT

The contracting sugar industries in Odisha are continuously providing technical expertise, proper guidance, close monitoring, supplying crop inputs and procuring produce with remunerative price benefitting both the contracting firms and contracted growers. A study conducted with 80 each of contracted and non-contracted growers revealed that there were no significant developments of the contracted growers in sugarcane cultivation under contract farming. Poor responses were observed towards developments on technological, economical, material possession and farm activities in comparison to socio-cultural aspects. The contracting sugar industry officials essentially need to enrich the knowledge and skill competency of the sugarcane growers along with liaoning with credit institutions for financial support and input dealers for timely supply of additional quality inputs enabling the growers for better crop management accelerating production and income leading to their developments.

**KEYWORDS:** Contract Farming, Sugarcane, Developments, Farmers

### INTRODUCTION

Contract farming appears to be promising institutional arrangements to facilitate access of the farmers to an array of agricultural services. It enhances the agricultural productivity and efficiency of the poor farmers by introducing improved farm practices through provision of inputs, transportation, extension services and most importantly access to the reliable markets (Patrick, 2004). It also brings investment and technical expertise to rural areas, facilitates cross-border quality control and contributes to employment as well as sustainable cooperation in the region (Hoffler, 2006). Contract farming system also facilitates cooperation from subsistence production to commercial production, value addition to primary product and crop diversification through transition from conventional low cash crops to high value crops (Kumar and Baba, 2007).

The sponsoring firms take care for the profitable market, physical and social environment, facilitate Government support for infrastructure developments and provides guaranteed as well as regular income (Tatlidil and Akturk, 2004). It also protect the environment with ecological considerations combined with sound agricultural practices (Rausser and Simon, 2001). The contracting sugar industries in Odisha are continuously providing technical expertise, proper guidance, close monitoring, crop inputs and procured with remunerative price. A study therefore designed for a comparative analysis

towards developments of the contracted and non-contracted sugarcane growers under contract farming.

## RESEARCH METHODOLOGY

Nayagarh Sugar Complex Ltd. has introduced contract farming in the districts of Nayagarh, Khurda, Puri and Jagatsinghpur district in Odisha. A sample of 80 each contracted and non-contracted sugarcane farmers from Nayagarh and Odogaon blocks in Nayagarh district were selected randomly as the respondents for the study. The data was collected personally through a semi-structured schedule on various aspects of developments. Information collected on scale point of strongly agree, agree and disagree were analyzed with score value of 3, 2 and 1 respectively. The statistical tools such as meanscore, gap percentage, and critical ratio test and path analysis were employed to reveal the results.

## RESULTS AND DISCUSSIONS

Contract farming facilitates exposure of the farmers to latest technology and develop skill competency in best use of the technologies ensuring desired and quality production. It is observed (Table-1) that there was not much of differences in the

**Table 1: Extent of Technological Developments**

S. No.	Development	Mean Score		Diff. (%)	Pooled Mean Score (n = 160)	Gap (%)
		Contracted Farmers (n = 80)	Non-Contracted Farmers (n = 80)			
1.	Knowledge acquired	1.90	1.65	13.16	1.78	40.67
2.	Skill competency developed	1.93	1.63	15.54	1.78	40.67
3.	Permanency in information flow	1.73	1.50	13.29	1.62	46.00
4.	Better input management	1.73	1.48	14.45	1.61	46.33
5.	Pests and diseases management	1.70	1.46	14.12	1.58	47.33
6.	Use of farm implements	1.50	1.38	8.00	1.44	52.00
7.	Adoption of recommended practices	1.95	1.83	6.15	1.89	37.00

(Maximum Obtainable Score – 3)

Technological developments between the contracted and non-contracted respondents. Poor developments were also observed on all the technological aspects mentioned in the table. Although; contracted respondents had little developments on knowledge acquired, skill competency developed, permanency in information flow, better input management, pests and diseases management in comparison to non-contracted respondents, but contract farming had not exhibited significant technological developments on sugarcane cultivation.

**Table 2: Extent of Economic Developments**

S. No.	Development	Mean Score		Diff. (%)	Pooled Mean Score (n = 160)	Gap (%)
		Contracted Farmers (n = 80)	Non-Contracted Farmers (n = 80)			
1.	Income generated	2.35	2.08	11.49	2.22	26.67
2.	Employment generated	1.50	1.45	3.33	1.48	50.67
3.	Dependability minimized	1.45	1.36	6.21	1.41	53.00
4.	Regular cash availability	1.43	1.38	3.50	1.41	53.00
5.	Increase in savings	1.99	1.86	6.53	1.93	35.67
6.	Family business increased	1.64	1.53	6.71	1.59	47.00
7.	Easy access to credit	2.09	1.71	18.18	1.90	49.00

(Maximum obtainable score – 3)

Well Management contract farming is an effective way to coordinate and promote production as well as marketing of the produce. It also reduces risks and uncertainty for disposal of the produce in the open market and contributes towards increased income to the contracted growers. But, the study revealed (Table-2) that both the contracted and non-contracted respondents were almost of similar opinion. It indicates that contract farming system had not exhibited significant economic developments particularly on employment generation, regular cash availability and increase in family business, minimization of dependability as well as increase in savings. However, some development was observed on generation of income and easy access to credit for the contracted farmers.

**Table 3: Extent of Socio-Cultural Developments**

S. No.	Development	Mean Score		Diff. (%)	Pooled Mean Score (n = 160)	Gap (%)
		Contracted Farmers (n = 80)	Non-contracted Farmers (n = 80)			
1.	Better coordination among people	2.28	2.21	3.07	2.25	25.00
2.	Extending cooperation and help in crisis	2.32	2.18	6.03	2.25	25.00
3.	Good harmony established	2.14	2.05	4.21	2.10	30.00
4.	Decision making capability increased	2.05	2.05	0.00	2.05	31.67
5.	Productive time management	1.68	1.58	5.95	1.63	45.67
6.	Optimum use of resources	2.18	2.15	1.38	2.17	27.67
7.	Exposure to sources of information	2.40	2.26	5.83	2.33	22.33

(Maximum obtainable score – 3)

Educational, socio-cultural and sports activities in the farming community are often important to create a positive atmosphere of partnership. The contract farming policies based on recognized socio-cultural responsibilities have created a positive atmosphere and strong coordination among the growers facilitating smooth management of all operations in sugarcane cultivation. It is revealed from Table-3 that both the contracted and non-contracted respondents were almost of similar opinions. Poor opinions were observed on productive time management, and increase in decision making capability. However, better opinions received on exposure to sources of information, extending cooperation and help in crisis, better coordination among people and to some extent optimum use of resources, as well as good harmony established indicate better socio-cultural developments.

**Table 4: Extent of Developments on Material Possession**

S. No.	Development	Mean Score		Diff. (%)	Pooled Mean Score (n = 160)	Gap (%)
		Contracted Farmers (n = 80)	Non-Contracted Farmers (n = 80)			
1.	Purchase of household articles	2.16	2.13	1.39	2.15	28.33
2.	Purchase of farm implements	1.48	1.38	6.76	1.43	52.33
3.	Irrigation facilities	1.61	1.30	19.25	1.46	51.33
4.	Resource mobilization	2.19	2.13	2.74	2.16	28.00
5.	Purchase of land	1.81	1.68	7.18	1.75	41.67
6.	Better housing	2.08	1.98	4.81	2.03	32.33

(Maximum obtainable score – 3)

Farmers are opting contract farming in sugarcane cultivation for better production and easy disposal of the produce with remunerative price. They usually develop essential infrastructures for optimum utilization of resources as well as productive time management. But, the study revealed (Table-4) that both the contracted and non-contracted respondents were almost of similar opinions. Poor responses received on purchase of land and farm implements,

developing irrigation facilities and to some extent better housing indicated that the respondents were not getting substantial income through sugarcane cultivation under contract farming. However, better developments observed on purchase of household articles and resource mobilization may be due to the additional income generated.

**Table 5: Extent of Developments on Farm Activities**

S. No.	Development	Mean Score		Diff. (%)	Pooled Mean Score (n = 160)	Gap (%)
		Contracted Farmers (n = 80)	Non-Contracted Farmers (n = 80)			
1.	Growing remunerative enterprise	1.76	1.71	2.84	1.74	42.00
2.	Increase in cropping pattern and intensity	2.26	2.23	1.33	2.25	25.00
3.	Growing crops round the year	2.26	2.23	1.33	2.25	25.00
4.	Growing suitable combination of enterprise	2.23	2.09	6.28	2.16	28.00
5.	Diversification of enterprise	1.81	1.68	1.718	1.75	41.67
6.	Better utilization of family labour	2.25	2.23	0.89	2.24	25.33

(Maximum obtainable score – 3)

Contract farming system facilitates efficient use of farm resources, recommended inputs for quality production and marketing networks with remunerative price etc. The spillover effects of contract farming may motivate farmers to replicate the same techniques in adoption of practices in other farm activities for better income. As observed from Table-5, both the contracted and non-contracted respondents had favourably opined for the increase in cropping pattern and cropping intensity, growing crops round the year, better utilization of family labour and growing suitable combination of enterprise. But, poor responses observed on growing remunerative enterprise and diversification of enterprise may conclude that there were not much of developments on farm activities.

**Table 6: Comparative Analysis of the Developments**

S. No.	Development	Mean Score		Diff. (%)	Pooled mean Score (n = 160)	Gap (%)
		Contracted Farmers (n = 80)	Non-Contracted Farmers (n = 80)			
1.	Technological	1.78	1.56	12.36	1.67	44.33
2.	Economical	1.78	1.62	8.99	1.70	43.33
3.	Socio-cultural	2.15	2.07	3.72	2.11	29.67
4.	Material possession	1.89	1.77	6.35	1.83	39.00
5.	Farm activities	2.10	2.03	3.33	2.07	31.00

(Maximum obtainable score – 3)

Comparative analysis of the developments (Table-6) revealed that both the contracted and non-contracted respondents were of almost similar opinions. Poor developments were observed on technological, economical and material possessions. At the same time, developments observed on socio-cultural and farm activities were also not encouraging. Though, the contracted respondents had better response in all the aspects, but the developments were not significant. It is therefore apprehended that contract farming in sugarcane cultivation had not exhibited significant developments of the contracted farmers.

**Table 7: Influence of Socio-Economic Variables on Developments**

Variable	Total Effect	Total Direct Effect	Total Indirect Effect	Substantial Effect		
				I	II	III
X <sub>1</sub> Age	-0.523	-0.230	-0.293	0.142 X <sub>8</sub>	0.136 X <sub>2</sub>	0.105 X <sub>5</sub>
X <sub>2</sub> Caste	-0.473	-0.370	-0.103	0.084 X <sub>13</sub>	0.069 X <sub>9</sub>	-0.224 X <sub>12</sub>
X <sub>3</sub> Education	0.723	0.214	0.509	0.137 X <sub>1</sub>	-0.112 X <sub>6</sub>	-0.059 X <sub>2</sub>
X <sub>4</sub> Family type	-0.514	-0.227	-0.287	0.173 X <sub>1</sub>	-0.143 X <sub>1</sub>	0.034 X <sub>8</sub>
X <sub>5</sub> Family size	-0.627	-0.110	-0.517	-0.225 X <sub>4</sub>	0.196 X <sub>5</sub>	-0.086 X <sub>7</sub>
X <sub>6</sub> Social participation	0.513	0.180	0.333	-0.147 X <sub>6</sub>	0.113X <sub>10</sub>	0.042X <sub>11</sub>
X <sub>7</sub> Extension contact	-0.514	-0.221	-0.293	-0.223X <sub>5</sub>	-0.172X <sub>11</sub>	-0.074X <sub>1</sub>
X <sub>8</sub> Cosmopolitaness	0.576	-0.220	-0.356	-0.206X <sub>7</sub>	0.167X <sub>9</sub>	0.082X <sub>3</sub>
X <sub>9</sub> Housing pattern	-0.514	-0.380	-0.134	0.196 X <sub>12</sub>	0.104X <sub>2</sub>	-0.023X <sub>11</sub>
X <sub>10</sub> Occupation	-0.402	-0.219	-0.183	-0.177X <sub>5</sub>	0.089X <sub>5</sub>	0.035X <sub>6</sub>
X <sub>11</sub> Sources of information	0.368	-0.590	0.958	0.566X <sub>10</sub>	0.367 X <sub>7</sub>	-0.142 X <sub>5</sub>
X <sub>12</sub> use of farm implements	-0.016	-0.202	0.186	-0.276X <sub>9</sub>	-0.150 X <sub>11</sub>	-0.045 X <sub>8</sub>
X <sub>13</sub> Annual income	-0.642	0.084	-0.726	0.261 X <sub>3</sub>	0.089 X <sub>8</sub>	-0.078 X <sub>11</sub>

**Residual effect: 0.033**

#### **Highest Indirect Effect: Sources of Information**

Structural analysis or path analysis is a causal (multiple factors) and effect (single criterion) relationships where simple co-relations are split in to direct and indirect effects. The results revealed (Table-7) that sources of information had exhibited highest indirect effect and associated with as many as six variables. Hence, the variable sources of information channelized through education, family type, extension contract, use of farm implements, house type and annual income could exhibited significant influence on various aspects of developments of the sugarcane growers under contract farming. The residual effects being 0.033 inferred that 3.30% of the variation in this relation could not be explained.

#### **CONCLUSIONS**

Contract farming extended support of assured marketing with remunerative price, credit and finance, technical expertise, better crop management, proper guidance and supply of quality inputs that facilitate production, productivity and income. Poor developments observed on technological, economical, material possession and farm activities indicated there was not much developments of the contracted sugarcane growers through contract farming. However, some developments observed on income generation, increase in cropping pattern and intensity, growing crops round the year with suitable combination of enterprise, better coordination, cooperation and harmony among the people, better utilization of family labour and resource mobilization may beconsidered as the impact of contract farming. Socio-economic attributes such as sources of information, education, family type, extension contract, use of farm implements, house type and annual income had exhibited significant influence on developments.

It is therefore suggested that the connected sugar factory officials have to organize various educational approaches to enrich the knowledge and skill competency of the sugarcane growers and liasoning with credit institutions for financial support as well as input dealers for timely supply of quality inputs enabling the contracted growers for better production and income generation resultingfor their developments.

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