



Constraints under Contract Farming in Sugarcane Cultivation: A Case of Odisha

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Authors' contributions

This work was carried out in collaboration between all authors. Author SKS designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors MPN and PKP managed the analyses of the study. Author PKP managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Contract farming requires a long term commitment between both the agri-business firms and contracted growers. It seems to offer solutions to many problems agriculture in India face, more so the agriculture in Odisha. Contract farming is supposed to help agriculture through strengthening the backward linkages. This paper evaluated various constraints faced by the sugarcane growers under contract farming system. 180 sugarcane growers were randomly selected under contract farming in two districts of Odisha state in India. Data were collected through structured interview schedule. The results showed that the contracted growers had major constraints in planning, procurement and payment followed by credit and finance, infrastructure, fertilizers and chemicals as well as technological support. It was discovered that the farmers did not have much constraint in supply of seed cane and other management practices. No written agreement, produce not lifted in

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time, no attempt for farm mechanization and irrigation facilities, harassment in payment, no community organization and cluster approach, no transparency in measurement, inadequate training, no subsidy facilities and insurance coverage were the major constraints of the growers which should be considered by the contracting firms for the sustainability of contract farming in sugarcane cultivation.

Keywords: Contract farming; sugarcane cultivation; constraints.

1. INTRODUCTION

The majority of poor people in the world lives in rural areas and is dependent on agriculture for their livelihoods and sustenance. Nevertheless, the agricultural sector has often been neglected as an important mechanism for reducing poverty and promoting development [1]. Agriculture is an age-old means of livelihood for millions of Indians and its structure underwent rapid changes during the nineties both due to the pressure of commercialization and increased dependence on trade. This was fuelled by many overt and covert changes in the sector, but diversification of crops along with the advent of WTO and liberalization policies were the main players in the structural change [2]. During post economic reforms period (1991), Indian agriculture is facing a complex situation, more than ever before. In consequence of that contribution of agriculture and allied sector to GDP has declined over the years. Agriculture in India is not just an industry but is a way of life; it provides sufficient employment basically in rural area and also provides agricultural inputs to the agriculture based food industries. Timely and adequate quantity of good quality agricultural inputs is a sine qua non for smooth functioning of the agro industries. This underlying paradox of the Indian agricultural scenario has given birth to the concept of contract farming, which promises to provide a proper linkage between the farm and market, promote high degree of competition at the supply and market end and minimize intermediaries in order to increase farmers' income.

Contract farming is an interesting meadow of research of social science especially in agricultural economics. Many experts, scholars, researchers and academicians have induced to conduct their research work on this field. The wide variety in contract farming arrangement and their varied success in benefitting farmers and agribusiness firms demonstrate that these arrangements are complex and their performance as well as potential benefits are highly sensitive to specific features of the

products, firms, communities and contractual specifications involved [3]. The contracting firms prefer large and medium farmers because of economics of sale, lack of access to capital, low literacy level inherent with small and marginal farmers [4]. The problems of monopsony where a single buyer purchase the produce of thousand farmers lacking adequate information about the market [5]. There is often rejection of the farmer's produce with the plea of unjustified quality especially when the market price less than the contract price at the time of harvest [6]. The firms also manipulate the contract by delay in lifting the produce for loss of weight, no transparency in measurement, delay in payment, forced price reduction etc. [7]. Besides, farmers have failed to produce desired production with quality parameters in the absence of quality inputs, credit support, technological backstopping, essential infrastructure and other management support [8]. Contract agreements are largely verbal and no Government functionary was involved in contract farming programme. In some places the agreement was not very clear to the farmers and hence, disputes arise. Vendor was appointed by the company who manages the total affair for a group of villages [9]. Therefore, the farmers have several constraints and the present study attempted to locate the pertinent constraints of the sugarcane growers under contract farming for necessary remedial measures.

2. MATERIALS AND METHODS

The study was conducted in Nayagar and Cuttack districts of Odisha during 2013 under operational area of the Nayagarh Sugar Complex Limited and Shakti Sugar Limited respectively implementing contract farming in sugarcane cultivation. A sample of 90 contracted farmers under sugarcane cultivation were selected randomly selected from 12 Panchayats covering two blocks in each district with total sample size of 180. The data were collected personally through a structured schedule on 5 point scale of strongly agree, agree, undecided, disagree and

strongly disagree with score value of 5, 4, 3, 2 and 1 respectively. Mean score was employed to analyze the data.

2.1 Specific Objective

The objective of this paper is to analyse the constraints of contract farming with a focus on Sugarcane cultivation in Odisha of India. In order to do that, the author will discuss about the various types of constraints faced by sugarcane growers. The final section summarizes recommendations for the successful promotion of contract farming in Odisha as a strategy for alternative method of farming in the context of agricultural globalization.

3. RESULTS AND DISCUSSION

Organising beneficiaries for cluster approach, involving them in decision making and assigning responsibilities are very much essential to reduce the social disparity and make the benefits available to the targeted beneficiaries. The data

in Table 1 revealed that the respondents of both Nayagarh and Cuttack district had stated all the constraints towards planning made by the contracting firm. The contracting firms should made written agreement with growers, organising community, following cluster approach for better supervision and guidance, clarifying the responsibilities and involving growers in decision making process, as well as due attention for feasible technologies to make sugarcane cultivation under contract farming sustainable.

Good varieties and quality seed cane will ensure desired production with quality parameters benefitting both the contracted growers and contracting firms. Constraints towards supply of seed cane (Table 2) indicated that the respondents of both the districts had not expressed many constraints in supply of good variety, quality seed cane, timely supply and date for the supply. However; adequate quantities of seed cane have to be supplied to cover the land planned for sugarcane cultivation.

Table 1. Constraints in planning

Sl. no.	Constraint	Mean score			Rank
		Nayagarh district (n = 90)	Cuttack district (n = 90)	Total (n = 180)	
1.	Not organising community	4.62	4.24	4.43	II
2.	Not involving people in decision making	4.16	4.31	4.24	IV
3.	Cluster approach in followed	4.28	4.34	4.31	III
4.	Not clarifying the responsibility of the growers and firm	4.37	4.07	4.22	VI
5.	No written agreement	4.89	4.60	4.75	I
6.	Not concern for feasible technologies	4.28	4.17	4.23	V

(Maximum obtainable score – 5)

Table 2. Constraints in supply of seed cane

Sl. no.	Constraint	Mean score			Rank
		Nayagarh district (n = 90)	Cuttack district (n = 90)	Total (n = 180)	
1.	Not supplying good variety	2.01	2.39	2.20	IV
2.	Not supplying quality seed cane	2.71	2.36	2.54	II
3.	Not supplied in time	2.18	2.79	2.49	III
4.	Adequate quantity not supplied	4.12	4.18	4.15	I
5.	Not informing the date of supply in advance	1.98	2.09	2.04	V

(Maximum obtainable score – 5)

The norm of contract farming envisages for the use of all recommended inputs for desired quantity and quality production [10]. The respondents of both the districts had stated the constraints (Table 3) of not supplying recommended quantity, timely and quality not ensured. Moreover, the contracting firms had also not motivated the growers to apply the inputs particularly chemicals at a time for effective diseases and pests management. Unless these facilities are not provided, desired quality and quantity of production may not be achieved. However; the respondents had skill competency in application of fertilizers and chemicals for which they had not expressed much constraint.

Contracting firms have to liaise with credit institutions for financial support to the growers to purchase additional inputs not supplied by the contracting firms [11]. The data in Table 4 revealed that the respondents of both Nayagarh and Cuttack district had not stated the constraints of high rate of interest indicating that the contracted growers requires credit support. As per the score value, the contracting firms should liaison with credit institutions for providing adequate credit with flexibility in repayment as per there capabilities. Insurance coverage should

be mandatory for risk minimization. Besides, the contract firms have to take all initiatives to link the sugarcane cultivation with other programmes of the State Government to extend subsidy facilities. These were the important constraints under credit and finance for which the contracting firms have to liaise for all these supports.

Knowledge and skill competency are very much essential for proper management of any crop to get desired production with specified quality parameters [12]. The growers should be sufficiently exposed to the technological developments through various extension approaches. But the data in Table 5 revealed that the respondents had not expressed the constraints of Clarification and understanding as well as not liaising with source of information. In other words, they had expressed for not supplying literatures as reference materials as the major technological constraints followed by no. attempt to solve technological problems in field situations, inadequate training and no exposure visit to ideal firms to develop confidence on technology. These are essential to enrich the knowledge and skill competency for which the contracting firms have to ensure all these facilities.

Table 3. Constraints in use of fertilizers and chemicals

Sl. no.	Constraint	Mean score			Rank
		Nayagarh district (n = 90)	Cuttack district (n = 90)	Total (n = 180)	
1.	Recommended quantity not supplied	4.41	3.92	4.17	III
2.	Not supplied in time	4.10	4.29	4.20	II
3.	Quality not ensured	4.41	4.40	4.41	I
4.	Not motivating farmers to apply at a time	4.60	4.22	4.41	I
5.	No skill development in application	2.10	2.20	2.15	IV

(Maximum obtainable score – 5)

Table 4. Constraints on credit and finance

Sl. no.	Constraint	Mean score			Rank
		Nayagarh district (n = 90)	Cuttack district (n = 90)	Total (n = 180)	
1.	Not at all liasoning with credit institutions	4.02	4.16	4.09	V
2.	Adequate credit not provided	4.20	4.02	4.11	IV
3.	High rate of interest	2.10	2.04	2.07	VI
4.	No flexibility in repayment	4.67	4.47	4.57	I
5.	No insurance coverage	4.59	4.20	4.40	II
6.	Complete absence of subsidy facilities	4.41	4.32	4.37	III

(Maximum obtainable score – 5)

Sugarcane growers required regular guidance and supervision for effective management of all operations [13]. But the findings revealed (Table 6) that the respondents of both Nayagarh and Cuttack district were of similar opinions. The respondents had not stated many constraints in regular monitoring and supervision, timely diagnosis of problems as well as conflict resolution. Field staffs not cooperative and competent enough were the major constraints that may affect proper crop management for which the contracting firms have to build their competency for proper guidance to the growers.

Farm mechanization and irrigation facilities are the essential infrastructures required in sugarcane crop for better production [14]. The contracting firms have to develop these facilities either from their own source or liaising with developmental departments for such facilities. But the respondents of both the district (Table 7) had reacted much for no attempt towards farm mechanization, irrigation facilities either by the contracting firms of supporting the growers to develop. Similarly; the study revealed, attempt had not been taken by the contracting firms for custom hiring facilities. Hence; very poor

infrastructure supports were extended by the sugarcane factories undertaking contract farming in sugarcane cultivation.

Timely harvesting, immediate lifting and measurement at factory side maintain the quality failing which there will be weight loss. Similarly, payment has to be made immediately to the growers for repayment of loans and investment in other farm activities. The data in Table 8 indicated that the respondents of both the districts had not expressed the constraint of timely harvest rather reacted much on other aspects as mentioned in the table. If the produce not lifted in time, harassment in lifting the produce, transparency not maintained in measurement and price not fixed over the production cost, the growers may not be interested to continue sugarcane cultivation under contract farming. It is therefore apprehended that the norms of the contract farming were not followed and suggested for all possible measures by the district administration.

Comparative analysis of the constraints revealed (Table 9) that the respondents of both Nayagarh and Cuttack districts were of similar opinion. The

Table 5. Constraints on technological back-stopping

Sl. no.	Constraint	Mean score			Rank
		Nayagarh district (n = 90)	Cuttack district (n = 90)	Total (n = 180)	
1.	Inadequate training	4.48	4.22	4.35	II
2.	Literatures not at all supplied for reference	4.43	4.39	4.41	I
3.	Lack of exposure visit	4.47	4.19	4.43	IV
4.	Lack of clarification and understanding of production technology	2.12	2.41	2.27	VI
5.	Not liaising with source of information	2.63	2.40	2.52	V
6.	Lack of attempt to solve technological problem	4.51	4.23	4.37	II

(Maximum obtainable score – 5)

Table 6. Constraints on management support

Sl. no.	Constraint	Mean score			Rank
		Nayagarh district (n = 90)	Cuttack district (n = 90)	Total (n = 180)	
1.	Irregular monitoring & supervision	2.04	2.17	2.11	V
2.	No timely diagnosis of problems	2.20	2.31	2.26	III
3.	Frequent change of field staffs	2.28	2.04	2.16	IV
5.	Field staffs not competent	4.39	4.28	4.34	I
6.	Field staffs not cooperative	4.10	4.17	4.14	II

(Maximum obtainable score – 5)

Table 7. Constraints on infrastructure supports

Sl. no.	Constraint	Mean score			Rank
		Nayagarh district (n = 90)	Cuttack district (n = 90)	Total (n = 180)	
1.	Contracting firms had not taken initiatives for mechanization	4.58	4.50	4.54	I
2.	Contracting firms didn't support farmers for mechanization	3.78	4.06	3.92	IV
3.	Inadequate irrigation facilities	4.71	4.18	4.45	II
4.	Contracting firms didn't take steps to made available the implements through Custom hiring centers	4.68	4.07	4.38	III
5.	Lack of storage facility for the produce	2.03	2.08	2.06	V

(Maximum obtainable score – 5)

Table 8. Constraints on procurement and payment

Sl. no.	Constraint	Mean score			Rank
		Nayagarh district (n = 90)	Cuttack district (n = 90)	Total (n = 180)	
1.	Not insisting for timely harvest	2.48	2.18	2.33	VI
2.	Produce not lifted timely	4.63	4.62	4.63	I
3.	Unnecessary delay in lifting produce	4.54	4.09	4.32	IV
4.	Mischief in weighing	4.43	4.32	4.38	III
5.	No remunerative sale price	4.26	4.29	4.28	V
6.	Delay in payment	4.58	4.27	4.43	II

(Maximum obtainable score – 5)

Table 9. Comparative analysis of the constraints

Sl. no.	Constraint	Means score			Pooled mean score	Rank
		Nayagarh district (n = 90)	Cuttack district (n = 90)	Diff. (%)		
1.	Planning	4.43	4.29	2.80	4.36	I
2.	Supply of seed care	2.60	2.56	0.80	2.58	VII
3.	Fertiisers and chemicals	3.92	3.81	2.20	3.87	IV
4.	Credit and finance	4.0	3.87	2.60	3.94	III
5.	Technical support	3.82	3.64	3.60	3.73	V
6.	Management support	2.89	2.93	0.80	2.91	VI
7.	Infrastructure support	3.96	3.78	3.60	3.87	IV
8.	Procurement and payment	4.15	3.96	3.80	4.06	II

(Maximum obtainable score – 5)

respondents had stated more constraints in planning as well as procurement and payment. They had not expressed much constraint on supply of seed cane, management support and

some constraints on credit and finance, fertilizers and manures, infrastructure and technological support.

4. CONCLUSION

The contract farming system should be seen as a partnership between agribusiness and farmers. It requires a long term commitment from both the parties. But the study indicated that the contracted growers had maximum constraints in planning followed by procurement and payment, credit and finance, infrastructure, technological, fertilizers and chemicals support.

The major constraints were no written agreement, produce not lifted in time, no attempt for mechanization and irrigation facilities, harassment in payment, no community organization and cluster approach, no transparency in measurement, inadequate training, no subsidy facilities and insurance coverage.

5. RECOMMENDATIONS

Above mentioned problems which hinders the wide implementation of contract farming in Odisha. Suitable steps should, therefore, be taken by the respective authorities to remove the existing drawbacks. The following recommendations are made in this regard.

- State level legislation should be made for the regulation of contract farming. It would help to redress the disputes occurred between contracting company and farmer.
- The government should allow and encourage contract farming organizations to take out realistic and deregulated crop insurance policies.
- The government should give tax concessions or tax holidays to the companies engaged in contract farming to encourage their participation.
- The government should instruct the Indian Council of Agricultural Research (ICAR) and the University system to provide region specific crop solutions and make them part of the public information domain.
- The government should take initiatives to import of new improved technology

for contract farmers / contracting companies.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Setboonsarng S, Leung PS, Chai J. Contract farming and poverty reduction: The case of organic rice contract farming: Conceptual framework and Indian panorama in Thailand. In Poverty Strategies in Asia. Edited by John Weiss and Haider Khan. ADB and Edward Elgar; 2006.
2. Dorward A. The effects of transaction costs, power and risk on contractual arrangements: A conceptual framework for quantitative analysis. *Journal of Agricultural Economics*. 2001;52:59-73.
3. Gupta SK. Contract farming, *National Bank News Review*. 2002;18(1):64–67.
4. Key N, Runsten D. Contract farming of agro-processing firms and the scale of out grower production. *World Development*. 1999;27(2):381-401.
5. Acharya N. Bengal farmers reap benefits of collaborative farming. *Business Standard*, December 20. Allen; 2012.
6. Vasudev N, Chowdhury KR. Contract farming in theory and practice. *Indian Journal of Agricultural Marketing*. 2005; 19(2):178–183.
7. Prasad KVV, Redy PVVS, Rao KS, Raghuram. Problems in contract broiler farming as perceived by the farmers. *Indian Veterinary Journal*. 2005;82(4):407-409.
8. Kumar H, Singh R. Success and failure of contract farming in Himachal Pradesh – A case study of canliflower seed production. *Indian Journal of Agricultural Marketing*. 2005;19(2):170–174.
9. Sarkhel J. Problems and prospects of contracting farming in India, ppt., presented at UGC-ASC, Burdwan University, India; 2014.
10. Baumann P. Equity and efficiency in contract farming schemes: The experience of agricultural tree crops. Working paper 139. UK: Overseas Development Institute; 2000.

11. Boehlji M. The moral economy of the contract in living under contract (eds) P. D Little, M. J. Watts, University of Wisconsin Press, Wisconsin; 2001.
12. Dunham D. Contract farming and export horticulture: Can agribusiness revitalise the peasant sector in Sri Lanka? Research Studies Agricultural Policy, Series No. 3, Institute of Policy Studies, Colombo; 1995.
13. Sukpal S. Contract Farming and Agricultural Diversification in the Indian Punjab: A study of performance and problems. Indian Journal of Agricultural Economics. 2000;55(3):283-294.
14. Ram S, Kumawat RC. Contract farming in India. Popular Kheti. 2013;1(2):49-52.

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