

MOTIVATIONAL FACTOR AND CONSTRAINTS IN ADOPTION OF POTATO CULTIVATION TECHNOLOGY BY POTATO GROWERS UNDER CONTRACT FARMING

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ABSTRACT

Most of the farm operators being small and marginal farmers in India, there are problems in getting quality raw material for processing, marketing, and distribution, especially in perishable high value crops but contract farming which was restricted, largely, to seed production earlier, spread to perishable produce and has now become the dominant and growing mode of raw material production and procurement co-ordination among the processors and fresh produce market and exporters. Potato is very important perishable high value crop in North Gujarat Agro-climatic zone of Gujarat state with the cultivating area of 97,204 hectare in six districts of North Gujarat (Anon.2014-15). Therefore, the present investigation was conducted in the North Gujarat Agro climatic Zone of Gujarat state. Two districts viz., Banaskantha and Sabarkantha occupy the highest area under potato cultivation in North Gujarat and hence, were selected purposively for study. Ten potato growers were randomly selected from twenty villages. In all, 200 contracting potato growers were selected for the study. Important motivated factors farmers toward contract farming were; assured price, price stability, no tension of marketing, technical advice to control pests and diseases, no cash payment for seed. Majority (78.00%) of the potato growers had medium to high level of adoption regarding potato cultivation technology. Major constraints faced by potato growers in adoption of potato cultivation technology under contract farming were; high rejection rate, low contract price, high cost of inputs given by contracting company, poor quality seed supply by company and manipulation of norms by firm. Important suggestions expressed by the potato growers were; provision of supportive price, quality seed to be provided by company, government intervention for making strict laws to make legal contracts and technical advice to control pests and diseases.

Keywords: extent of adoption, constraints, cultivation technology, contract farming

INTRODUCTION

Most of the farm operators being small and marginal farmers in India (Vinaya and Shivamurthy, 2021), there are problems in getting quality raw material for processing, marketing, and distribution, especially in perishable high value crops. The processing and marketing firms faced issues of high cost, lack of adequate availability, poor quality and timeliness. On the other hand, there are gluts in market for such producers and farmers realized low or un- remunerative prices. After the opening up to the Indian economy and entry of many domestic and multinational players in to agribusiness sector, contract farming which was restricted, largely, to seed production earlier, spread to perishable produce and has now become the dominant and growing mode of raw material production and procurement co-ordination among the processors and fresh produce market and exporters.

Potato is very important perishable high value crop in North Gujarat Agro-climatic zone of Gujarat state with the cultivating area of 97,204 hectare in six districts of North

Gujarat (Anon.2014-15). Therefore, the present investigation was undertaken with following objectives.

OBJECTIVES

- (1) To identify factors motivating farmers for contract farming in potato cultivation
- (2) To assess the extent of adoption of potato cultivation technology by potato growers under contract farming
- (3) To identify the constraints faced by potato growing farmers in contract farming.
- (4) To seek the suggestions from the potato growing farmers to overcome the constraints faced by them in contract farming

METHODOLOGY

The present study was conducted in the North Gujarat Agro climatic Zone of Gujarat state. Two districts

viz., Banaskantha and Sabarkantha occupy the highest area under potato cultivation in North Gujarat and hence, were selected purposively for study. Among all the talukas of Banaskantha and Sabarkantha districts, four talukas viz., Disa, and Dantiwada of Banaskantha district and Idar and Vadali talukas of Sabarkantha district occupy highest area under potato cultivation comparing other talukas. Therefore, these four talukas were selected purposively. After the selection of talukas from both the districts, a list of potato growing villages of respective talukas under contract farming was obtained from the contracting firms. From the list, five villages from each selected taluka were purposively selected for the study on the basis of higher potato growing area under contract farming. Thus, total number of selected villages was

twenty. A list of the potato growers of each selected villages were obtained from the contract farming firms. Ten potato growers were randomly selected from each village. In all, 200 contracting potato growers were selected for the study.

RESULTS AND DISCUSSION

Factors motivating the farmers toward contract farming

Motivational factors referred to the factors which motivated farmers to cultivate potato under contract condition. Factors motivating farmers are generally oriented towards maximization of the profits and have better contact with technical advisor of contracting firms to seek special knowledge of new innovations resulting in adoption. The data are presented in Table 1.

(n= 200)

Table 1: Rank orders of motivational factors of the farmers toward contract farming

Sr. No.	Motivational factors	No.	Per cent	Rank
1	Price stability	172	86.00	II
2	Assured price	177	88.50	I
3	Technical advice to control pests and diseases	165	82.50	IV
4	Delivery from farm (minimize transportation cost)	160	80.00	VI
5	Recognition at national level	86	43.00	VIII
6	No storage requirement	156	78.00	VII
7	No tension of marketing	169	84.50	III
8	No cash payment for seed	162	81.00	V

As seen from the table 1 important factors motivated farmers toward contract farming were; assured price (88.50%), price stability (86.00%), no tension of marketing (84.50%), technical advice to control pests and diseases (82.50%), no cash payment for seed (81.00%), delivery from farm (minimize transportation cost) (80.00%),no storage requirement (78.00%). The only motivational factor mentioned by less than half of the respondents was, recognition at national level (43.00%).

From the above result, it can be concluded that important motivated factors farmers toward contract farming were; assured price, price stability, no tension of marketing, technical advice to control pests and diseases, no cash payment for seed.

The probable reason for such type of findings may be that these factors are attracting respondents to adopt potato cultivation under contract farming. The finding is line with the finding of swinnen (2006).

Extent of adoption of potato cultivation technology by the contracting farmers

Adoption is a decision making mental process to continue use of an innovation. In this study, adoption mean

acceptance of full use of potato cultivation technology under contract farming. It is rigidly stated that the adoption of recommended package of practices is an instrument for making agriculture a better and more profitable enterprise. Considering this fact, an attempt had been made to find out the extent of adoption of potato cultivation technology by the contracting farmers. On the basis of adoption score obtained by the potato growers, the adoption quotient was calculated for individual respondents with the help of formula developed by Sengupta (1967). The respondents were then, classified into three categories on the basis of \pm S.D. from the mean (X). The classification of respondents is presented in Table 2

It is clear from table 2 that 54.50 per cent of potato growers had medium level of overall adoption regarding potato cultivation technology followed by 24.00 per cent and 21.50 per cent of the respondents who had high and low extent of overall adoption, respectively.

Thus, it can be concluded that majority (78.00%) of the potato growers had medium to high level of adoption regarding potato cultivation technology. The probable reason might be that price assurance was the biggest attraction for the farmers for growing more profitable high-value cash crop under contract farming and gaining recognition among the farming community.

Table 2: Distribution of potato growers according to their adoption of potato cultivation technology (n=200)

Sr. No.	Extent of adoption	Number	Percent
1	Low (below 65.62 per cent)	43	21.50
2	Medium (between 65.62 to 82.14 per cent)	109	54.50
3	High (above 82.14 per cent)	48	24.00

Mean=73.88

S.D.= 08.26

This finding is in the line with the finding reported by Mane (2013) and Melkude (2013).

Constraints faced by farmers in potato cultivation under contract farming

Constraints in adoption of new technology never end. However, they can be minimized. The respondents

were requested to express the constraints faced by them in adoption of potato cultivation technology under contract farming. Frequency and percentage of important constraints were calculated. The constraints were then ranked based on frequency and percentage presented in Table 1

As seen from the table 3 that the major constraints faced by potato growers in adoption of potato cultivation technology under contract farming were; high rejection rate (66.00%), low contract price (63.50%), high cost of inputs given by contracting company (61.50%), poor quality seed supply by contracting company (59.00%) and manipulation of norms by firm (56.50%). The constraints mentioned by less than half of the respondents were; delayed payment (49.00%), labour problem at the time of grading (46.00%), pests and diseases problem (43.00%), copy of agreement was not given (41.50%) and climatic aberration (35.00%).

Table 3: Constraints faced by potato growers in adoption of potato cultivation technology under contract farming (n = 200)

Sr. No	Constraints	Frequency	Per cent	Rank
1	High rejection rate	132	66.00	I
2	Low contract price	127	63.50	II
3	High cost of inputs given by contracting company	123	61.50	III
4	Poor quality seed supply by company	118	59.00	IV
5	Manipulation of norms by firm	113	56.50	V
6	Delayed payment	98	49.00	VI
7	Labour problem at the time of grading	92	46.00	VII
8	Pests and diseases problem	86	43.00	VIII
9	Copy of agreement was not given	83	41.50	IX
10	Climatic aberration	70	35.00	X

It can be thus, be inferred from the above results that high rejection rate, low contract price, high cost of inputs given by contracting company, poor quality seed supply by company and manipulation of norms by firm, were the major constraints. These findings are in partial agreement with those findings of Hiremath *et.al* (2012) and Melkude (2013).

Suggestions of the farmers to overcome the constraints faced by them in potato cultivation under contract

farming

In order to document the suggestions, the respondents were asked to offer their suggestions to overcome the constraints faced by them in adoption of potato cultivation technology under contract farming. Based on frequency and percentage, ranks were assigned to each suggestion given by respondents. The results in this regard are presented in Table 4.

Table 4: Suggestions given by potato growers to overcome the constraints faced by them in adoption of potato cultivation technology under contract farming (n = 200)

Sr. No	Suggestions	Frequency	Per cent	Rank
1	There should be provision of supportive price	143	71.50	I
2	Quality seed should be provided by company	136	68.00	II
3	There should be government intervention for making strict laws to make legal contracts	122	61.00	III
4	Technical advice to control pests and diseases	109	54.50	IV
5	Cash payment at the time of sale of crop product	97	48.50	V
6	Copy of the agreement should be given.	85	42.50	VI
7	Advanced payment before sowing crop	80	40.00	VII

Valuable suggestions given by potato growers are presented in Table 4. It can be observed from Table 4 that the potato growers suggested that there should be provision of supportive price for their products (71.50%), quality seed should be provided by company (68.00%), there should be government intervention for making strict laws to make legal contracts (61.00%) and technical advice to control pests and diseases (54.50%). Suggestions offered by less than half of the respondents were; cash payment at the time of sale of crop product (48.50%), copy of the agreement should be given (42.50%) and advanced payment before sowing of crop (40.00%).

From the above results, it can be inferred that the important suggestions expressed by the potato growers were; provision of supportive price, quality seed to be provided by company, government intervention for making strict laws to make legal contracts and technical advice to control pests and diseases. These findings are in partial agreement with those findings of Hiremath *et al* (2012), Melkunde (2013) Desai *et al.* (2022), Raval *et al.* (2021a & 2021b) and Vegad *et al.* (2021).

CONCLUSION

Important factors of motivated farmers toward contract farming were; assured price (88.50%), price stability (86.00%), no tension of marketing (84.50%), technical advice to control pests and diseases (82.50%), no cash payment for seed (81.00%), delivery from farm (minimize transportation cost) (80.00%) and no storage requirement (78.00%). Majority (78.00%) of the potato growers had medium to high level of adoption regarding potato cultivation technology. Major constraints faced by potato growers in adoption of potato cultivation technology under contract farming were; high rejection rate (66.00%), low contract price (63.50%), high cost of inputs given by contracting company (61.50%), poor quality seed supply by contracting company (59.00%) and manipulation of norms by contracting firm (56.50%).

The potato growers suggested that there should be provision of supportive price for their products (71.50%), quality seed should be provided by company (68.00%), there should be government intervention for making strict laws to make legal contracts (61.00%) and technical advice to control pests and diseases (54.50%).

CONFLICT OF INTEREST

All authors declare that they have no conflict of interest

REFERENCES

Anonymous (2014-15). Crop wise area, production and productivity of Gujarat state, Directorate of Agriculture, Gandhinagar.

Desai, H. K., Thakkar, K. A. and Desai, J. D. (2022) Adoption of potato cultivation technology by the potato growers under contract farming. *Guj. J. Ext. Edu.* 33(1):30-33.

Mane, M. R. (2013). A study on adoption of potato production technology and marketing of potato by the farmers of sabarkantha district of Gujarat state. M.Sc. (Agri.) Thesis (Unpublished). Sardarkrushinagar Dantiwada Agricultural University, SardarKrushinagar.

Mashaliya, K. V., Prajapati, R. R. and Patel, P. H. (2020) Constraints faced by the potato growers in adoption of micro irrigation technology. *Guj. J. Ext. Edu.* 31(2):101-103.

Melkunde, G. R. (2013). A study on contract farming of cotton seed production by tribal farmers of Sabarkantha district of Gujarat state. M.Sc. (Agri.) Thesis (Unpublished). Sardarkrushinagar Dantiwada Agricultural University, Sardarkrushinagar.

Raval, K. N., Patel, J. K. and Gajera, R. H. (2021a) Backward

- and forward linkage of the potato growers with different system. *Guj. J. Ext. Edu.* 32(1):120-124.
- Raval, K. N., Patel, J. K. and Patel, H. A. (2021b) Association between characteristics of potato growers and knowledge of potato production technology. *Guj. J. Ext. Edu.* 32(2):120-124.
- Swinnen, J. (2006). Case studies on the Dynamics of Vertical Coordination in Agri-food Chains in Transition countries in Eastern Europe and Central Asia. ECSSD working paper no. 42, The World Bank, Washington, DC.
- Vegad, N. M., Chauhan N. B. and Vinaya Kumar H. M. (2021). Factors affecting knowledge about e-extension amongst the postgraduate scholars of agricultural extension and communication. *Guj. J. Ext. Edu.* 32 (2): 81-84.
- Vinaya Kumar H. M., and Shivamurthy, M. (2021) Factor influencing fishery-based farmers' perception and their response to climate-induced crisis management. *Environ. Dev. Sustain.*, 23, 11766–11791. Springer, <https://doi.org/10.1007/s10668-020-01141-x>

Received : September 2023 : Accepted : November 2023