

## **Socio-economic Impact of Contract Farming**

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### **ABSTRACT**

The study was conducted in Burdwan district of West Bengal with randomly selected 50 potato contract and 50 non contract potato growers as respondents to assess the impact of contract farming. From the study it was found that contract farming helps the farmers to diversify their farming. After engaging in contract farming farmers cultivated more number of crops per season and they also cultivated more number of potato varieties. The acreage under vegetable crop was also increased more than 165 per cent than before. Significant increase was found after introduction of contract farming in case of employment opportunity (56.61%) and acreage under potato crop (57.54%). The net benefit from potato was 33.83 per cent higher in case of contract farmers than non contract farmers. In case of input utilization contract farmers used 128.94 per cent more seed per acre, 15.85 per cent more urea per acre than non contract farmers.

Farming is an age-old means of livelihood for millions of Indians. However, there have been few systems or models in which farmers are assured of a market for their produce and can get a remunerative price. Farmers some time do not sell their products to the buyers as they do not get assured price of their product. On the other hand, the agri-based and food industry requires timely and adequate inputs of good quality agricultural produce. 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. Contract farming can be defined as an agreement between farmers and processing and/or marketing firms for the production and supply of agricultural products under forward agreements, frequently at predetermined prices (Eaton and Shepherd, 2001). In our country the farmers face the problems of traditional technology and management practices, little bargaining power with input suppliers and produce markets, inadequate infrastructure and market information, lack of post-harvest management expertise, poor package of produce and inadequate capital to grow a quality crop. Contract farming can help small farmers to overcome these situations and also encourage them to participate in the production of high value crops which

will increase their real income as well as the employment opportunity Kumar and Prakash (2008).

In view of the above and also contract farming implications, the present study was made to assess the socio- economic impact of contract farming.

### **METHODOLOGY**

The present study was conducted on potato contract farming under Pepsi Co. in West Bengal as potato is one of the major crop in West Bengal and it is the second largest producer of potato in the country. The potato contract farming model of Pepsi Co. in West Bengal is running quite successfully. So the present study on contract farming is designed to conduct under Pepsi Co. in West Bengal.

Burdwan district was selected purposively for the study as it is the largest producer of potato (0.45 million hectares area and 1.2 million MT production) in West Bengal. Two blocks were selected from the district by the method of simple random sampling. Memari I block was selected for contract farmers and Golshi I was selected for non contract farmers. Two villages were selected from each of the two blocks by simple random sampling technique. Twenty five respondents from each

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village were selected by the same method. Thus total of hundred respondents were selected from four villages. Out of these hundred respondents fifty were contract farmers and other fifty were non contract farmers.

The indicators chosen for the study of socio – economic impact of contract farming were farm diversification, employment opportunity, input utilization, acreage of potato and net benefit from potato.

### RESULTS AND DISCUSSION

The first indicator to measure the socio- economic impact of contract farming was farm diversification and there were three dimensions under this indicator viz. number of crops the farmer cultivated, number of potato varieties the farmer grew and acreage of vegetable crop. To assess the impact, a Before- After control group research design has been followed.

The number of crops the contract farmers cultivated before and after the advent of contract farming is presented in Table No. 1. Before the introduction of contract farming 50 per cent of farmers grew two crops only in a year. Maximum of them grew paddy and potato. Among the contract farmers 44 per cent grew three crops and 2 per cent of them grew four crops annually. But after the advent of potato contract farming in the area maximum number of farmers started to grow three crops annually. They cultivated paddy, potato and vegetables. No one of the respondents grew single crop in a year now. From the table it is evident that 24 per cent of the contract farmers cultivated four crops annually. The number of crops cultivated by the contract farmers in a year increased 30.33 per cent after the introduction of contract farming.

**Table 1. Distribution of the contract farmers by number of crops they cultivated annually before and after the introduction of contract farming**

N= 50

No. of crops	Before		After	
	Frequency	Percentage of respondents	Frequency	Percentage of respondents
One crop	2	4.00	0	0.00
Two crops	25	50.00	3	6.00
Three crops	22	44.00	35	70.00
Four crops	1	2.00	12	24.00
Total (N)	50	100.00	50	100.00
Mean	2.44		3.18	

In case of non contract farmers the respondents were asked how many crops they cultivate now (at the time of study) in a year. The results are presented in the following Table No. 2. No one of the farmers grew one crop in a year. Maximum of the non contract farmers

grew three crops annually. From the table it is clearly observed that the mean number of crops grown by the non contract farmers was less than the number of crops grown by the contract farmers.

**Table 2. Distribution of the non contract farmers by number of crops they cultivated**

N= 50

No. of crops	Frequency	Percentage of respondents
One crop	0	0.00
Two crops	14	28.00
Three crops	30	60.00
Four crops	6	12.00
<b>Total (N)</b>	<b>50</b>	<b>100.00</b>
Mean	<b>2.84</b>	

The number of potato varieties cultivated by the contract farmers before and after the introduction of contract farming in the study area is presented in Table No. 3. From the table it can be conclude that the number

of potato varieties cultivated by the contract farmers had been drastically increased after the introduction of potato contract farming. Before the advent of contract farming in the study area more than half of the respondents

cultivated only one variety of potato and 40 per cent of them cultivated two varieties but after engaging in contract farming no one of them cultivated one or two varieties. It is observed from the table that more than three fourth (76%) of the respondents cultivated four varieties in a

season after the introduction of contract farming. After introduction of contract farming they started to grow some new varieties like Atlanta, Chipsona along with old varieties like Jyoti, Chandramukhi, Pokhraj, Surja.

**Table 3. Distribution of the contract farmers by number of potato variety they cultivated before and after the introduction of contract farming**

N= 50

No. of potato varieties	Before		After	
	Frequency	Percentage of respondents	Frequency	Percentage of respondents
One variety	28	56.00	0	0.00
Two varieties	20	40.00	0	0.00
Three varieties	2	4.00	12	24.00
Four varieties	0	0.00	38	76.00
<b>Total (N)</b>	<b>50</b>	<b>100.00</b>	<b>50</b>	<b>100.00</b>
<b>Mean</b>	<b>1.48</b>		<b>3.76</b>	

The number of potato varieties cultivated by the contract farmers had been increased after the introduction of potato contract farming in the study area because the farmers did not only cultivate the varieties which were provided by the company. Those varieties are specially made for chips making and not suitable for table purpose. So they also cultivated other varieties beside the chips quality variety as because the chips quality varieties have low market price than other table purpose potato varieties in open markets.

In Table 4 the number of potato varieties grown by the non contract farmers is presented. The table depicts that the most of the non contract farmers cultivated two varieties in a season. The two most cultivated varieties were Jyoti and Chandramukhi. The mean number of varieties cultivated by the non contract farmers was significantly less than the mean number of varieties cultivated by the contract farmers.

**Table 4. Distribution of the non contract farmers by number of potato variety they cultivated**

N= 50

No. of varieties	Frequency	Percentage of respondents
One variety	14	28.00
Two varieties	26	52.00
Three varieties	10	20.00
<b>Total (N)</b>	<b>50</b>	<b>100.00</b>
<b>Mean</b>	<b>1.92</b>	

The acreage of vegetable crop cultivated by the contract farmers before and after the introduction of contract farming in the study area was analysed and presented in Table No. 5. The table clearly depicts that before the introduction of contract farming in the study area 74 per cent of the contract farmers had vegetable cultivation in 0 to 0.20 hectare area but after engaging in the contract farming 78 per cent of the farmers

cultivated vegetable more than 0.20 hectare area. From the table we can conclude that the area cultivated under vegetable crop by the contract farmers before and after the advent of contract farming increased 165.15 per cent. The increase in acreage of vegetable crop cultivation was due to the assured price and higher income obtained through participation of the farmers in the contract farming.

**Table 5. Distribution of the contract farmers by the acreage of vegetable cultivation before and after the introduction of contract farming**

N= 50

Acreage of vegetable (in ha.)	Before		After	
	Frequency	Percentage of respondents	Frequency	Percentage of respondents
0 to 0.20	37	74.00	11	22.00
0.21 to 0.4	11	22.00	27	54.00
0.41 to 0.6	1	2.00	6	12.00
0.61 to 0.80	1	2.00	6	12.00
<b>Total (N)</b>	<b>50</b>	<b>100.00</b>	<b>50</b>	<b>100.00</b>
<b>Mean</b>	<b>0.132</b>		<b>0.350</b>	

The acreage of vegetable cultivated by the non contract farmers is presented in Table No. 6. The table clearly shows that 40 per cent of the non contract farmers cultivated vegetable in 0 to 0.20 hectare area and 60 per

cent of the respondents cultivated vegetable more than 0.20 hectare of land. The mean area cultivated under vegetable crop by the non contract farmers was 0.277 hectare.

**Table 6. Distribution of the non contract farmers by the acreage of vegetable cultivation**

N= 50

Acreage of vegetable (in ha.)	Frequency	Percentage of respondents
0 to 0.20	20	40.00
0.21 to 0.4	18	36.00
0.41 to 0.6	9	18.00
0.61 to 0.80	3	6.00
<b>Total (N)</b>	<b>50</b>	<b>100.00</b>
<b>Mean</b>	<b>0.277</b>	

So contract farming can effectively diversify the farming activity of the contract farmers. Similar result was found in the study of Singh (2000b) who examined the role of contract farming in agricultural diversification in Punjab, India.

The next indicator was change in employment opportunity after the introduction of potato contract farming in the study area. To measure this indicator the man- hour (eight hours per man) employed per hectare in potato cultivation before and after the venture of contract farming was calculated and compared. The result is presented below in Table No. 7.

**Table 7. Man- hour employed per hectare in potato cultivation by the contract farmers and non contract farmers**

Respondents	category	Average man-hour employed (per ha.)
Contract farmer	Before	444.56
	After	696.24
Non contract farmer		459.55

From the above table it is clearly observed that after the introduction of contract farming the man hour employed per hectare for potato cultivation was increased 56.61 per cent. The man hour employed per hectare in potato cultivation for the contract farmers was 51.51 per cent higher than the man- hour employed by the non contract farmers for the same. The employment opportunity was increased after introduction of contract farming because there was an increase in area under potato cultivation and the farmers had to perform many other activities like proper harvesting and grading of the harvested product, testing of quality of the product etc. These new activities required additional labour, which ultimately leads in additional employment opportunity. The studies conducted by Singh (2000) and Dev and Rao (2005) also indicated the similar result i.e. contract farming increases the employment opportunity.

In Table No. 8 the amount of various inputs (seed and fertilizers) utilized to produce one acre of potato by the contract farmers before and after involving in contract farming and by the non contract farmers are presented.

From the table it is clearly observed that there was tremendous increase in seed utilization. The increase in seed utilization by the contract farmers after involving in contract farming was because they used 30 gm. to 35gm. weight of cut tuber with three to four eyes as planting material after engaging in contract farming where as the weight of cut tuber for planting was 5 gm. to 10 gm. with only one eye before the intervention of contract farming in the area. This requires higher amount of seed per hectare. The other inputs like urea, DAP, MOP and

NPK was also increased but not of that much of seed. The use of urea, DAP, MOP and NPK was increased by the contract farmers 4.37, 7.23, 7.59 and 4.30 per cent respectively after engaging in contract farming. The table also shows that the contract farmers used 128.94 per cent more seed and 15.85 per cent more urea per acre than the non contract farmers but in case of DAP, MOP and NPK non contract farmers used 34, 8.75 and 37.38 per cent more than the contract farmers.

**Table 8. Input utilization by the contract farmers (before and after the introduction of contract farming) and non contract farmers**

Inputs	Average utilization ( Kg./Acre)		
	Contract farmer		Non contract farmer
	Before	After	
Seed	193.20	645.60	282.00
Urea	69.60	72.64	62.70
DAP	178.40	191.30	256.34
MOP	93.50	100.60	109.40
NPK	265.20	276.60	380.00

The Table 9 shows the area under potato crop cultivated by the contract farmers before and after the introduction of contract farming in the study area and the area under potato crop cultivated by the non contract farmers. From the table it is clearly observed that after the introduction of potato contract farming in the study area the area under potato cultivation by the contract farmers was increased 57.54 per cent than before. It is also observed that the contract farmers cultivated 32.45 per cent more area under potato crop than the non contract farmers.

**Table 9. Area under potato cultivation by the contract and non contract farmers**

Respondents category	Average area under potato (ha.)	
Contract farmer	Before	0.829
	After	1.306
Non contract farmer		0.986

The net benefit from potato for the contract and non contract farmers is presented in the Table No. 10. It is observed from the table that the net benefit per hectare of the contract farmers was 33.83 per cent more than the non contract farmers. The average net benefit of the non contract farmers was Rs. 21520 per hectare where as in case of contract farmers the net benefit was Rs. 28800 per hectare.

**Table 10. Net benefit from potato**

Respondents category	Net benefit (Rs. /ha.)
Contract farmer	28800
Non contract farmer	21520

The net benefit from potato for the non contract farmers was less because their high cost of cultivation due to higher use of inputs. The result is similar to the result of the study of Ramasundharam et al. (2005) and Joshi et al. (2006). Their results also indicated that the contract farming helps the farmers to get more income.

## CONCLUSION

From the above study it can be conclude that the contract farming has immense potential in farm diversification and employment oppourtinity. Thus it can help the farmers to produce more number of crop in a season and also reduce unemployment in rural area. By providing assured income to the farmers it can also help the farmers to get more benefit from potato. The extension specialists of the contracting firm advocates judicious use of input to the contracted farmers so the farmers used lesser amount of fertilizers than the noncontract farmers. It was also found that after engaging contract farming the farmers sown appropriate weight of cut tuber with appropriate number of eyes per tuber which helped

them to get more production of potato with high quality of product. This may be due to increased awareness of the farmers about potato production technology as well as the effective advices provided by the company specialists.

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