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Socioeconomic characteristics of contract and non-contract farmers of bottle gourd in the Jaipur district of Rajasthan

Arjun Singh Rajput*, Vikalp Sharma **, Dr. R.C. Sharma *
*M.Sc. Student, SKN Collage of Agriculture, Jobner-Jaipur
**Ph.D Scholar Dept. of Agricultural economics and management RCA, MPUAT Udaipur
*** Professor & Head of Department of Agricultural Economics SKN, Jobner, Jaipur

ABSTRACT
The present investigation was undertaken with a view to studying the socioeconomic characteristics of contract and non-contract farmers in the production of bottle gourd on the contract vis-à-vis non-contract farms in the Jaipur district of Rajasthan. A list of 26 villages having contract farming in bottle gourd was obtained from the tehsil headquarter. From that list three villages were selected randomly. From these villages, 30 contract farmers were selected randomly and 20 non-contract farmers resembling to the contract farmers except contract component were also selected to make a comparative study of the contract farming vis-à-vis non-contract farming.Primary data were collected for the agricultural year 2015-16. The results indicate that contract farmers has larger land holding and their education level is also higher than non contract farmers. In Jaipur, the average income from bottle gourd on contract farmers is higher than non contract farmers, which shows their higher socio-economic status and technological advancement. Farmers need to increase their income by enhancing productivity through improved crop and land management practices Farmers need to form cooperative societies to enable them do collective marketing of their farm produce and purchase of farm inputs in order to benefit from the economies of scale.
Key words: Contract farming, Socio-economic characters, Bottle gaurd

INTRODUCTION

Agriculture and allied activities contribute 13.9 per cent to the gross domestic product of the country and provide livelihood to more than   58 per cent of the country's population (Economic Survey, 2012-13). Contract farming is a type of contractual arrangements, between farmers and companies, whether oral or written, specifying one or more conditions of production and / or marketing of an agricultural product [1-3]. Thus, it is a system for the production and supply of agricultural produce under forward contracts. The commitment under such contracts ensures commitment to provide an agricultural commodity of a type, at a time, at a price, and in the quantity required by the known buyer. Basically it comprises four things *viz*., pre-agreed price, quality, quantity or acreage (minimum/maximum) and time. Contract farming reduces the risk and uncertainty in the price of the commodity under contract. Growers are ensured a stable and sustained market for their produce. India with vegetable production of 146.55 million t is the second largest producer of vegetables contributing 14% of world's vegetable production. With an area of 8.5 million hectares under vegetables, the average productivity of vegetables in India is 17.3 t/ha in 2010-11. An area, production and productivity of Rajasthan are 1.4 million ha, 10.719 tonnes and 6.3 t/ha, respectively (Vegetable Statistics – IVRI (2010-2011). In Rajasthan contract farming is done mainly in Jaipur, Jodhpur, Sikar, Ajmer, Ganganager, Kota, Bharatpur, Hanumangar, Alwar, Jhalawar and Udaipur districts. In Jaipur district watermelon, bottle gourd, cucumber, etc. are the major growing cucurbits under contract basis [4-8]. In Jaipur district Bassi, Jhotwara and Shahpura are the major blocks for the production of bottle gourd with an area and production of 125 hectare (360qt/ha), 65 hectare (350qt/ha) and 50 hectare (350qt/ha), respectively.

MATERIAL AND METHODS

Selection of the study area and crop
In Jaipur district contract farming in case of cucurbits was prevalent only in three tehsils namely Bassi, Jhotwara and Shahpura. Among these three tehsils, Bassi tehsil occupies first place in area and production of bottle gourd. Therefore, bottle gourd and bassi tehsil were selected purposively as study crop and study area, respectively.

Sampling procedure:
Multi stage stratified random sampling technique was used for drawing a sample for the present study. At first stage of sampling, the block in the district was selected. At the second stage of sampling, the villages in the block were selected. At the third stage of sampling, the wheat growers were selected as respondents.

Selection of the villages
A list of 26 villages having contract farming in bottle gourd was obtained from the tehsil headquarter. From that list three villages namely Dhindon, Damodarpura and Kacholiya were selected randomly.

Selection of the farmers
A list of 127 bottle gourd growers was prepared with the help of supervisor. Out of 127 bottle gourd growers, 57 were contract and 70 were non-contract farmers. From that list 50 farmers were selected randomly. Out of 50 farmers, 30 farmers were contract and 20 were non-contract.

Collection of data
Primary data were collected for the study. The primary data in respect of cost of cultivation, cost of production, returns from bottle gourd, marketing costs and margins of bottle gourd crop were collected from the producer farmers, contracting firm, wholesalers-cum-commission agents and retailers through personal interview method with the help of a pretested schedule specifically prepared (standardized) for the purpose.

Analysis of data
After collection, the data were compiled, tabulated and analyzed according to the selected categories of sample farms. Mainly tabular analysis was done and simple averages, percentages, standard deviation and coefficient of variation were calculated.

Table: 1 Details of sample selection

Available contract farmers			
Size Group	**Number of farmers**		**Total**
	Dhindon	Damodarpura	Kacholiya	
Small (< 0.341 ha)	4	3	3	10
Medium (0.341-0.999 ha)	15	10	5	30
Large (> 0.999 ha)	7	5	5	17
Total	26	18	13	57
Selected contract farmers			
Size Group	**Number of farmers**		**Total**
	Dhindon	Damodarpura	Kacholiya	
Small (<0.341 ha)	1	1	1	3
Medium (0.341-0.999 ha)	8	7	3	18
Large (>0.999 ha)	3	3	3	9
Total	12	11	7	30

All the selected contract and non-contract farmers were arranged in ascending order on the basis of area under bottle gourd and categorized into three categories small, medium and large with the help of mean and standard deviation. In case of contract farming farmers were categorized into small (<0.341 ha), medium (0.341-0.999 ha) and large (>0.999 ha) while in non-contract farming farmers were categorized into small (<0.105 ha), medium (0.105-0.581 ha) and large (>0.581 ha).

Table: 2 Details of sample selection

Available non-contract farmers			
Size Group	**Number of farmers**		**Total**
	Dhindon	Damodarpura	Kacholiya	
Small (<0.105 ha)	10	5	3	18
Medium (0.105-0.581 ha)	18	12	9	39
Large (>0.581 ha)	4	4	5	13
Total	32	21	17	70
Selected non-contract farmers			
Size Group	**Number of farmers**		**Total**
	Dhindon	Damodarpura	Kacholiya	
Small (<0.105 ha)	1	1	-	2
Medium(0.105-0.581 ha)	7	5	3	15
Large (>0.581 ha)	1	1	1	3
Total	9	7	4	20

Gross income

Synonymous with value of output (both main product and by-product) evaluated at harvest prices. Symbolically:

$$GI = Q_m \times P_m + Q_b \times P_b$$

where,

GI = Gross Income

Q_m = Quantity of main product

P_m = Price of main product

Q_b = Quantity of by-product

P_b = Price of by-product

Net income (NI)

It is the net profit after deducting all cost items *i.e.,* variable and fixed costs from gross income.

NI = Gross income – Total cost (Cost C_2)

RESULT AND DISCUSSION

Socioeconomic characteristics of contract and non-contract farmers

This section deals with the socio economic characteristics of contract and non-contract farmers based on their (i) average size of land holdings (ii) age (iii) educational status and (iv) average income. These are discussed as under:

Size of operational land holding

Operational land holding represents the actual area under bottle gourd cultivation irrespective of the right of ownership. Table 3 shows the average size of land holdings on contract and non-contract farms. The average size of the operational land holding on contract and non-contract farms was 0.63 and 0.40 ha, respectively. Operational land holding ranged from 0.25 ha on small farms to 1.11 ha on large farms in case of contract farms and from 0.10 ha to 0.83 ha on non-contract farms.

Table 3: Average size of operational land holding on different size groups/categories of contract and non-contract farms (2015-16)(In hectare)

Farm size group/Category	Contract farms (N=30)	Non- contract farms (N=20)
Small	0.25	0.10
Medium	0.52	0.27
Large	1.11	0.83
Overall	0.63	0.40

Owners age-wise distribution of contract and non-contract farms

The age-wise distribution of contract and non-contract farms has been depicted in table 4.The table indicates that out of 30 contract farmers, 43.33 per cent fall in the age group of 41-50 years and 26.67 per cent in the age group of 31-40 years. 23.33 per cent of the farmers were of more than 51 years age and only 6.67 per cent were of less than 30 years age. In case of non-contract farmers (out of 20), 45 per cent lay within the age group of 41-50 years and 25 per cent in 31-40 years age group. Of the total non-contract farmers, 20 per cent were of more than 51 years and 10 per cent of less than 30 years age group.

Table 4 Owners age-wise distribution of contract and non- contract farms (2015-16) (In number)

S. No.	Age(Years)	Small	Medium	Large	Total
Contract farms					
1	Less than 30	-	2(11.11)	-	2(06.67)
2	31-40	1(33.33)	4(22.22)	3(33.33)	8(26.67)
3	41-50	2(66.67)	7(38.89)	4(44.47)	13(43.33)
4	51 and above	-	5(27.78)	2(22.22)	7(23.33)
Total		3(100)	18(100)	9(100)	30(100)
Non-contract farms					
1	Less than 30	-	2(13.33)	-	2(10)
2	31-40	-	4(26.67)	1(33.33)	5(25)
3	41-50	1(50)	6(40)	2(66.67)	9(45)
4	51 and above	1(50)	3(20)	-	4(20)
Total		2(100)	15(100)	3(100)	20(100)

Figures in parentheses indicate percentage of the total respondents.

Educational status of contract and non-contract farms owners
The educational status of contract and non-contract farmers has been depicted in table 5. The table indicates that out of 30 contract farmers, 3.33 per cent were illiterate, 13.33 per cent farmers were educated up to primary, 30 per cent up to middle level, 26.67 per cent up to secondary level and 16.67 per cent up to higher secondary level.

Table 5 : Educational status of contract and non-contract farms owners (2015-16) (In number)

S. No.	Level of education	Small	Medium	Large	Total
Contract farms					
1	Illiterate	-	1(5.55)	-	1(3.33)
2	Primary	1(33.33)	3(16.67)	-	4(13.33)
3	Middle	2(66.67)	4(22.22)	3(33.34)	9(30)
4	Secondary	-	6(33.33)	2(22.22)	8(26.67)
5	Higher secondary	-	3(16.67)	2(22.22)	5(16.67)
6	Graduation	-	1(5.56)	2(22.22)	3(10)
Total		3(100)	18(100)	9(100)	30(100)
Non-contract farms					
1	Illiterate	1(26.47)	3(30.77)	-	4(20)
2	Primary	1(32.35)	4(19.23)	1(33.33)	6(30)
3	Middle	-	3(11.54)	-	3(15)
4	Secondary	-	1(15.39)	1 (33.33)	2(10)
5	Higher secondary	-	3(3.84)	1(33.34)	4(20)
6	Graduation	-	1(19.23)	-	1(5)
Total		2(100)	15(100)	3(100)	20(100)

Figures in parentheses indicate percentage of the total.

Only 10 per cent of the contract farmers were educated up to graduation. Similarly, in case of non-contract farmers 20 per cent farmers were illiterate and 30 per cent were educated up to primary level. Of the total non-contract farmers, 15 per cent, 10 per cent, 20 per cent and 5 per cent were educated up to middle, secondary, higher secondary and graduation level, respectively.

Average income from bottle gourd crop
The average income from bottle gourd crop on contract and non-contract farms has been depicted in table 6. The table indicates that the average income from bottle gourd on contract and non-contract farms was of the order of Rs74212.18 and Rs56352.54, respectively. The per hectare average income from the crop was noted to be the highest Rs81330.67 on large farms followed by medium (Rs74818.87) and small (Rs66487.01) farms, respectively. In case of non-contract farms, it was observed to be the highest on large farms (Rs64156.42) and lowest on small farms (Rs 48034).

Table 6: Average income from bottle gourd crop on contract and non-contract farms (2015-16) (InRs)

S. No.	Size group	Contract	Non-contract	Differential income
1	Small	66487.01	48034.00	18453.01(38.42)
2	Medium	74818.87	56867.93	17950.94(31.57)
3	Large	81330.67	64156.42	17174.25(26.77)
4	Overall	74212.18	56352.54	17859.64(31.69)

Figures in parentheses indicate per cent increase over contract farms.

CONCLUSION

The socio economic characteristics that were studied included average size of land holdings, age, educational status and average income. It is concluded from the research that contract farmers has larger land holding and their education level is also higher than non contract farmers. In Jaipur, the average income from bottle gourd on contract farmers is higher than non contract farmers, which shows their higher socio-economic status and technological advancement. Farmers need to increase their income by enhancing productivity through improved crop and land management practices. Farmers need to form cooperative societies to enable them do collective marketing of their farm produce and purchase of farm inputs in order to benefit from the economies of scale.

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