

Production, Marketing and Price of Bottle Gourd on Contract and Non-Contract Farms in Jaipur District of Rajasthan

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Abstract

The present investigation was undertaken with a view to study the effect of contract farming on the production, marketing and price under contract and non-contract farming of bottle gourd. The ROCL Ltd. was selected which was engaged in the contract farming related to cucurbits and other vegetables. For this study, 30 contract and 20 non-contract farmers were selected randomly. The study was based on primary data for the agricultural year 2015-16. The contract farmers and ROCL Ltd. sold bottle gourd production to the retailers by using auction method with the help of Wholesaler-cum-commission agent. Contrary to this, the non-contract farmers adopted two channels for sale of bottle gourd. The total marketing cost in selling of bottle gourd was Rs. 225.04 per quintal in channel-II. In channel-I (Producer → Consumer), there was no marketing cost. In case of contract farmers and ROCL Ltd. it amounted Rs. 265.99 per quintal and Rs. 284.94 per quintal, respectively. Among the various functionaries, retailers got the highest margin of profit.

Key words: Contract farming, Gross income, Margin, Marketing channel

JEL Classification: D24, Q11, L11, C02

Introduction

India has been a predominantly agrarian economy since time immemorial. The developmental efforts made over the last four decades have undoubtedly strengthened our industrial base, but the growth rate of GDP of agriculture and allied sector declined from 9.6 per cent in 1996-97 to 6.0 per cent in 2005-06 and further 3.6 per cent in 2011-12

to 1.8 per cent in 2017-18 (Economic Survey, 2017-18). India with vegetable production of 146.55 million tons is the second largest producer of vegetables contributing 14% of world's vegetable production in 2017-18. With an area of 10.4 million hectares under vegetables, the average productivity of vegetables in India was 17.3 t/ha in 2017-18. In Rajasthan 1.7 million ha area was under vegetable cultivation in 2017-18 with production of 17.675 tons and productivity of

6.3 t/ha. (Vegetable Statistics – IIVR, 2017-2018).

ROCL Ltd. entered in the production and marketing of vegetables, fruits and flowers. In Jaipur district Bassi, Jhotwara and Shahpura are the major blocks for the production of bottle gourd jointly having an area of 240 hectares under vegetable production (DES, GOR).

In the production of bottle gourd, farmers and contracting firms face many problems like transfer of technology, supply of quality seed, arrangements of institutional credit, fertilizers and other inputs, market arrangements, timely payments, violation of terms and conditions, lack of proper management by the company, frequent price fluctuations in markets, lack of transport facilities during peak periods, etc. for solving such problems it is necessary to first identify the problems and reasons thereof so that corrective measures may be resorted to tackle them. It is, therefore, of immense importance to examine the production, marketing and price of bottle gourd on Contract and non-Contract Farms in the Jaipur district of Rajasthan to devise appropriate production and marketing strategy.

Data Sources and Methodology

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 ranks first in area and production of bottle gourd. Therefore, Bassi tehsil was selected purposively for the study purpose. Multi stage stratified random sampling technique was used for drawing a sample for the present study. A list of 26 villages having contract farming in bottle gourd was obtained from the Bassi tehsil. Three villages namely Dhindon,

Damodarpura and Kacholiyawere selected randomly. Out of 127 bottle gourd growers (57 were contract farmers and 70 were non-contract farmers), 50 farmers were selected randomly for the study of which, 30 were contract and 20 were non-contract farmers. The contracting firm ROCL Ltd. was also selected for the study.

The marketing costs and margins were calculated by using the following formula:

$$C = C_0 + C_{mi} + C_{m2} + \dots + C_{mn}$$

Where,

C = Total cost of marketing of bottle gourd

C_0 = Cost of marketing of bottle gourd incurred by the producer farmer

C_{mi} = Cost of marketing of bottle gourd incurred by the i^{th} middleman

$i = 1, 2, 3, \dots, n$

Price spread

The breakup of costs, margins and share of the producer farmer and different market middlemen were worked out in the consumer's price in simple percentage terms.

For calculation of production and price of bottle gourd on contract and non-contract farms simple averages and percentages were computed to arrive at the conclusions.

Results and Discussion

Production of an agricultural commodity is complete only when it reaches to ultimate consumers. Here, an attempt has been made to analyze the marketing channels and to estimate the costs and losses incurred and prices received by the various marketing agencies and farmers involved in the marketing of bottle gourd in the study area.

Production and price of bottle gourd on contract and non-contract farms

Table 1 depicts the production of bottle gourd on contract and non-contract farms. The table indicates that overall production per hectare of bottle gourd on contract farms was worked out at 195.86 q. It was higher by 10 q (5.38 %) than that on non-contract farm. Category wise the production of bottle gourd on contract farms varied from 181.68q on small farms to 209.64q on large farms. In case of non-contract farms production of bottle gourd varied from 162.29q on small farms to 207.87q on large farms. Category wise production difference of bottle gourd on contract and non-contract farms was highest on small farms (11.95 %) followed by medium (4.71 %) and large (0.85 %) with an overall difference of 5.38 per cent. The production of bottle gourd was more on center ROCL Ltd. (334.85q) than the contract and non-contract farms due to use of new technology, experienced labour power, quality seeds, intensive use of inputs. The production of bottle gourd was more on contract farms probably because of better care by the producer farmers at the time of sowing to harvesting, variation in the input use particularly quality seeds. As against this, non-contract farms particularly used local

varieties of seeds, along with low level of input use and low investment. These findings were in conformity with (Singh *et al*, 2006), (Sharma 2008), (Swain 2009), (Senthilnathan *et al*, 2010) and (Roopa *et al*, 2013). Category wise per hectare production of bottle gourd increased with the increase in the size group of farms on contract and non-contract farms due to intensive use of inputs.

Price of bottle gourd on contract and non-contract farms

The category wise average selling prices of bottle gourd on contract and non-contract farms have been depicted in table 2. The table indicates that the overall selling prices of bottle gourd on contract farms were of the order of Rs. 844.16 per quintal and on non-contract farms of Rs. 745.31 per quintal, respectively. On contract farms the bottle gourd was higher by Rs. 98.84 per quintal (13.26 %) than on non-contract farms. The per quintal selling price of the bottle gourd was noted to be the highest (Rs. 903.55) on large farms followed by medium (Rs. 845.88) and small (Rs. 783.04) under contract farms. Similarly, in case of non-contract farms, it was observed to be the highest on large farms (Rs. 833.56) followed by medium (Rs. 751.59) and small (Rs. 650.78) under non-contract farms. The per quintal selling price of the bottle gourd

Table 1: Category-wise production of bottle gourd on contract and non-contract farms, 2015-16 (q/ha)

Category of farm	Size of land holdings			Overall
	Small	Medium	Large	
Contract farms	181.68	196.26	209.64	195.86
Non-contract farms	162.29	187.43	207.87	185.86
Difference	19.39	8.83	1.77	10.00
	(11.95)	(4.71)	(0.85)	(5.38)

Note: Figures in parentheses are the per cent increase in production on contract farms over non-contract farms

Table 2: Category-wise selling price of bottle gourd on contract and non- contract farms, 2015-16 (Rs/ha)

Category of farm	Size of land holdings			Overall
	Small	Medium	Large	
Contract farms	783.04	845.88	903.55	844.16
Non-contract farms	650.78	751.59	833.56	745.31
Difference	132.26	94.29	69.99	98.84
	(20.32)	(12.54)	(8.40)	(13.26)

Note: Figures in parentheses are the per cent increase in price on contract farms over non-contract farms

was noted to be the highest (Rs. 1111.98) on center ROCL Ltd. than the contract and non-contract farms. Category wise selling price difference of bottle gourd on contract and non-contract farms was highest on small farms (20.32 %) followed by medium (12.54 %) and large farms (8.40 %) with an overall difference of 13.26 per cent. The selling price of bottle gourd was higher on contract farms than on non-contract farms because the contract farmers sold their produce in large sabjimandies (Muhanamandi, Lalkothimandi and Sanganersabjimandi) where demand of bottle gourd was more than the local mandies. These findings were in confirmity with Obare and Kariuki (2003), Singh *et al.* (2006). In case of category wise selling price difference of bottle gourd was higher on small to large farms because the production quintal per hectare was decreased between contract and non-contract farms.

Marketing channels adopted by contract farmers

A marketing channel is the route through which produce moves from the producers to the ultimate consumers. The length of the channel varies from commodity to commodity depending on the quantity of the produce to be moved, the form of consumer demand and

the degree of regional specialization in the production. In the study area, contract farmers of bottle gourd were observed to adopt the only following channel in marketing of bottle gourd:

Producer → Wholesaler-cum-commission agent → Retailer → Consumer

Contract farmers sold their bottle gourd produce to the Retailers by using auction method with the help of Wholesaler-cum-commission agent and finally retailer sold to the consumer. This channel was adopted by 100 per cent contract farmers in the study area. Among the different size groups of farmers, this channel was adopted by 3 small, 18 medium and 9 large farmers respectively.

Marketing channel adopted by non-contract farmers

Channel-I (Producer → Consumer)

In this channel, non-contract farmers sold their bottle gourd produce directly to the consumers. Table 3 shows that this channel was adopted by 25.93 per cent of selected non-contract farmers in selling of bottle gourd produce in the study area. Among the different size groups of farmers, this channel was adopted by 50 per cent small, 25 per cent medium and none of the large farmers.

Table 3: Distribution of non-contract farmers adopting different marketing channels, 2015-16

Name of the marketing channel	Size groups			Total N =20
	Small N = 2	Medium N = 15	Large N =3	
Producer → Consumer	2 (50)	5 (25)	-	7 (25.93)
Producer → Wholesaler-cum-commission agent →Retailer → Consumer	2 (50)	15 (75)	3 (100)	20 (74.07)
Total	4 (100)	20 (100)	3 (100)	27* (100)

Notes: * The total number of sellers exceeds 20 in case of non-contract farmers because some of the producer farmers adopted more than one channel.

** Figures in the parentheses are the percentages by their respective column totals.

Channel-II (Producer → Wholesaler-cum-commission-agent → Retailer → Consumer)

Table 3 shows that 74.07 per cent of total selected non-contract farmers marketed their bottle gourd produce through this channel. Among these, different size groups of non-contract farmers, 50 per cent small, 75 per cent medium and 100 per cent large farmers adopted this channel.

This channel was the most common marketing channel adopted by non-contract farmers in the study area. In this channel, producer farmers sold bottle gourd to the retailer with the help of wholesaler. Finally, retailers sold bottle gourd to the consumer.

Marketing channel adopted by ROCL Ltd.

Producer → Wholesaler-cum-commission agent → Retailer → Consumer

In this marketing channel the center ROCL Ltd. sold bottle gourd to the retailers with the help of wholesaler in the mandi. Finally,

retailers sold bottle gourd to the consumers.

Marketing costs

Following kinds of marketing costs were incurred by different agencies including farmers engaged in the marketing of bottle gourd in the study area:

Costs of bottle gourd marketing incurred in channel-II adopted by the contract farmers

Producer → Wholesaler - cum - commission-agent → Retailer → Consumer

Transportation charges

The cost of transportation was one of the major components of marketing costs. This cost varied with the distance between producing point and selling point. In case of channel I (Table 4) the producer (contract) took the produce to the mandi and sold to the retailers in the presence of wholesaler by the auction method. After that, retailers sold bottle gourd to the consumers in local markets by which transportation cost borne

by retailers itself.

In this channel (contract farm)retailer incurred Rs. 25 per quintal and producer incurred on an average Rs. 30 per quintal on transporting the produce while in case of non-contract farmers (Table 5), it was an average Rs. 20 per quintal. In this channel, producer farmers and retailers incurred on an average Rs. 20 and Rs. 22 per quintal on

transportation, respectively.

Loading and unloading charges

Loading and unloading charges were important charges in the marketing of bottle gourd. In case of contract farmers and ROCL Ltd. the unloading @ Rs. 2.00 per bag (25-28kg/bag) and weighing charges @ Rs. 2.00 per bag (25-28kg/bag) were borne by Wholesaler-cum-commission agent. In case

Table 4: Marketing costs of bottle gourd incurred by the contract farmers, 2015-16 (Rs./quintal)

Particulars	Producer	Wholesaler	Retailer	Total costs
Transportation	30.00 (30.85)	-	25.00 (16.19)	55.00 (20.68)
VAT	-	0.94 (6.56)	-	0.94 (0.35)
Commission	28.20 (29.00)	-	56.40 (36.53)	84.60 (31.81)
Mandi fee	-	-	-	-
Cost of polythene bag*	4.00 (4.11)	-	12.00 (7.77)	16.00 (6.02)
Value of quantity lost	10.80 (11.11)	-	28.50 (18.46)	39.30 (14.77)
Loading charges	-	-	8.00 (5.18)	8.00 (3.01)
Unloading charges	8.00 (8.23)	-	-	8.00 (3.01)
Weighing charges	4.00 (4.11)	-	8.00 (5.18)	12.00 (4.51)
Miscellaneous charges**	4.25 (4.37)	5.40 (37.66)	8.50 (5.51)	18.15 (6.82)
Labour charge	8.00 (8.23)	8.00 (55.79)	8.00 (5.18)	24.00 (9.02)
Total cost	97.25 (100.00) [36.56]	14.34 (100.00) [5.39]	154.40 (100.00) [58.05]	265.99 (100.00) [100.00]

Notes: Figures in parentheses are the percentages of respective column totals. Figures in square brackets are the percentages by total marketing costs. * Farmers purchased polythene bags @ Rs. 4/bag and sold it to the retailer @ Rs. 3/bag, i.e., cost of polythene bag borne by the farmer was Rs. 1/bag** Miscellaneous charges include cost of tea and mobile charges.

Table 5: Marketing costs of bottle gourd incurred by the non-contract farmer, 2015-16 (Rs./quintal)

S. No.	Particulars	Producer	Wholesaler	Retailer	Total costs
1.	Transportation	20.00 (25.92)	-	20.00 (14.33)	40.00 (17.77)
2.	VAT	-	0.94 (11.27)	-	0.94 (0.42)
3.	Commission	28.20 (36.55)	-	56.40 (40.42)	84.60 (37.59)
4.	Mandi fee	-	-	-	-
5.	Cost of polythene bag*	4.00 (5.18)	-	12.00 (8.60)	16.00 (7.11)
6.	Value of quantity lost	6.70 (8.68)	-	22.65 (16.23)	29.35 (13.04)
7.	Loading charges	-	-	8.00 (5.73)	8.00 (3.55)
8.	Unloading charges	8.00 (10.37)	-	-	8.00 (3.55)
9.	Weighing charges	4.00 (5.18)	-	8.00 (5.73)	12.00 (5.33)
10.	Miscellaneous charges**	2.25 (2.92)	3.40 (40.77)	4.50 (3.22)	10.15 (4.51)
11.	Labour charge	4.00 (5.18)	4.00 (47.96)	8.00 (5.73)	16.00 (7.11)
	Total cost	77.15 (100.00) [34.28]	8.34 (100.00) [3.71]	139.55 (100.00) [62.01]	225.04 (100.00) [100]

Notes: Figures in parentheses are the percentages of respective column totals. Figures in square brackets are the percentages by total marketing costs* Farmers purchased polythene bags @ Rs. 4/bag and sold it to the retailer @ Rs. 3/bag, i.e., cost of polythene bag borne by the farmer was Rs. 1/bag.** Miscellaneous charges include cost of tea and mobile charges.

of non-contract farmers the unloading @ Rs. 2.00 per bag and weighing charges @ Rs. 1.00 per bag were borne by Wholesaler-cum-commission agent. The average loading charges paid by the retailers @ Rs. 2.00 per bag to the wholesalers.

Commission charges

In case of contract farmers commission charges were realized by the commission agent

(wholesaler) at the rate of 6.0 per cent of the value of bottle gourd. In case of non-contract farmers commission charges were realized by the commission agent (wholesaler) at the rate of 3.0 per cent of the value of bottle gourd.

In case of contract farmers total marketing costs were Rs. 265.99 per quintal. Out of this Rs. 97.25 (36.56 per cent), Rs. 14.34 (5.39 per cent) and Rs. 154.40 (58.05 per

cent) were incurred by the producer farmers, Wholesaler-cum-commission agent and Retailer, respectively.

In this channel, the retailer had borne maximum costs of marketing. The reason being that the commission charges, loading charges, transportation charges, weighing charges, labour charge were paid by retailer.

No cost was incurred in channel where bottle gourd moved from producer farmer to consumer directly and no marketing costs were borne by producer farmer itself.

Costs of bottle gourd marketing incurred in channel-II adopted by the non-contract farmers (Producer → Wholesaler-cum-commission agent → Retailer → Consumer)

In this channel, bottle gourd moved from producer farmers to retailers and then finally to consumers via wholesalers (commission agent) (Table 5). It is obvious from the table that the total marketing costs were Rs. 225.04 per quintal when producer farmers sold bottle gourd through channel-II. Out of this Rs. 77.15 (34.28 %), Rs. 8.34 (3.71 %) and Rs. 139.55 (62.01 %) were incurred by the producer farmers, Wholesaler-cum-commission agent and Retailer, respectively. In this channel the retailer had borne maximum costs of marketing. The reason being that the commission charge, loading charge, transportation charge, weighing, labour charge were paid by retailer.

Costs of bottle gourd marketing incurred in channel-II adopted by the center ROCL Ltd. Producer → Wholesaler-cum-commission agent → Retailer → Consumer

In this channel, bottle gourd moved from producer farmers to retailers and then finally to consumers via wholesalers (commission

agent) (Table 6). It is obvious from the table that the total marketing costs were Rs. 284.94 per quintal when producer farmers sold bottle gourd through channel-II. Out of this Rs. 116.05 (40.73 %), Rs. 18.34 (6.44 %) and Rs. 150.55 (52.83 %) were incurred by the producer farmers, Wholesaler-cum-commission agent and Retailer, respectively. In this channel the retailer had borne maximum costs of marketing. The reason being that the commission charge, loading charge, transportation charge, weighing, labour charge were paid by retailer.

Marketing costs, margins and price spread

Price spread refers to the difference between the price paid by the final consumer and the price received by the producer farmer for an equivalent quantity of farm produce. It is often known as farm retail spread or price spread. It includes the costs incurred in moving the produce from the point of production to the point of consumption and profits realized in that process by different market functionaries involved in the marketing of the product. The overall efficiency of marketing system is judged by the extent of price spread.

Price spread in marketing of bottle gourd in the only channel adopted by contract farmers (Producer → Wholesaler-cum-commission agent → Retailer → Consumer)

The price spread in marketing of bottle gourd by the producer farmer at mandi is presented in Table 7. The producer's net share in consumer's rupee in the sale of bottle gourd through the channel-I was Rs. 746.15 (57.40 %). In this channel the producers sold bottle gourd on an average price of Rs. 940.00 per quintal to the retailers by auction method with the help of wholesaler.

In this channel of sale, the producer farmers, wholesalers and the retailers incurred on an average Rs. 97.25, Rs. 14.34 and Rs. 154.40 per quintal as expenses, respectively. The wholesalers and retailers got a net margin of Rs. 82.26 and Rs. 205.60 per quintal, respectively. This accounted for 6.33 and 15.81 per cent of the consumer's price. The margin of wholesalers in this process was Rs.

82.26 per quintal of bottle gourd. Among the two market functionaries present in Channel-I retailers got the maximum margin.

Price spread in marketing of bottle gourd in channel-I (Producer → Consumer) adopted by non contract farmers

In this channel, the consumer paid Rs. 820.00 per quintal of bottle gourd and

Table 6: Marketing costs of bottle gourd incurred by the center ROCL Ltd, 2015-16 (Rs./quintal)

Particulars	Center ROCL Ltd.	Wholesaler	Retailer	Total costs
Transportation	40.00 (34.47)	-	30.00 (19.93)	70.00 ()
VAT	-	0.94 (5.13)	NA	0.94 (0.33)
Commission	28.20 (24.30)	-	56.40 (37.46)	84.60 (29.69)
Mandi fee	-	-	-	-
Cost of polythene bag*	4.00 (3.45)	-	12.00 (7.97)	16.00 (5.62)
Value of quantity lost	8.60 (7.41)	-	22.65 (15.04)	31.25 (10.97)
Loading charges	-	-	8.00 (5.31)	8.00 (2.81)
Unloading charges	8.00 (6.89)	-	-	8.00 (2.81)
Weighing charges	8.00 (6.89)	-	8.00 (5.31)	16.00 (5.62)
Miscellaneous charges**	15.25 (13.14)	9.40 (51.25)	5.50 (3.65)	30.15 (10.58)
Labour charge	4.00 (3.45)	8.00 (43.62)	8.00 (5.31)	20.00 (7.02)
Total cost	116.05 (100.00) [40.73]	18.34 (100.00) [6.44]	150.55 (100.00) [52.83]	284.94 (100.00) [100]

Notes: Figures in parentheses are the percentages of respective column totals. Figures in square brackets are the percentages by total marketing costs* Farmers purchased polythene bags @ Rs. 4/bag and sold it to the retailer @ Rs. 3/bag, i.e., cost of polythene bag borne by the farmer was Rs. 1/bag. ** Miscellaneous charges include cost of tea and mobile charges.

Table 7: Price spread in marketing of bottle gourd in the only channel adopted by contract farmers, 2015-16

Particulars	Rs./quintal	Share in consumer's rupee (in per cent)
Producer's net share	746.15	57.40
Costs incurred by		
Producer	97.25	7.48
Wholesaler-cum-commission agent	14.34	1.10
Retailer	154.40	11.88
Total costs	265.99	20.46
Margins earned by		
Wholesaler-cum-commission agent	82.26	6.33
Retailer	205.60	15.81
Total margins	287.86	22.14
Total costs and margins	553.85	42.60
Consumer's price	1300	100.00

producer got Rs. 820.00 per quintal, which accounted for cent per cent of the consumer's rupee. There were no marketing costs incurred by the producer farmer in this channel. Small producer farmers preferred to sell bottle gourd in village to the consumers because of their poor economic condition as well as small quantity of produce available with them.

Price spread in marketing of bottle gourd in channel-II (Producer → Wholesaler-cum-commission agent → Retailer → Consumer) adopted by non-contract farmers

The price spread in marketing of bottle gourd by the producer farmer at mandi is presented in Table 8. The producer's net share in consumer's rupee in the sale of bottle gourd through the channel-I was Rs. 668.05 (56.61 per cent). In this channel the producers sold bottle gourd on an average price of Rs. 820.00 per quintal to the retailers by auction method with the help of wholesaler. In this channel of sale the producer farmers, wholesalers and the

retailers incurred on an average Rs. 77.15, Rs. 8.34 and Rs. 139.55 per quintal as expenses, respectively. The wholesalers and retailers got a net margin of Rs. 69.46 and Rs. 220.45 per quintal, respectively. This accounted for 5.89 and 18.68 per cent of the consumer's price. The margin of wholesalers in this process was Rs. 69.46 per quintal of bottle gourd. Among the two market functionaries present in channel-I retailers got the maximum margin. Small producer farmers preferred to sell bottle gourd in village to the village traders because of their poor economic condition as well as small quantity of produce available with them.

Price spread in marketing of bottle gourd in channel-I (Producer → Wholesaler-cum-commission agent → Retailer → Consumer) adopted by center ROCL Ltd.

In this channel (Table 9) producer-farmers directly sold the produce in the mandis to the retailers through commission agents

Table 8: Price spread in marketing of bottle gourd of the non-contract farmers, 2015-16

Particulars	Rs./quintal	Share in consumer's rupee(in per cent)
Producer's net share	668.05	56.61
Costs incurred by		
Producer	77.15	6.53
Wholesaler-cum-commission agent	8.34	0.70
Retailer	139.55	11.83
Total costs	222.04	18.82
Margins earned by		
Wholesaler-cum-commission agent	69.46	5.89
Retailer	220.45	18.68
Total margins	289.91	24.57
Total costs and margins	511.95	43.38
Consumer's price	1180.00	100.00

(wholesalers). The producer farmer incurred on an average Rs. 116.08 per quintal of bottle gourd before selling it to the retailers at an average price of Rs. 1245.30 per quintal. The wholesaler's getting a margin of Rs. 123.71 per quintal which accounted for 7.50 per cent of the consumer's price. The total marketing costs incurred by various intermediaries constituted 18.82 per cent of the consumer's price. Producer's share in consumer's rupee in this channel of sale was 6035 per cent.

From the above discussion, it could be concluded that the net price received in the channel adopted by center ROCL Ltd. was higher than that realized in channel-I of contract farmer and both channel I and II adopted by the non-contract farmers.

Conclusion and Policy Implications

The ROCL Ltd. and contract farmers adopted only one channel (Producer → Wholesaler-cum-commission agent → Retailer → Consumer) Contrary to this, the non-contract farmers adopted two channels

for sale of bottle gourd. These were channel-I (Producer → Wholesaler-cum-commission agent → Retailer → Consumer) for selling at mandi itself. Channel-II (Producer → Consumer) for selling the produce directly to the consumer at farm itself. The total marketing cost in selling of bottle gourd was higher in channel-I (Producer→Wholesaler-cum-commission agent →Retailer → Consumer) of ROCL Ltd., (Rs. 284.94 per quintal) followed by channel-I (Producer→Wholesaler-cum-commission agent →Retailer → Consumer) of contract farms (Rs. 265.99 per quintal) and channel-II (Producer→Wholesaler-cum-commission agent →Retailer → Consumer) of non-contract farms (Rs. 225.04 per quintal) because of involvement of intermediaries in the marketing process. In channel-I (Producer → Consumer) there was no marketing cost. Transportation charges, value added tax, commission, value of quantity lost, cost of polythene, loading, unloading and weighing charges were the main items of costs. There existed significant difference in the margins

Table 9: Price spread in marketing of bottle gourd adopted by center ROCL Ltd, 2015-16

Particulars	Rs./quintal	Share in consumer's rupee (in per cent)
Producer's net share	995.90	60.35
Costs incurred by		
Center ROCL Ltd.	116.08	7.03
Wholesaler-cum-commission agent	18.34	1.11
Retailer	150.55	9.12
Total costs	284.94	18.82
Margins earned by		
Wholesaler-cum-commission agent	123.71	7.50
Retailer	254.45	15.42
Total margins	369.16	22.37
Total costs and margins	654.10	39.64
Consumer's price	1650.00	100.00

earned by different market intermediaries. The wholesalers had 6.33 per cent (Rs. 82.26 per quintal) on contract farms, 5.89 per cent (Rs. 69.46 per quintal) on non-contract farms and 7.50 per cent (Rs. 123.71 per quintal) on ROCL Ltd. share in the consumer's rupee in marketing of bottle gourd, respectively. Among the functionaries, retailers got the higher margin due to sale of bottle gourd at higher prices to the consumers. The retailers had 15.81 per cent (Rs. 205.60 per quintal) on contract farms, 18.68 per cent (Rs. 220.45 per quintal) on non-contract farms and 15.42 per cent (Rs. 254.45 per quintal) on ROCL Ltd. share in the consumer's rupee in marketing of bottle gourd, respectively. The production of main product of bottle gourd on contract farms was higher by 5.38 per cent than that on non-contract farms. The average selling prices of the main product was higher by 13.26 per cent on contract farms than on non-contract farms. Lack of irrigation, irregular supply of inputs like fertilizers and plant protection chemicals, shortage of labour during peak

hours of production, insufficient crop insurance coverage, improper (more/less) use of fertilizers and plant protection chemicals, wide gap between credit required and credit supplied and timely non availability of seeds were the main production problems faced by the farmers. The main marketing problems that were faced by the contract farmers were: quality standards of the produce were not up to expectation, fluctuations in market price, high transportation cost, delay in timely payment and cut in weight of the produce. Similarly the problem faced by the contracting firm were reported to be high cost of maintenance, difficulty in price bargaining and its fixation, Less availability of farm inputs, Market price fluctuations, Shortage of labour during peak hours of cultivation and lack of extension/technical personnel.

The contractor entered in to verbal contract with the farmers making the contract legally unsound. Hence, contractor should be legally compelled to have written agreement with the

farmers with all terms and conditions regarding the contract, production and marketing of the crop. There was no insurance coverage to the contract farmers. In case of uncertainty in production and prices, the contract farmers suffer from these happenings. Hence, contract farming should be covered with guarantee of insurance to the farmers to meet out production and price uncertainties. The GOI should start some policies that reduce the marketing cost and develop market infrastructure for better marketing of farm produce for getting maximum price of produce.

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