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Constraints faced by the farmers in production and marketing of vegetables in Haryana

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ABSTRACT

India is the largest producer of vegetables in the world after China. The cauliflower, potato, radish, tomato, onion are the major vegetables cultivated in Haryana. Present study was conducted in Haryana to study the constraints faced by farmers and middlemen in production and marketing of major vegetables. Study was carried out in Sonipat for cauliflower, Yamunanagar for Potato, Ambala for onion, Karnal for tomato, Gurugram for radish. Present study fully relies on the primary data and hence data was collected through proper structured schedule for the production year 2014-15. Major production related constraints expressed by vegetable growers were lack of information about cultivation of vegetables, higher cost of fertilizers, seeds and labour and their unavailability when needed, lack of suitable cold storage facilities, high cost of storage, costly weedicides, spurious plant protection chemicals, and lack of credit. Major marketing related constraints expressed in marketing of vegetables were lack of market information, higher price fluctuation, higher amount of price spread, malpractices in weighing and storing of vegetables, problem of storage facilities, lack of processing industries/units, higher price fluctuations, high cost of labour, high transportation cost, and delay in payments.

Key words: Constraints, Haryana, Markets, Middlemen, Price, Vegetable growers

The efficiency of marketing for vegetables in India has been significant concern in the recent years. Poor efficiency in the marketing channels and inadequate marketing infrastructure are believed to be the cause of not only high and fluctuating consumer prices, but also to lesser share of consumer rupee reaching to the farmer (Kaul 1997, Ashturker and Deole 1985). Indian farmers typically depend heavily on middlemen particularly in fruits and vegetables marketing. The producers and the consumers often get a poor deal and the middlemen control the market, but do not add much value. There is also massive wastage, deterioration in quality as well as frequent mismatch between demand and supply both spatially and over time (Subbanarasiah 1991, Singh *et al*. 1985).

Marketing of vegetable crops is quite complex and risky due to the perishable nature of the produce, seasonal production and bulkiness. The spectrum of prices from producer to consumer, which is an outcome of demand and supply of transactions between various intermediaries at different levels in the marketing system, is also unique for vegetables. Moreover, the marketing arrangements at different stages also play an important role in price levels at various stages viz. from farm gate to the ultimate user. Similar results found in (Dastagiri *et al*. 2013). These features make the marketing system of vegetables to differ from other agricultural commodities, particularly in providing time, form and space utilities. While the market infrastructure is better developed for food grains, fruits and vegetables markets are not that well developed and markets are congested and unhygienic (Sharan 1998). The markets in many of the major cities in some states are not covered by market legislation and continue to function under civic body as well as private ownership.

MATERIALS AND METHODS

Multistage sample design was carried out to select the respondents and marketing middlemen for the present study. First, based on highest area of vegetable cultivation five districts namely, Sonipat, Yamunanagar, Ambala, Karnal and Gurugram were selected along with the major cultivated vegetable of the district such as cauliflower, potato, onion, tomato and radish, respectively. On the basis of area under selected vegetable crop, one tehsil from each district was selected and two villages were selected from each tehsil. Farmers in each selected village was categorised into small (<0.5 ha), medium (0.5-0.9 ha) and large (>0.9 ha) farmers and from each village 30 farmers were selected based on the

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probability proportion to the number in vegetable cultivation area. Gurgaon, Karnal, Sonipat, Yamunanagar, Panipat, Panchkula and Ambala vegetable markets were selected to study the market margin in vegetable cultivation and 10 middelemen from each markets were selected purposively for the present study. Thus, 5 districts, 5 tehsils, 10 villages, 300 farmers, 70 market middelemen were interviewed for study. The study completely based on primary data which was collected from farmers and market middelemen during 2014-15 related to the problems faced by them during the cultivation and marketing of vegetables.

RESULTS AND DISCUSSION

Constraints in production faced by cauliflower growers

Table 1 revealed that on an overall basis, majority of the cauliflower growing farmers faced the problem of spurious plant protection chemicals (67%) which were not very effective in controlling insect-pests and diseases. The second major problem was lack of information about high-yielding varieties (63%). In additional to these, growers also faced the problems like higher production expenditure (60%), less effective and costly weedicides (57%), higher

Table 1 Constraints faced by cauliflower growers in production and marketing of cauliflowers

Problem/Constraint	Categories of selected farmers							
	Small (17)		Medium (8)		Large (5)		Overall (30)	
	No.	%	No.	%	No.	%	No.	%
Lack of information about high yielding varieties and their seed/planting materials	11	65	5	63	3	60	19	63
High cost of seeds	9	53	3	38	2	40	14	47
High cost of fertilizers	10	59	2	25	1	20	13	43
Non-availability of fertilizer when needed	9	53	2	25	1	20	12	40
Manual weeding is time consuming and labour intensive	8	47	3	38	2	40	13	43
Less effective and costly weedicides	10	59	4	50	3	60	17	57
Spurious plant protection chemicals	12	71	5	63	3	60	20	67
Higher prices of insecticide/pesticides	10	59	2	25	1	20	13	43
Lack of credit	12	71	3	38	0	0	15	50
Unavailability of labour when needed	7	41	5	63	3	60	15	50
Higher labour charges	10	59	4	50	2	40	16	53
Higher production expenditure	13	76	4	50	1	20	18	60
Lack of suitable cold storage facilities	6	35	2	25	1	20	9	30
High cost of storage	5	29	1	13	0	0	6	20
Marketing in villages								
Low price/non-remunerative prices	13	76	5	63	4	80	22	73
No ready market	12	71	3	38	3	60	18	60
Malpractices in weighing	11	65	3	38	2	40	16	53
Lack of cooperative marketing system in villages	13	76	4	50	4	80	21	70
Dominance of traders in villages	10	59	2	25	2	40	14	47
Marketing in Sonipat and Panipat mandi								
Lack of market information	10	59	2	25	1	20	13	43
Lack of transportation	9	53	3	38	2	40	14	47
High transportation cost	9	53	4	50	3	60	16	53
Existence of large number of intermediaries in marketing process	9	53	5	63	4	80	18	60
Higher margin of middlemen	8	47	3	38	3	60	14	47
Lack of labour for loading and unloading	10	59	4	50	4	80	18	60
Losses during transportation/transactions	7	41	2	25	2	40	11	37
Higher price fluctuations	13	76	5	63	4	80	22	73
Unorganized marketing system	12	71	4	50	4	80	20	67

Table 2 Middlemen related constraints for cauliflower in Sonipat and Panipat mandi

Problem/Constraint	Respondents (n=20)	
	Frequency	%
Problem of storage facilities	7	35
Lack of transportation facilities	14	70
High transportation cost	13	65
Problem of drayage and spoilage	10	50
Delay in payments	6	30
Higher price fluctuations	11	55
High cost of labour	8	40
Lack of processing industries/units	4	20

labour charges (53%), unavailability of labour when needed (50%) and lack of credit (50%).

Constraints in marketing faced by cauliflower growers

The marketing related constraints expressed by cauliflower growers are presented in Table 1. The table revealed that on an overall basis, major constraints in marketing in villages of cauliflower were low price (73%), followed by lack of cooperative marketing system in villages (70%), no ready market in villages (60%), malpractices in weighing (53%) and dominance of traders in villages (47%), (Satapathy and Das1996).

On an overall basis, higher price fluctuations (73%) was biggest and main problem of cauliflower growers of marketing in Sonipat and Panipat mandi, followed by unorganized marketing system (67%), lack of labour for loading and unloading (60%), existence of large number of intermediaries in marketing process (60%) and high transportation cost (53%). The net price received by the producers is relatively higher in the channels in which the produce is directly sold to the consumers or retailers (Baba *et al.* 2010).

Constraints in marketing of cauliflower faced by middlemen

It can be seen from the Table 2 that higher price

Table 3 Constraints faced by Potato growers in production and marketing of potato

Problem/Constraint	Categories of selected farmers							
	Small (16)		Medium (9)		Large (5)		Overall (30)	
	No.	%	No.	%	No.	%	No.	%
Lack of information about high yielding varieties and their seed/ planting materials	12	75	6	67	3	60	21	70
High cost of seeds	9	56	5	56	1	20	15	50
High cost of fertilizers	10	63	5	56	1	20	16	53
Non-availability of fertilizer when needed	8	50	4	44	1	20	13	43
Manual weeding is time consuming and labour intensive	10	63	6	67	3	60	19	63
Less effective and costly weedicides	12	75	5	56	2	40	19	63
Spurious plant protection chemical	11	69	5	56	2	40	18	60
Higher prices of insecticide/pesticides	9	56	5	56	2	40	16	53
Lack of credit	12	75	5	56	1	20	18	60
Unavailability of labour when needed	10	63	6	67	4	80	20	67
Higher labour charges	11	69	6	67	2	40	19	63
Higher production expenditure	13	81	6	67	3	60	22	73
Lack of suitable cold storage facilities	13	81	8	89	4	80	25	83
High cost of storage	12	75	8	89	4	80	24	80
Marketing in villages								
Low price/non-remunerative prices	14	88	7	78	4	80	25	83
No ready market	8	50	6	67	2	40	16	53
Malpractices in weighing	9	56	5	56	1	20	15	50
Lack of cooperative marketing system in villages	13	81	6	67	2	40	21	70
Dominance of traders in villages	11	69	5	56	1	20	17	57
Marketing in Yamunanagar mandi								
Lack of market information	6	38	5	56	2	40	13	43
Lack of transportation	7	44	4	44	1	20	12	40
High transportation cost	9	56	5	56	2	40	16	53
Existence of large number of intermediaries in marketing process	8	50	5	56	2	40	15	50
Higher margin of middlemen	9	56	6	67	3	60	18	60
Lack of labour for loading and unloading	12	75	7	78	4	80	23	77
Losses during transportation/transactions	4	25	4	44	0	0	8	27
Higher price fluctuations	9	56	6	67	1	20	16	53
Unorganized marketing system	11	69	6	67	2	40	19	63

Table 4 Middlemen related constraints for potato in Yamunanagar mandi

Problem/Constraint	Respondents (n=10)	
	Frequency	%
Problem of storage facilities	8	80
Lack of transportation facilities	5	50
High transportation cost	4	40
Problem of drayage and spoilage	6	60
Delay in payments	3	30
Higher price fluctuations	5	50
High cost of labour	4	40
Lack of processing industries/units	7	70

fluctuations was the main problem of middlemen in Sonipat and Panipat mandi, followed by lack of transportation facilities (70%), high transportation cost (65%), higher price fluctuations (55%) and problem of drayage and spoilage (50%).

Constraints in production faced by potato growers

The production related constraints expressed by potato growers are presented in Table 3. It was found that problem of lack of suitable cold storage facilities (83%) was major problem, followed by high cost of storage. In addition to these, growers also faced the problems like higher production expenditure (73%), lack of information about high-yielding varieties and their seeds (70%), unavailability of labour

Table 5 Constraints faced by potato growers in production and marketing of onion

Problem/Constraint	Categories of selected farmers							
	Small (17)		Medium (9)		Large (4)		Overall (30)	
	No.	%	No.	%	No.	%	No.	%
Lack of information about high yielding varieties and their seed/ planting materials	12	71	5	56	2	50	19	63
High cost of seeds	11	65	4	44	1	25	16	53
High cost of fertilizers	7	41	3	33	1	25	11	37
Non-availability of fertilizer when needed	11	65	5	56	1	25	17	57
Manual weeding is time consuming and labour intensive	11	65	6	67	2	50	19	63
Less effective and costly weedicides	12	71	6	67	2	50	20	67
Spurious plant protection chemical	11	65	5	56	1	25	17	57
Higher prices of insecticide/pesticides	10	59	4	44	2	50	16	53
Lack of credit	12	71	4	44	1	25	17	57
Unavailability of labour when needed	15	88	7	78	3	75	25	83
Higher labour charges	12	71	7	78	3	75	22	73
Higher production expenditure	14	82	6	67	3	75	23	77
Lack of suitable cold storage facilities	10	59	5	56	2	50	17	57
High cost of storage	5	29	3	33	1	25	9	30
Marketing in villages								
Low price/non-remunerative prices	13	76	7	78	3	75	23	77
No ready market	9	53	5	56	1	25	15	50
Malpractices in weighing	8	47	3	33	1	25	12	40
Lack of cooperative marketing system in villages	12	71	6	67	2	50	20	67
Dominance of traders in villages	9	53	4	44	1	25	14	47
Marketing in Ambala and Punchkula mandi								
Lack of market information	8	47	3	33	0	0	11	37
Lack of transportation	10	59	4	44	1	25	15	50
High transportation cost	11	65	5	56	2	50	18	60
Existence of large number of intermediaries in marketing process	10	59	5	56	2	50	17	57
Higher margin of middlemen	9	53	4	44	2	50	15	50
Lack of labour for loading and unloading	11	65	4	44	2	50	17	57
Losses during transportation/transactions	12	71	6	67	3	75	21	70
Higher price fluctuations	14	82	8	89	3	75	25	83
Unorganized marketing system	12	71	6	67	2	50	20	67

Table 6 Middlemen related constraints for onion in Ambala and Punchkula mandi

Problem/Constraint	Respondents (n=20)	
	Frequency	%
Problem of storage facilities	19	95
Lack of transportation facilities	9	45
High transportation cost	8	40
Problem of drayage and spoilage	11	55
Delay in payments	16	80
Higher price fluctuations	20	100
High cost of labour	15	75
Lack of processing industries/units	18	90

when needed (67%), manual weeding is time consuming and labour intensive (63%), less effective and costly weedicides (63%), spurious plant protection chemical (60%) and lack of credit (60%), similar finding were also obtained by (Fawole 2007) and Okon and Enete (2009).

Constraints in marketing faced by potato growers

The marketing related constraints expressed by potato growers are presented in Table 3. It was found that major constraints in marketing in villages of potato was low price (83%), followed by lack of cooperative marketing system in villages (70%), dominance of traders in villages (57%), no ready market (53%), and malpractices in weighing (50%)

On an overall basis, lack of labour for loading and

Table 7 Constraints faced by potato growers in production and marketing of tomato

Problems/Constraints	Categories of selected farmers							
	Small (18)		Medium (8)		Large (4)		Overall (30)	
	No.	%	No.	%	No.	%	No.	%
Lack of information about high yielding varieties and their seed/ planting materials	7	39	3	38	1	25	11	37
High cost of seeds	10	56	6	75	3	75	19	63
High cost of fertilizers	8	44	3	38	1	25	12	40
Non-availability of fertilizer when needed	6	33	2	25	1	25	9	30
Manual weeding is time consuming and labour intensive	5	28	4	50	1	25	10	33
Less effective and costly weedicides	6	33	3	38	1	25	10	33
Spurious plant protection chemical	10	56	5	63	2	50	17	57
Higher prices of insecticide/pesticides	11	61	5	63	2	50	18	60
Lack of credit	4	22	2	25	0	0	6	20
Unavailability of labour when needed	11	61	7	88	3	75	21	70
Higher labour charges	10	56	5	63	1	25	16	53
Higher production expenditure	12	67	6	75	2	50	20	67
Lack of suitable cold storage facilities	6	33	3	38	0	0	9	30
High cost of storage	5	28	2	25	0	0	7	23
Marketing in villages								
Low price/non-remunerative prices	10	56	6	75	2	50	18	60
No ready market	8	44	3	38	0	0	11	37
Malpractices in weighing	9	50	3	38	0	0	12	40
Lack of cooperative marketing system in villages	10	56	4	50	1	25	15	50
Dominance of traders in villages	9	50	4	50	0	0	13	43
Marketing in Karnal mandi								
Lack of market information	11	61	6	75	3	75	20	67
Lack of transportation	6	33	3	38	0	0	9	30
High transportation cost	10	56	4	50	0	0	14	47
Existence of large number of intermediaries in marketing process	9	50	5	63	1	25	15	50
Higher margin of middlemen	9	50	6	75	2	50	17	57
Lack of labour for loading and unloading	8	44	7	88	3	75	18	60
Losses during transportation/transactions	12	67	7	88	3	75	22	73
Higher price fluctuations	10	56	7	88	2	50	19	63
Unorganized marketing system	11	61	5	63	1	25	17	57

Table 8 Middlemen related constraints for tomato in Karnal mandi

Problem/Constraint	Respondents (n=10)	
	Frequency	%
Problem of storage facilities	8	80
Lack of transportation facilities	4	40
High transportation cost	5	50
Problem of drayage and spoilage	10	100
Delay in payments	4	40
Higher price fluctuations	7	70
High cost of labour	9	90
Lack of processing industries/units	9	90

unloading (77%) was biggest and main problem of potato growers of marketing in Yamunanagar mandi, followed by unorganized marketing system (63%), higher margin of middlemen (60%), higher price fluctuations (53%), high transportation cost (53%), and existence of large number of intermediaries in marketing process (50%).

Constraints in marketing of potato faced by middlemen

Table 4 reported that problem of storage facilities was major constraint of middlemen in Yamunanagar mandi, followed by lack of processing industries/units (70%), problem of drayage and spoilage (60%), lack of transportation facilities (50%), and higher price fluctuations (50%).

Table 9 Constraints faced by potato growers in production and marketing of radish

Problem/Constraint	Categories of selected farmers							
	Small (18)		Medium (7)		Large (5)		Overall (30)	
	No.	%	No.	%	No.	%	No.	%
Lack of information about high yielding varieties and their seed/ planting materials	10	56	4	57	3	60	17	57
High cost of seeds	8	44	4	57	3	60	15	50
High cost of fertilizers	5	28	3	43	2	40	10	33
Non-availability of fertilizer when needed	6	33	2	29	1	20	9	30
Manual weeding is time consuming and labour intensive	7	39	4	57	2	40	13	43
Less effective and costly weedicides	7	39	3	43	2	40	12	40
Spurious plant protection chemical	4	22	2	29	1	20	7	23
Higher prices of insecticide/pesticides	5	28	3	43	2	40	10	33
Lack of credit	6	33	2	29	1	20	9	30
Unavailability of labour when needed	13	72	5	71	3	60	21	70
Higher labour charges	15	83	6	86	4	80	25	83
Higher production expenditure	5	28	2	29	1	20	8	27
Lack of suitable cold storage facilities	0	0	2	29	2	40	4	13
High cost of storage	4	22	2	29	1	20	7	23
Marketing in villages								
Low price/non-remunerative prices	15	83	6	86	4	80	25	83
No ready market	6	33	2	29	1	20	9	30
Malpractices in weighing	8	44	3	43	2	40	13	43
Lack of cooperative marketing system in villages	10	56	4	57	3	60	17	57
Dominance of traders in villages	9	50	3	43	2	40	14	47
Marketing in Gurgaon mandi								
Lack of market information	7	39	3	43	2	40	12	40
Lack of transportation	6	33	2	29	1	20	9	30
High transportation cost	9	50	3	43	2	40	14	47
Existence of large number of intermediaries in marketing process	10	56	4	57	3	60	17	57
Higher margin of middlemen	8	44	5	71	3	60	16	53
Lack of labour for loading and unloading	13	72	4	57	3	60	20	67
Losses during transportation/transactions	3	17	2	29	1	20	6	20
Higher price fluctuations	6	33	2	29	1	20	9	30
Unorganized marketing system	8	44	3	43	2	400	13	43

Constraints in production faced by onion growers

The production related constraints expressed by onion growers are presented in Table 5. The table revealed that majority of the onion growing farmers faced the problem of unavailability of labour when needed (83%). The second major problem was higher production expenditure (77%). In additional to these, growers also faced the problems like higher labour charges (73%) and less effective and costly weedicides (67%) which were not very effective in controlling insect-pests and diseases. Similar findings were reported by Vinayak *et al*. (2013) and Maru and Gibramu (2014).

Constraints in marketing faced by onion growers

Table 5 concluded marketing related constraints expressed by onion growers and it was found that major constraints was low price (77%), followed by lack of cooperative marketing system in villages (67%), no ready market in villages (50%), dominance of traders in villages (47%), and malpractices in weighing (40%).

On an overall basis, higher price fluctuations (83%) was biggest and main problem of onion growers of marketing in Ambala and Panchkula mandi followed by unorganized marketing system (70%), unorganized marketing system (67%), and high transportation cost (60%).

Constraints in marketing of onion faced by middlemen

Table 6 revealed that mandi of Sonipat and Panipat had higher price fluctuations was the main problem of middlemen as reported by 90%, followed by high cost of labour (85%), problem of drayage and spoilage (75%), and lack of transportation facilities (70%).

Constraints in marketing faced by tomato growers

The marketing related constraints expressed by tomato growers are presented in Table 7. Study reported that major constraints in marketing in villages of tomato was low price (60%), followed by lack of cooperative marketing system in villages (50%), dominance of traders in villages (43%), malpractices in weighing (40%), and no ready market in villages (37%).

On an overall basis, losses during transportation/ transactions (73%) was biggest and main problem of tomato growers of marketing in Sonipat and Panipat mandi followed by, lack of market information (67%), higher price fluctuations (63%), lack of labour for loading and unloading (60%), higher margin of middlemen (57%), unorganized marketing system (57%) and existence of large number of intermediaries in marketing process (50%).

Constraints in marketing faced by tomato growers

Table 7 narrated the marketing related constraints and found that major constraints in marketing in villages of tomato was low price (60%), followed by lack of cooperative marketing system in villages (50%), dominance of traders in villages (43%), malpractices in weighing (40%), and no ready market in villages (37%). Similar results were found by Farida and Fariya (2014).

Table 10 Middlemen related constraints for radish in Gurugram mandi

Problem/Constraint	Respondents (n=10)	
	Frequency	%
Problem of storage facilities	8	80
Lack of transportation facilities	4	40
High transportation cost	5	50
Problem of drayage and spoilage	2	20
Delay in payments	7	70
Higher price fluctuations	6	60
High cost of labour	5	50
Lack of processing industries/units	7	70

On an overall basis, losses during transportation/ transactions (73%) was biggest and main problem of tomato growers of marketing in Sonipat and Panipat mandi, followed by lack of market information (67%), higher price fluctuations (63%), lack of labour for loading and unloading (60%), higher margin of middlemen (57%), unorganized marketing system (57%) and existence of large number of intermediaries in marketing process (50%).

Constraints in marketing of tomato faced by middlemen

Table 8 concluded that higher price fluctuations are the main problem of middlemen in mandi of Sonipat and Panipat, followed by high cost of labour (85%), problem of drayage and spoilage (75%) and lack of transportation facilities (70%). Seema and Annamalai (2003) reported similar results.

Constraints in production faced by radish growers

The production related constraints expressed by radish growers are presented in Table 9. The table revealed that on an overall basis, majority of the radish growing farmers faced the problem of higher labour charges (83%). The second major problem was unavailability of labour when needed (70%). In addition to these, growers also faced the problems such as lack of information about high yielding varieties (57%) and high cost of seeds (50%).

Constraints in marketing faced by radish growers

The marketing related constraints expressed by radish growers are presented in Table 9 and it was found that major constraints in marketing in villages of radish was low price (83%), followed by lack of cooperative marketing system in villages (57%), dominance of traders in villages (47%), malpractices in weighing (43%), and no ready market in villages (30%).

On an overall basis, lack of labour for loading and unloading (67%) was biggest and main problem of radish growers of marketing in gurugram mandi followed by existence of large number of intermediaries in marketing process (57%), higher margin of middlemen (53%), and high transportation cost (47%).

Constraints in marketing of radish faced by middlemen

It can be seen from the Table 10 that in price fluctuations is the main problem of middlemen in Sonipat and Panipat mandi, followed by high cost of labour (85%), problem of drayage and spoilage (75%) and lack of transportation facilities (70%). Similar results obtained by Bala *et al.* (2011).

Conclusion

The government should set up efficient marketing information regarding prices of vegetables and input availability in the state. Price fluctuation should be minimised through fixing of minimum support prices. Provision of cold storage facilities to the farmers at the village level and adequate refrigerated transport facilities for the smooth movement of vegetables from the places of production to the various consumption centres are some of the means suggested to improve the efficiency of production and marketing of vegetables in the state.

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