

Price Spread and Marketing Efficiency in the Marketing of High Value Cash Crops in Himachal Pradesh

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The study has been conducted with a view to examine the various marketing channels, costs, margins and price spread in the marketing of vegetables in Himachal Pradesh. The cropping pattern on sampled households was vegetable-dominated with 80 to 86 percent of the total cropped area under vegetables and the cropping intensity was as high as 270 percent. More than 90 percent of the total produce of selected vegetables was marketed surplus. Regional markets were well equipped and were working efficiently. However, market malpractices viz., overcharging for the services like loading/unloading, weighing, grading etc. and under weighing of the produce of farmers prevailed. Fluctuating market prices further aggravated by the lack of market information were also reported to be the major problems. Of the three major channels operative in the study area, channel-III happened to be the most efficient channel. It was also observed that the retailers' margin was the highest among all the market functionaries in all the channels. The producer's share in consumer's rupee varied from 46 percent to 74 percent. The study has emphasized on the adoption of improved technology to enhance the returns from vegetable production. Strengthening of farmers' organizations and cooperative marketing institutions along with the development of infrastructure viz., small scale processing units, roads, transportation and storage facilities, has also been suggested to ensure efficient marketing. A mechanism for proper implementation of the market rules and regulations was strongly needed to be put in place. Promotion of contract farming in the vegetable producing areas was also stressed upon so as to minimize the market related problems of the farming community.

The article is based on the work done under a project funded by NABARD. So, the author is highly indebted to NABARD for its financial assistance especially in the districts of Shimla, Kullu, Solan and Lahaul-Spiti, started in the late sixties and continued in the seventies and eighties, gained momentum in the nineties and has now encompassed many new areas in the low and mid-hill districts. Vegetables have emerged as the most important high value cash crops of the state in the recent past which is evident from the fact that the area under vegetable crops has increased from 23,130 hectares in triennium ending 1992-93 to 55,520 hectares in triennium ending 2008-09 while the production during the same period has increased from 3,69,000 tonnes to 10,40,760 tonnes registering a compound growth rate of 5.86 percent in the area and 6.80 percent in production (Sharma, 2011, p. 97).

The process of crop diversification has given rise to a set of new problems that are mostly related to marketing. The vegetable crops warrant quick and immediate marketing to ensure remunerative prices to the farmers. However, inadequate market infrastructure and too many intermediaries between the producers and consumers lead to high marketing costs and ultimately results in low share of producer in the consumer's rupee. The lack of market intelligence about the potential markets and the pattern of market arrivals and prices in important regional and national markets further compound the woes of the farmers. So, there is a need for regular and reliable studies on different aspects of marketing. Hence, the present study was conducted with the objective to study the market functionaries, marketing channels, costs, margins and price spread in the marketing of important vegetable crops/cash crops.

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Methodology

The study was carried out in three districts of Himachal Pradesh namely Kullu, Mandi and Solan where the area under vegetable crops has increased rapidly during the past 5-10 years. From each of these three districts, one block accounting for the maximum area and production of vegetable crops was selected. A list of panchayats in each of the selected blocks was prepared. Out of these panchayats, the two most important vegetable growing panchayats were selected purposively in each of the selected blocks. Thereafter, a sample of 25 percent of villages in each of the selected panchayats was selected randomly. In the final stage, 75 households were proportionally allocated among the selected villages in each of the three selected blocks. The farmers were categorized into small and large categories on the basis of operational holdings using cumulative cube root frequency method. All important vegetable crops grown by the sample households viz., cabbage, cauliflower, capsicum, pea, tomato and frenchbean were considered for the study.

Bhuntar, Mandi, Solan and Pathankot were selected to study the various market efficiency parameters. The study is based on secondary and primary data. The secondary data were collected from both published and un-published sources from different agencies and offices. The primary data were collected by survey method through a personal interview method using a well designed and pre-tested questionnaire. The tabular analysis was used to study the demographic structure of the family, land and other inventory, cropping pattern, area under vegetable crops etc. The averages and percentages were calculated to facilitate the comparison and interpretation.

Marketing efficiency was worked out by employing the formula given by Acharya and Agarwal, given as follows.

$$ME = \frac{NP_F}{(MC+MM+ML)}, \text{ Where } NP_F \text{ is the net price received by farmer,}$$

MC is total marketing cost; MM is total marketing margin, and ML is marketing loss.

Results and Discussion

Socio-Economic Profile of the Sampled Households

Family size and age-wise distribution

Since farming is a labor intensive activity, therefore, number as well as age composition of family members available for farming determines the efficiency of farm households. The family size and structure of sampled

households has been presented in Table 1. A quick perusal of the table reveals that the average family size in Kullu, Mandi and Solan districts was 5.4, 5.3 and 5.8, respectively. The proportion of male population was higher in all the districts. It can further be observed from the table that the family size on large farms was higher than the small farms in all the three districts under study.

Table 1: Average family size of sampled households on different categories of farms (No.)

Particular	Small	Large	Overall
Kullu			
Male	2.8	3.2	2.9
Female	2.4	2.8	2.5
Total	5.2	6.0	5.4
Mandi			
Male	2.8	3.4	2.9
Female	2.3	3.0	2.4
Total	5.0	6.4	5.3
Solan			
Male	3.2	3.5	3.3
Female	2.4	3.1	2.6
Total	5.6	6.6	5.8

Table 2 reveals that the population below 15 years of age comprised of 26.5, 25.2 and 25.1 percent in districts Kullu, Mandi and Solan, respectively. The average working population in the age group of 15-60 years was 64, 63.6 and 61.9 percent, respectively in the three districts. This indicates that there was sufficient working force available in the farm-families to provide human labor for the labor intensive vegetable cropping system. The proportion of dependents (below 5 and above 60 years) was upto 16 percent in different districts so the women in the farm- families had to devote considerable amount of time for attending the children and aged people. The sex-ratio on sampled households was observed to be the highest in Kullu (867) followed by Mandi (837) and was lowest in Solan (788).

Educational status

Educational status of family members plays an important role in the scientific management of farms, adoption of recommended technologies and efficient marketing of farm products. It further helps in enhancing skill and general standard of awareness in the family. A quick

Table 2: Age-wise distribution on different categories of farms

(percent)

Age group years	Small			Large			Overall		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Kullu									
0-5	2.30	2.50	2.39	3.10	2.91	3.01	2.55	2.63	2.58
5 to 15	21.50	24.25	22.77	30.10	22.50	26.54	24.14	23.70	23.94
15 to 40	30.80	29.50	30.20	28.20	25.10	26.75	30.00	28.13	29.13
40 to 60	35.25	34.80	35.04	30.80	39.40	34.83	33.88	36.24	34.98
Above 60	10.15	8.95	9.59	7.80	10.09	8.87	9.43	9.31	9.37
Total (No.)	151	130	281	67	59	126	218	189	407
Sex-ratio	861			881			867		
Mandi									
0-5	3.10	3.01	3.06	2.98	2.40	2.71	3.07	2.86	2.97
5 to 15	22.50	20.50	21.60	25.40	22.80	24.17	23.17	21.08	22.22
15 to 40	29.80	26.80	28.45	35.30	33.40	34.40	31.08	28.45	29.88
40 to 60	33.40	35.90	34.53	29.40	32.80	31.01	32.47	35.13	33.68
Above 60	11.20	13.79	12.37	6.92	8.60	7.72	10.20	12.49	11.25
Total (No)	165	135	300	50	45	95	215	180	395
Sex-ratio	818			900			837		
Solan									
0-5	2.90	2.30	2.64	3.10	2.20	2.68	2.95	2.27	2.65
5 to 15	22.50	21.80	22.20	25.40	20.40	23.05	23.25	21.39	22.43
15 to 40	40.30	31.70	36.61	35.90	30.20	33.22	39.17	31.26	35.69
40 to 60	25.40	28.80	26.86	23.80	25.10	24.41	24.99	27.73	26.19
Above 60	8.90	15.40	11.69	11.80	22.10	16.65	9.65	17.34	13.04
Total(No)	182	137	319	63	56	119	245	193	438
Sex-ratio	753			889			788		

perusal of Table 3 reveals that the overall literacy rate on the sampled households in Kullu, Mandi and Solan districts was 81.9, 85.3 and 83.5 percent, respectively. These literacy rates were very high when compared to their respective district literacy rates as per the census, 2001 which were 72.9, 75.2 and 76.6 percent, respectively. The male literacy was higher than their

female counterparts on both the (small and large) farm categories and in all the three districts. The proportion of illiterate population on sampled households was the highest in Kullu and the lowest in Mandi. The table thus clearly elucidates that the sampled farm families were well educated, and constantly kept themselves updated with the latest technological development in vegetable cultivation as well as the marketing of produce.

Table 3: Education wise distribution on different categories of farms

(percent)

Educational Status	Small			Large			Overall		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Kullu									
Illiterate	17.40	20.80	18.97	14.50	18.10	16.19	16.51	19.96	18.11
Primary	16.50	19.70	17.98	15.20	16.80	15.95	16.10	18.79	17.35
Middle	20.10	20.10	20.10	19.10	25.75	22.21	19.79	21.86	20.75
Matriculate	16.50	13.40	15.07	14.50	12.85	13.73	15.89	13.23	14.65
Higher Secondary	25.75	24.50	25.17	30.50	22.50	26.75	27.21	23.88	25.66
Graduate & above	3.75	1.50	2.71	6.20	4.00	5.17	4.50	2.28	3.47
Total(No.)	151	130	281	67	59	126	218	189	407
Literacy rate	82.60	79.20	81.03	85.50	81.90	83.81	83.49	80.04	81.89
Mandi									
Illiterate	13.50	16.50	14.85	12.80	15.50	14.08	13.34	16.25	14.66
Primary	15.80	20.10	17.74	18.90	15.20	17.15	16.52	18.88	17.59
Middle	20.40	20.50	20.45	20.50	22.10	21.26	20.42	20.90	20.64
Matriculate	25.50	25.80	25.64	24.80	27.90	26.27	25.34	26.33	25.79
Higher Secondary	19.80	12.60	16.56	16.20	13.80	15.06	18.96	12.90	16.20
Graduate & above	5.00	4.50	4.78	6.80	5.50	6.18	5.42	4.75	5.11
Total(No.)	165	135	300	50	45	95	215	180	395
Literacyrate	86.50	83.50	85.15	87.20	84.50	85.92	86.66	83.75	85.34
Solan									
Illiterate	12.10	19.20	15.15	17.00	24.00	20.29	13.36	20.59	16.55
Primary	18.10	25.20	21.15	15.00	22.50	18.53	17.30	24.42	20.44
Middle	19.90	28.10	23.42	20.50	25.80	22.99	20.05	27.43	23.31
Matriculate	25.50	20.40	23.31	22.80	19.90	21.44	24.81	20.25	22.80
Higher Secondary	19.60	5.30	13.46	18.20	5.80	12.36	19.24	5.45	13.16
Graduate & above	4.80	1.80	3.51	6.50	2.00	4.38	5.24	1.86	3.75
Total(No.)	182	137	319	63	56	119	245	193	438
Literacyrate	87.90	80.80	84.85	83.00	76.00	79.71	86.64	79.41	83.45

Land utilization pattern

The size of holding that a farm household owns shows the basic strength of the farming family and its utilization reveals how efficiently this natural resource is being used by the farmer. The average land holding of the sampled farms in Kullu was 1.11 hectares (Table 4). On large farms the average size of holding was 1.55 hectares

while on small farms it was 0.94 hectares. The irrigated land comprised of about 47 percent of the total holding. The main sources of irrigation were bore-wells, tube-wells and gravity channels. The net cultivated land turned out to be 0.68 hectares of which 67 percent was irrigated. On small farms, the net cultivated area was 0.56 hectares while on large farms it was 0.96 hectares.

Table 4: Land utilization pattern

(ha.)

Particular	Small			Large			Overall		
	IR	UR	Total	IR	UR	Total	IR	UR	Total
Kullu									
Total holding	0.43	0.51	0.94	0.75	0.80	1.55	0.52	0.59	1.11
Horticultural purpose	0.08	0.17	0.25	0.03	0.31	0.34	0.07	0.21	0.27
Uncultivable land		0.13	0.13		0.24	0.24		0.16	0.16
Cultivated land	0.36	0.21	0.56	0.72	0.25	0.96	0.46	0.22	0.68
Mandi									
Total holding	0.43	0.36	0.78	1.03	0.97	2.002	0.55	0.48	1.03
Horticultural purpose	0.03	0.09	0.12	0.34	0.35	0.69	0.09	0.14	0.24
Uncultivable land		0.06	0.06		0.24	0.24		0.10	0.10
Cultivated land	0.39	0.21	0.60	0.69	0.38	1.07	0.45	0.24	0.70
Solan									
Total holding	0.49	0.18	0.67	0.82	0.27	1.08	0.57	0.20	0.77
Horticultural purpose	0.07	0.05	0.12	0.11	0.03	0.14	0.08	0.04	0.12
Uncultivable land		0.13	0.13		0.15	0.15		0.14	0.14
Cultivated land	0.42		0.42	0.71	0.09	0.79	0.49	0.02	0.51

Note: IR- Irrigated Land & UR- Un-irrigated Land

In Mandi district, the sampled households had an average land holding of 1.03 hectares with 0.78 hectares on small farms and 2 hectares on large farms. About 53 percent of the total land holding was reported to have irrigation facility. The horticultural crops were given about 23 percent of the total land holdings. Sometimes, the seasonal agricultural crops were cultivated in the orchards with new/young plantations. The net cultivated land on small and large farms was 0.6 and 1.07 hectares, respectively giving an overall figure of 0.70 hectares.

A perusal of the table reveals that the sampled households in district Solan had an average land holding of 0.77 hectares. About 74 percent of the total land holding was irrigated. Gravity channels constructed by IPH department and maintained by local bodies like Panchayats and Gram Sabhas, were the main sources of irrigation. Net cultivated land turned out to be 0.51 hectares with 0.42 hectares on small and 0.79 hectares on large farms.

Cropping pattern

In order to examine the place and importance of vegetables in the study area, the cropping pattern of the area has been analyzed and presented in Table 5. The cropping pattern on the sampled farms of district Kullu showed that vegetable crops constituted the major proportion of the total cropped area. In the overall situation, the cereals, pulses and oilseeds were given only 19.8 percent of the total cropped area, however, this proportion was a bit higher (21.36 percent) on large farms than the smaller ones (18.7 percent). Thus, more than 80 percent of the total cultivated area was put under vegetables. Cabbage, cauliflower, capsicum, cucumber, pea, frenchbean, tomato and brinjal were the major vegetables grown in the area. Among these vegetables, cauliflower alone occupied 25 percent of the total cropped area as it was being grown thrice in a year. It was followed by cabbage, tomato, capsicum and pea. Cropping intensity obtained on small farms was 220 percent while that on large farms was 228.9 percent thus, giving an overall figure of 223.6 percent.

Table 5: Cropping pattern on sampled farms

(percent)

Crops	Kullu			Mandi			Solon		
	Small	Large	Overall	Small	Large	Overall	Small	Large	Overall
Kharif									
Cereals	6.44	9.97	7.88	7.43	9.13	7.98	4.60	6.46	5.30
Pulses	2.90	1.82	2.46	1.35	1.40	1.37	2.12	1.95	2.06
Cauliflower	12.24	9.86	11.27	10.45	7.00	9.42	-	-	-
Capsicum	9.86	7.27	8.80	5.60	6.09	5.77	14.16	8.64	12.10
Cabbage	6.44	3.64	5.30	-	-	-	-	-	-
French bean	3.48	2.51	3.08	3.82	6.70	4.72	7.08	5.63	6.54
Other vegetables	6.83	6.91	6.86	8.13	8.58	8.3	4.95	5.82	5.28
Sub total	48.19	41.98	45.65	36.78	38.90	37.56	32.91	28.5	31.28
Zaid rabi									
Cauliflower	10.50	8.73	9.78	7.43	7.49	7.47	16.29	15.85	16.13
Cabbage	5.86	7.97	6.72	7.59	7.49	7.58	-	-	-
Other vegetables	2.64	4.37	3.34	3.82	3.96	3.88	1.13	2.82	1.76
Sub total	19.01	21.06	19.85	18.85	18.93	18.93	17.42	18.67	17.89
Rabi									
Cereals	9.34	8.66	9.07	6.95	11.26	8.30	5.74	5.41	5.61
Oilseeds	0.00	0.91	0.37	-	-	-	0.00	1.50	0.56
Cauliflower	1.22	7.89	3.94	5.39	4.66	5.18	-	-	-
Pea	7.73	3.56	6.03	10.72	9.89	10.50	21.95	15.40	19.51
Cabbage	4.38	6.58	5.28	6.73	5.69	6.43	1.20	5.63	2.86
Other vegetables	-	-	-	-	-	-	2.13	7.74	4.22
Sub total	22.68	27.61	24.70	29.79	31.50	30.41	31.02	35.68	32.76
Zaid kharif									
Tomato	10.12	9.35	9.80	14.59	10.65	13.11	18.63	17.13	18.07
Sub total	10.12	9.35	9.80	14.59	10.65	13.11	18.63	17.13	18.07
Total cropped	100.00	100.00	100.01	100.00	100.00	99.99	100.00	100.00	100.00
area (ha.)	(1.24)	(2.20)	(1.51)	(1.49)	(2.63)	(1.71)	(1.13)	(2.13)	(1.37)
Net sown area (ha.)	0.56	0.96	0.68	0.60	1.07	0.70	0.42	0.79	0.51
Cropping intensity (percent)	220.14	228.89	223.60	246.29	245.88	245.49	271.02	268.35	270.03

In Mandi district too, the cereals, pulses and oilseeds occupied a back seat in the cropping pattern with a proportion of only 17.7 percent of the total cropped area. Among different vegetables, cauliflower occupied the highest (22 percent) proportion of total cropped area, followed by cabbage (14 percent), tomato (13 percent) and pea (10.5 percent). The importance given to different vegetables in the cropping pattern was almost the same on small and large farms as it was mainly governed by the prices fetched by different vegetables in the previous year.

Like other two districts, more than 86 percent of the total cropped area was occupied by vegetable crops in Solan district (Table 5). It can be observed from the table that all the crops even vegetables were being grown in their main seasons. Pea occupied the first position with 19.5 percent of the total cropped area. It was followed by

tomato, cauliflower and capsicum. Cropping intensity obtained on small farms was comparatively more than that on large farms.

Total production and utilization pattern of the produce

A perusal of Table 6 shows the total production and utilization pattern of the produce on different farms. The marketable surplus varied from 90 to 95 percent of the total produce. The losses incurred ranged between 0.15 to 5 percent. The post harvest losses were found to be the highest in tomato followed by capsicum and cauliflower in Kullu and Mandi districts while in Solan district cabbage incurred the highest losses followed by frenchbean. The percentage of marketed surplus was highest for cabbage in Kullu and Mandi while in Solan it was tomato which registered the highest proportion of the total produce to be marketed by the sampled farms.

Table 6: Total production and utilization pattern of the produce (Percent)

Crop	Category	Kullu				Mandi				Solan			
		TP (q/farm)	HC gifts & KP	Los-ses	Marke- ted surplus	TP (q/farm)	HC gifts & KP	Los-ses	Marke- ted surplus	TP (q/farm)	HC gifts & KP	Los-ses	Marke- ted surplus
Tomato	S	42.84	1.93	5.12	92.95	72.04	1.24	2.15	96.61	79.80	1.04	0.73	98.23
	L	74.16	1.22	5.14	93.64	92.40	1.00	1.17	97.83	146.37	0.62	0.40	98.98
	O	52.16	1.63	5.18	93.19	75.77	1.19	2.86	95.95	97.23	0.88	0.60	98.52
Pea	S	10.75	7.35	0.11	92.54	17.65	4.48	0.85	94.67	32.24	2.45	0.84	96.71
	L	8.97	9.91	0.35	89.74	28.60	2.62	0.57	96.81	38.70	2.31	0.80	96.89
	O	10.31	7.93	0.20	91.87	19.76	3.95	0.78	95.27	32.91	2.46	0.85	96.69
Cabbage	S	37.52	0.16	1.35	98.49	62.84	1.19	0.97	97.84	4.20	5.90	3.33	90.77
	L	62.10	0.63	0.78	98.59	105.5	0.63	0.70	98.67	36.24	1.82	0.97	97.21
	O	44.40	0.35	1.11	98.54	71.98	1.03	0.91	98.06	11.90	4.52	2.94	92.54
Cauli- flower	S	49.17	0.12	1.41	98.47	51.90	1.44	1.53	97.03	32.20	1.56	1.09	97.35
	L	94.28	0.42	1.09	98.49	73.94	0.91	0.66	98.43	55.77	1.18	0.63	98.19
	O	61.62	0.25	1.30	98.45	56.03	1.32	1.29	97.39	37.24	1.45	0.94	97.61
Capsi- cum	S	17.08	2.99	2.51	94.50	10.71	4.11	1.96	93.93	24.00	2.13	1.00	96.87
	L	23.84	2.53	3.46	94.01	20.32	2.16	1.08	96.76	27.97	2.14	0.93	96.93
	O	19.30	2.78	2.72	94.50	12.51	3.52	1.68	94.80	25.04	2.13	0.98	96.89
French bean	S	4.30	9.53	0.08	90.39	6.27	4.29	0.70	95.01	8.16	5.07	3.19	91.74
	L	5.45	9.72	0.23	90.05	18.83	2.77	0.40	96.83	12.00	4.41	2.33	93.26
	O	4.57	9.63	0.15	90.22	8.73	5.95	0.61	93.44	9.03	5.36	2.88	91.76

TP- Total Production, HC- Home Consumption, KP- Kind payment

Marketing Functionaries, Marketing Channels and Price Spread

Marketing of vegetables is a complex activity as vegetables need speedy marketing and quick disposal. An attempt has been made in this part to explain different marketing channels, costs and margins associated with them, price spread, producer's share and marketing efficiency obtained through different marketing channels.

Marketing channels for selected vegetable crops

Different marketing channels were found operational in the study area. However, no significant difference was observed amongst the farmers of small and large categories, so far as the channelization of the produce was concerned. Hence, the different categories were not taken into consideration while presenting the results related to the marketing of produce. The marketing channels followed by the farmers in the study area have been enumerated in Table 7.

Table 7 Marketing channels operational in study area

Channel No.	Channel	Quantity disposed (percent)
Channel-I	Producer → Commission agents/Wholesaler → Trader (within and outside the state) → Retailer → Consumer	40.50
Channel-II	Producer → Commission agent → Wholesaler → Retailer → Consumer	28.25
Channel-III	Producer → Commission agent → Retailer → Consumer	28.20
Channel-IV	Producer → Retailer → Consumer	2.62
Channel-V	Producer → Consumer	0.55

It can be observed from the table that channel-1 including producer, wholesaler/commission agent, and trader, was the most dominant channel. On an average, 40.5 percent of the produce was channelized through this channel. Channel-II was the other important channel where the commission agents and the wholesalers played their roles separately. Channel-III was found to be equally important, wherein the produce was directly purchased by retailers from the commission agents and then was sold to the consumers. About 28 percent of the total produce was disposed through this channel. Some of the produce was also sold through channel-IV, but very small quantity was sold directly from producers to the consumers.

Price spread for selected vegetables

The percentage of consumer's price received by producer is taken as a measure to estimate the efficiency of a marketing channel. The channels involving the least number of functionaries come out to be the most efficient channels. But, it is also true at the same time that the so called most efficient channel may not be the practical one and preferred by farmers as is evident from Table 7 that channels IV & V having comparatively less intermediaries, were not much preferred by the farmers. Marketing costs, margins and price spread in different channels have been explained below.

Price spread in channel-I

Marketing costs, margins and price spread for different vegetables channelized through channel-I have been summarized in Table 8. It can be observed from the table that the producer's sale price per quintal varied from Rs.625 for cabbage to Rs. 1750 for pea. The major costs incurred at producer's level were picking/harvesting, assembling, grading, packing, packing material, transportation, loading/unloading charges, weighing charges and losses. The difference in the costs incurred by producer for different vegetables mainly accrued to labor required for picking, cleaning and packing, type of packing material used, losses during transportation and weighing charges which were generally charged in the form of deduction of 1-2 kilograms per lot (*nag*) of the produce. These costs varied from Rs. 45 to 121.5 for different vegetables thus giving the net price received by the producer ranging between Rs. 580 for cabbage and Rs. 1642.7 for pea. In this channel the commission agent acted as the wholesaler and incurred the costs viz., cleaning, sorting and grading which varied from Rs. 29.5 to Rs. 60. The traders (both from within and outside the state) played an important role in the marketing of vegetables. The costs incurred by these traders to handle the produce to the ultimate destination included packing, loading/unloading, commission, transportation and other miscellaneous charges which varied from Rs. 105.5 per

Table 8: Price spread in channel-I**(Rs./q)**

Sr. No	Particulars	Cabbage	Cauliflower	Tomato	Pea	Capsicum	French bean
1.	Net Price received by producer	580	918.5	1034.2	1642.7	1507.2	1303.5
2.	Costs incurred by producer	45	66.5	90.8	107.3	117.8	121.5
3.	Producer's sale price/CA's purchase price	625.0	985.0	1125.0	1750.0	1625.0	1425.0
4.	Costs incurred by CA/WS	29.5	47.0	48.5	49.3	60.0	54.0
5.	Commission of commission agent	31.3	49.3	56.3	87.5	81.3	71.3
6.	Sale price of CA/WS and purchase price of trader	685.8	1081.3	1229.8	1886.8	1766.3	1550.3
7.	Costs incurred by trader	101.5	142.4	152.3	148.3	163.3	146.0
	Trader's margin	144.6	147.8	172.8	187.8	262.8	249.3
8.	Sale price of trader/purchase price of retailer	931.9	1371.5	1554.9	2222.9	2192.4	1945.6
9	Costs incurred by retailer	119.8	124.0	193.0	183.8	188.8	171.3
10	Retailer's margin	210.7	258.8	293.8	276.3	281.3	260.3
11	Consumer's price	1262.4	1754.3	2041.7	2683.0	2662.5	2377.2
12	Price spread	682.4	835.8	1007.5	1040.3	1155.3	1073.7

quintal for cabbage to Rs. 163.3 per quintal for capsicum. The trader's margin varied from Rs. 145 per quintal to Rs. 163 per quintal. The retailer's purchase price was highest for pea (Rs. 2223/q) and lowest for cabbage (Rs. 932/q). The costs incurred by the retailer were the highest among all the functionaries. Losses constituted the major proportion of the costs incurred at retailers' level. Reduction in weight over time in all the green leafy vegetables and the unsold produce that went waste at the end due to spoilage constituted a major proportion of losses to the retailer. Such losses amounted up to 50-60

percent of the total marketing costs incurred by retailer. These losses were highest in tomato followed by capsicum. The similar observations were quoted by Baba et al. (2010, p.115) while studying the price spread of vegetables in Kashmir valley.

Price spread in channel-II

Per quintal costs incurred by various market functionaries while following channel-II, has been presented in Table 9. A perusal of the table reveals that the wholesale price received by producer varied from Rs. 660 for cabbage to

Table 9: Price spread in channel-II**(Rs./q)**

Sr. No	Particulars	Cabbage	Cauliflower	Tomato	Pea	Capsicum	French bean
1.	Net Price received by producer	620.0	998.0	1108.0	1880.2	1632.0	1540.0
2.	Costs incurred by producer	40.0	52.0	92.0	111.8	118.0	110.0
3.	Producer's sale price/CA's purchase price	660.0	1050.0	1200.0	2000.0	1750.0	1650.0
4.	Costs incurred by commission agent	30.4	50.4	52.4	47.5	59.5	49.5
	Commission of commission agent	33.0	52.5	60.0	100.0	87.5	82.5
5.	Sale price of CA and purchase price WS	723.4	1152.9	1312.4	2147.5	1897.0	1782.0
6.	Costs incurred by wholesaler	131.0	142.0	148.0	134.0	125.0	105.0
7.	Wholesaler's margin	151.8	152.5	162.5	200.5	220.5	208.5
8.	Retailer's price	1006.2	1447.4	1622.9	2482.0	2242.5	2095.5
9.	Costs incurred by retailer	105.5	106.5	103.5	143.5	158.0	138.0
10	Retailer's margin	195.5	255.0	225.0	265.0	275.0	250.0
11	Consumer's price	1307.2	1808.9	1951.4	2890.5	2675.5	2483.5
12	Price spread	687.2	810.9	843.4	1010.3	1043.5	943.5

Rs. 2000 for pea. The costs incurred by the producers ranged between Rs. 42 to 118. Thus, the net price received by producers varied between Rs. 620 to 1880 for different vegetables. The commission agent incurred less marketing costs as compared to other intermediaries because he had just to maintain his office, storage godowns and hospitality to produce sellers and buyers. Wholesaler had to pay commission to the commission agent and other costs incurred by him included the rent of the shop, charges for electricity & water, losses during storage and sometimes the labor charges for recleaning, sorting and grading. The wholesaler's margin in this channel varied from Rs. 152 for cabbage to Rs 221 for capsicum.

The retailer's margin was observed to be the highest among all the market functionaries and thus, contributed the maximum towards price spread because he directly dealt with the consumer and there was no check on the prices charged by him from the consumer. The price spread was highest for capsicum followed by pea and frenchbean.

Price spread in channel-III

It can be observed from Table 10 that the producers realized the highest net price for frenchbean followed by capsicum and pea. The marketing costs incurred by farmer/producer also varied in the similar fashion. The costs incurred by CA/WS varied between Rs. 36 and Rs. 63 for different

Table 10: Price spread in channel-III

		(Rs./q)					
Sr. No	Particulars	Cabbage	Cauliflower	Tomato	Pea	Capsicum	French bean
1.	Net Price received by producer	680.0	1000.0	1015.0	1301.0	1441.0	1731.0
2.	Costs incurred by producer	45.0	55.0	85.0	99.0	109.0	119.0
3.	Producer's sale price/CA's purchase price	725.0	1055.0	1100.0	1400.0	1550.0	1850.0
4.	Costs incurred by CA/WS	35.5	43.5	42.5	52.5	62.5	54.5
	Commission of commission agent	36.3	52.8	55.0	70.0	77.5	92.5
5.	Sale price of CA/WS and purchase price of retailer	796.8	1151.3	1197.5	1522.5	1690.0	1997.0
6.	Costs incurred by retailer	117.8	115.0	105.0	125.0	145.0	120.0
7.	Retailer's margin	202.3	230.5	220.5	250.5	240.5	225.5
8.	Consumer's price	1116.8	1496.8	1523.0	1898.0	2075.5	2342.5
9.	Price spread	436.8	496.8	508.0	597.0	634.5	611.5

vegetables. The price offered by CA/WS to the retailer varied from Rs. 797 for cabbage to Rs. 1997 for frenchbean. The losses due to spoilage were quite high in vegetables and thus, constituted the major proportion of the costs incurred at retailers' level. The ultimate consumers' price obtained in this channel was highest for frenchbean followed by capsicum and pea.

Producer's Share in Consumers' Rupee

The producer's share in consumer's rupee was worked out and has been presented in Table 11. A quick perusal of the table indicates that the consumer's share for cabbage was the highest in Channel-III followed by Channel II and I. In case of cauliflower too, the proportion of consumer's rupee received by the producer was maximum (66.81 percent) in Channel-III followed by Channel-II (55.17 percent) and I (52.36 percent). The producer's share behaved in the similar fashion for the other four vegetables. A general conclusion can be drawn from the table that the producers received the highest proportion of the consumer's rupee through Channel-III for all the vegetables under study.

This was because of the fact that minimum number of functionaries were involved in this channel. Similar observations were recorded by Singh and Singh (2009, p.117) while studying the marketing of mustard in Rajasthan. NamDeo et al. (2006, p.97) and Shiyani et al. (1998, p.156) also supported the same point of view.

Table 11: Producer's share in consumer's rupee

(percent)

Particulars	Channel-I	Channel-II	Channel-III
Cabbage	45.94	47.43	60.89
Cauliflower	52.36	55.17	66.81
Tomato	50.65	56.78	66.65
Pea	61.23	65.05	68.55
Capsicum	56.61	61.00	69.43
French bean	54.83	62.01	73.90

Marketing Efficiency

The efficiency of any marketing channel is judged by the fact that the producers receive remunerative prices and the consumers get the produce at reasonable and

affordable price at the same time. Marketing efficiency of different marketing channels for different vegetables was examined with the help of Marketing Efficiency Index (MEI). The value of MEI was observed to be the highest for channel-III indicating thereby that channel-III was the most efficient channel when compared to the other two channels (Table 12). Among different vegetables marketed through channel-III, the value of MEI was highest for frenchbean and lowest for cabbage. Channel-II ranked second in terms

Table 12: Marketing efficiency of different vegetables under study

Channel/Crop	Channel-I	Channel-II	Channel-III
Cabbage	0.85	0.90	1.56
Cauliflower	1.10	1.23	2.01
Tomato	1.03	1.31	2.00
Pea	1.58	1.86	2.18
Capsicum	1.30	1.56	2.27
French bean	1.21	1.63	2.83

of marketing efficiency for marketing of all other selected vegetables. Thus, it can be concluded that the marketing channel with lesser number of market functionaries was comparatively more efficient as compared to the channels with more number of market functionaries. Tripathia et al. (2009, p.106) also reported the similar results while studying the marketing of ginger in Meghalaya.

Conclusions and Policy Implications

The study has observed that the production and marketing of vegetables is highly remunerative; hence, the area under these crops can be expanded and the production can be enhanced by encouraging the farmers. Though, regional markets played an important role in the marketing of vegetables, yet, market malpractices were reported by some of the farmers. The major problem they were facing was the fluctuating market prices which was further aggravated by the lack of market information. It was also observed that the retailer's margin was the highest among all the market functionaries. The producer's share in consumer's rupee varied from 46 percent to 74 percent for different vegetables under different marketing channels which can further be enhanced by reducing the marketing costs and checking the excessive margins retained by various functionaries. Policy implications emerged from the study are mentioned below:

Extension facilities should be strengthened so as to exhort the adoption of improved technology to enhance the returns from vegetable production. Establishment of small scale processing units at farmers' or village level may help the farmers to increase their returns by adding value to their low grade farm produce and reducing wastage during the peak periods. Strengthening of farmers' organizations and cooperative marketing institutions may ensure efficient marketing of vegetables and remunerative returns to the farming community. There should be some check on the prices charged by the retailers. The retailers' purchase prices should be flashed on the ticker boards in the markets by the market committees and the retailers should not be allowed to charge beyond some fixed percentage (say 20 percent or 25 percent) of their purchase price. A mechanism is required to be created to ensure the proper implementation of the rules and regulations for deductions at market place. Promotion of contract farming in the vegetable producing areas is needed to be put in place so that the farmers get proper technologies like latest seed and technical knowhow, the remunerative agreed upon prices and do not face problem in marketing their produce. It will also help in expanding area under vegetables/high value cash crops and hence, will uplift the socio-economic status of farming community.

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The productivity of work is not the responsibility of the worker but of the manager.

—Peter F. Drucker

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