IMPACT OF AMENDED APMC ACT ON APPLE MARKETING IN HIMACHAL PRADESH

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ABSTRACT

The major bottleneck of Agricultural Produce Marketing Committees (APMCs) is that agri-transactions are confined to only regulated market yards. However amended APMC act prevents anticompetitive practices.There is no compulsion on the producer to sell their produce in APMC market yards, producer are quite free to sell directly to private companies or private market yards or farmers-consumer market. An endeavor was made to analyse the impact of amended APMC act on apple business in Himachal Pradesh. Study has covered two districts of Himachal Pradesh viz. Shimla and Kullu. Purposive, random and snow ball sampling were adopted to arrive at various units of analysis. Many aspects of marketing have been analysed in a very proper way. Total 88 apple growers were selected. These apple growers were further categorized in to two Groups viz. Group 1 (58 growers who follow traditional supply chain) and Group 2 (30 growers who follow traditional and modern/ modern supply chain both). It was found that marketing efficiency of Adani and Apni Mandi (Channel E) is highest by Shepherd's formula and Acharya's formula respectively.
Key Words- *amended APMC act, modern supply chain, marketing efficiency, post harvest management traditional APMC act and temperate fruits.*

INTRODUCTION

It has been experienced through many studies that traders and wholesalers are involved in malpractices and exploit the primary producers at great extent in agri-supply chain. Being the long supply chain, producers obtain only about 53 percent of final prices of agricultural commodities with 31 percent being the share of middlemen and the remaining 16 percent being market cost. In case of vegetables and fruits the share of the farmer in consumer rupee is less than 39 percent and 34 percent respectively. Apart from this, APMCs are preventing direct access of framers to retailers and to end-consumers. Thus to have 'barrier-free' agricultural marketing system in country, choice of multiple and competitive market channel to farmers, independent regulatory authority to encourage private investors and smooth license & registration of traders in regulated market yards were advised by many researchers and scholars. Consequently, amended APMC Act was implemented in 2003 titled as the "State Agricultural Produce Marketing (Development and Regulation) Act, 2003" **(Farmer's Forum, 2011).**

The present study is focusing on marketing practices of apple growers of major apple producing state where APMC Act has been amended. There are three apple producing states viz. Jammu & Kashmir, Himachal Pradesh and Uttarakhand, later two have the amended APMC Act but Himachal Pradesh has higher (8.92 Lakh MT) apple production than Uttarakhand (1.35 Lakh MT) in 2011 **(NHB)**. Private players viz. Adani Agri fresh, Mother Dairy, Concor, Reliance, Godrej etc. are procuring apple directly from primary producers and comparatively paying better price to them. Thus HP state was purposively selected for present study.

PROBLEM STATEMENT

The single the most problem facing by the apple industry of HP is inefficient supply chain constituted with numbers of middlemen. One box of apple is passed through many hands and after each intermediary cost is increased unnecessarily which ultimately decreases producer's share in consumer rupee. However amended APMC Act has opened new gates in front of HP apple growers. Growers can now sale to private market yards, retail outlets and private market yards and receive better price than regulated market yards. It was experienced that grower's share varies between 50- 70 paisa in consumer rupee in traditional chain while after APMC Act amendments as private player are allowed to procure apple from producers directly, producer shares has been increased up to 90 paisa and more **(Singh 2009)**. Various Private and Government undertaking companies viz. Reliance Fresh, Godrej, Adani Agri Fresh, Mother Dairy, Fresh and Healthy etc. procure apple directly from producers and offer healthy prices to primary producers but still many apple growers do not sale to private buyers. They have good contacts with APMC traders and supplying apply to them. Though growers are exploited at great extent by traders and wholesalers and this intervention of intermediaries reduce the producer's share in consumer rupee **(Pandey 2013)**. Thus an attempt has been made to assess the overall impact of amended APMC Act on various aspects of apple marketing in Himachal Pradesh.

OBJECTIVES OF THE STUDY

The present was proceeded with following objectives:
➢ To identify marketing channels followed by apple growers in HP.
➢ To analyse the impact of amended APMC Act on marketing practices.
➢ To evaluate the efficiency of traditional and modern apple supply chain.

REVIEW OF LITERATURES

Singh *et al* **(2009)** have showed in their paper "Supply Chain Management and Indian Fresh Produce Supply Chain: Opportunities and Challenges" that Adani Fresh but Adani buy only 'A' grade apple with certain specifications. Study has compared the net price received by producer and price spread across the traditional and modern supply chain. It is assumed that the sell price is Rs. 100 in both supply chain then on an average, at Azadpur mandi, net price received by grower is Rs. 57.4 while this figure is Rs. 97.8 with Adani fresh.

Rauf *et al* **(2011)** have showed in their study "Economics of Production and Marketing of Apple in Himachal and Jammu & Kashmir" that among all channels, through channel 'c' (producer-commission agent/ wholesaler-retailer-consumer) highest quantities of apple were being supplied in both of state during the season. Orchardists don't have to pay any marketing cost if they sell produce to pre harvest contractors, net price received by orchardist by this channel is Rs. 230 per

box in HP and Rs. 239 in J&K. Orchardists had to paid the highest marketing cost for Delhi in cooperative channel in HP and J&K. Producers had to paid relatively higher cost in Delhi market due to commission of commission agents but in Bangalore cost is high because of high transportation cost from both states.

Pandey *et al* **(2009)** have showed in their study "ICT System for Increasing Efficiency of Apple-Value Chain" that India produces about 8 percent of the world's fruit and about 15 percent of the world's production of vegetables but looses 25 to 40 percent of the fruits produced due to lack of post harvesting infrastructure such as cold chains, transportation, storage and processing facilities. In round figure, India wastes fruits and vegetables every year equivalent to the annual consumption of the United Kingdom.

RESEARCH METHODOLOGY

Descriptive research design was adopted for accumulating the information about different aspects of respondents viz. apple growers, wholesalers and retailers etc. Secondary data was collected from concerned web sites, books, journals, concerned departments etc. while primary data was collected from apple growers and different marketing intermediaries involved in apple marketing. Districts Shimla and Kullu have highest apple production in the state, which are together contributing 88.99 percent of the entire apple production of the state. Thus districts Shimla and Kullu were purposively selected. Same methodology was adopted to select blocks Jubbal-Kotkhai and Rohru from district Shimla and blocks Kullu and Nagar from district Kullu. In next step, eight villages were selected randomly. Further apple growers were categorized in to two groups:

Group1- Growers who follow traditional supply chain and
Group2 -Growers who follow the traditional as well as modern supply chain.

Table1. Distribution of Apple Growers

Districts	Blocks	Name of Villages	Growers who Follow Traditional Supply Chain (Group1)	Growers who Follow Traditional as well as Modern Supply Chain (Group2)	Block wise Apple Growers
Shimla	**Jubbal-Kotkhai**	**Kiari**	3	1	**19**
		Jashla	5	2	
	Rohru	**Bhalara**	5	4	**23**
		Bijory	4	2	
Kullu	**Kullu**	**Nagabag**	7	6	**22**
		Bandrol	4	0	
	Nagar	**Puid**	6	2	**24**
		Raison	6	2	
Category wise Apple Grower			40	19	**88**

Fifteen percent growers from both the groups were selected by adopting simple random sampling and survey was conducted. Therefore 58 apple growers were belonging to group1 while 30 apple growers have formed group2. One APMC market yard from each district yard having highest

arrivals (i.e. Bhattakoofer from Shimla and Bandrol from Kullu) was purposively chosen for study. 10 wholesalers from APMC market yard Bhattakoofer (Shimla) and 10 wholesalers from APMC market yard Bandrol (Kullu) were selected. 10 apple retailers from Bada Shimla city and 10 apple retailers from Kullu city were randomly selected. Apart from this, 10 retailers who follow modern supply chain and channelizing apple of concerned companies were selected by adopting snow ball sampling technique. Three companies viz. Adani Agri Fresh, Mother Dairy and Fresh and Healthy (Concor) were identified which procure apple directly from respondents. The well structured undisguised questionnaires were designed for taking in-depth interviews of respondents.

- **Formulas Used**

Following formulas were adopted for analyzing the traditional and modern supply chain of apple in study area.

a) Marketing Margins

Following formula was adopted to analyse the marketing margins.

$$A_{mi} = P_{mi} - (P_p + M_{ci})$$

Where,

A_{mi} : The Absolute Margins of the ith Middleman
P_{mi} : The Selling Price of the ith Middleman
P_p : Purchasing Price
M_{ci} : Marketing Cost of the ith Middleman

ii) Marketing Cost

This cost limits the income of producer and affect the cost of living of consumers. Following formula was adopted to determine the marketing cost.

$$T_c = C_p + M_{ci}$$

Where,

T_c : Total Cost of Apple Marketing
C_p : Cost Borne by Producer
M_{ci} : Marketing Cost Increased by i[th] middleman

iii)   Marketing Efficiency

Shepherd's formula and Acharya's formula was used for measuring the marketing efficiency of traditional as well as modern supply chain.

Shepherd's Formula   Acharya's Formula

$$ME = \frac{V}{I} - 1 \qquad\qquad MME = \frac{GP}{MC+MM}$$

Where,

ME = Marketing Efficiency   **MME** = Modified Measure of Marketing Efficiency
V = Value of Goods (Consumer Price)   **GP** = Net Price received by Grower
I = Total Marketing Cost   **MC** = Total Marketing Cost
                                            MM = Net Marketing Margins

RESULT AND DISCUSSIONS

Following heads are presenting the results and discussions of study.

i. Identification of Marketing Channels

Following channels were identified in the study area, which have been adopted by respondents in both groups.

Channel A. Grower ⟶ Forwarding Agent ⟶ Commission Agent ⟶ Wholesaler ⟶ Retailer ⟶ Consumer

Channel B. Grower ⟶ Commission Agent ⟶ Wholesaler ⟶ Retailer ⟶ Consumer

Channel C. Grower ⟶ Pre Harvest Contractor ⟶ Wholesaler ⟶ Retailer ⟶ Consumer

Channel D. Grower ⟶ Processing unit ⟶ Consumer

Channel E. Grower ⟶ Consumer

Channel F. Grower ⟶ Company ⟨ Wholesaler ⟶ Retailer ⟶ Consumer / Consumer

Above six channels were identified which were adopted by respondents in Group 1 and Group 2. It was analysed that channel A, B, C and D were adopted by respondents in Group 1 while all marketing channels (except channel C) were adopted by respondents in Group 2.

ii (a) Marketing cost and net return for respondents in Group 1

Channel A

Table 2 depicts that respondents have received Rs. 31.32 in Delhi market followed by Rs.30.1 in Chandigarh market and Rs. 25.43 in HP for 1 kg apple. Though grower's net return is highest in Chandigarh market which is qualified to Rs. 22.5 followed by Rs. 21.01 in Delhi Market and Rs. 18.56 in HP. Grower have to face extra cost as commission of commission agent and market fee in Delhi market, but this cost is faced only by wholesalers in HP and Chandigarh market yards. Table further shows from the table that total marketing cost for 1 kg apple is highest for Delhi (Rs.10.31) and lowest (Rs. 6.87) for APMC yards of HP.

Channel B

Table 2 shows that grower received Rs.32.88 in Delhi market followed by Rs. 29.58 in Chandigarh market and Rs. 24.75 in HP for 1kg apple. It was analysed that grower's net return is Rs. 23.59 in Delhi followed by Rs. 21.91 in Chandigarh and Rs.19.18 in HP. Growers who sold apple to Delhi have faced Rs. 2.75 as extra cost because commission of commission agent and market fee is paid by growers while this cost is faced by wholesalers in Chandigarh and APMC yards of HP. Table further shows from the table that total marketing cost for 1 kg apple is highest for Delhi (Rs.9.29) and lowest (Rs. 5.57) for APMC yards of HP.

Channel C

Table 2 reveals that apple growers do not incur any marketing cost under channel C, as produce is sold to pre harvest contractors who bear all marketing cost themselves. The average price growers receive under this channel is Rs. 22.65.

Channel D

Data pertaining to cost and margin under Channel D elicits that growers receive Rs. 5.25 for 1 kg apple. It is minimum support price at which C grade apple is procured by HPMC. It was analysed that Rs. 1.45 has been incurred on labour followed by Rs. 0.46 on packing material, Rs.0.29 on transportation cost and Rs. 0.04 for miscellaneous charges. The total marketing cost under this channel is qualifying to Rs. 2.24. Therefore grower's net return is Rs.2.95under channel D.

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Table 2: Marketing Cost and Net Return under Different Marketing Channels for Group 1   **N=58**

Particulars	Channels Followed by Sampled Apple Growers (Group 1)							
	Ch. A (Through F. Agents)			Ch. B (Directly to Commission Agent of APMC)			Ch. C (Pre Harvest Contractors)	Ch. D (HPMC)
	Delhi	Chandigarh	HP	Delhi	Chandigarh	HP		
	Rs/kg	Rs/kg	Rs/kg	Rs/kg	Rs/kg	Rs/kg	Rs/kg	Rs/kg
A. Price received by Growers at APMC	31.32	30.10	25.43	32.88	29.58	24.75	22.65	5.25
A. Labor Cost								
1. Picking, Assembling,	0.28	0.24	0.30	0.33	0.22	0.35	-	0.28
2. Grading	0.48	0.47	0.34	0.46	0.46	0.45	-	0.45
3. Packing	0.14	0.14	0.17	0.11	0.13	0.14	-	0.11
4.1 Loading	0.14	0.11	0.12	0.08	0.09	0.11	-	0.17
4.2 Unloading	0.15	0.13	0.14	0.16	0.18	0.14	-	0.19
5. Carriage to Road Head	0.20	0.29	0.31	0.30	0.35	0.25	-	0.25
C. Market Costs								
1.Packaging Material Cost	3.00	2.86	2.80	3.00	2.90	2.95	-	0.46
2. Labeling , Stenciling etc.	0.07	0.07	0.07	0.07	0.07	0.07	-	-
D. Transportation Cost	2.50	2.82	2.33	1.75	2.95	0.90	-	0.29
E. Commission of Forwarding Agents	0.14	0.15	0.14	-	-	-	-	-
F. Commission and Market Fee	2.81	-	-	2.71	-	-	-	-
G. Other Charges								
1. State Tax	0.15	0.14	-	0.15	0.15		-	-
2. Miscellaneous Charges	0.25	0.18	0.15	0.17	0.17	0.21	-	0.04
H. Total Marketing Cost	10.31	7.60	6.87	9.29	7.67	5.57	-	2.24
Grower's Net Return (A-H)	21.01	22.5	18.56	23.59	21.91	19.18	22.65	2.95

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ii (b) Marketing cost and net return for respondents of Group 2

Channel A

Table 3 shows that average price received by respondents is Rs. 30.25 in Delhi market followed by Rs.29.75 Chandigarh and Rs. 26.66 in HP under channel A. It was analysed that grower's net return is Rs. 22.50 in Chandigarh market followed by Rs. 19.97 in Delhi market and Rs. 19.79 in APMC market yards of HP. The perusal of table shows that total marketing cost borne by growers is highest i.e. Rs. 10.31 in Delhi market followed by Rs. 7.60 in Chandigarh and Rs.6.87 in HP. Growers who approach Delhi market have to face market fee and commission of commission agent as extra cost which decrease the net return of growers while these cost are faced by buyers in Chandigarh and Himachal Pradesh.

Channel B

Table 3 clearly reveals that grower's net price is Rs.31.55 in Delhi market followed by Rs. 31.440 in Chandigarh market and Rs. 26.60 in Himachal Pradesh via B channel. The table further indicates that total marketing cost borne by growers is Rs. 9.64, Rs. 7.05 and Rs. 5.91 for Delhi, Chandigarh market and Himachal Pradesh respectively. As the growers have to pay Rs. 2.91 as commission of commission agent and market fee in Delhi market, it reduces the net return of growers. Thus grower's net return is Rs. 24.39 in Chandigarh followed by Rs. 24.91 Delhi and Rs. 20.69 in Himachal Pradesh via channel B.

Channel D

Respondents sold their C grade apple at MSP (Rs 5.25) via channel D. Table 3 show that total marketing cost is qualifying to Rs. 3.36. It was observed that up to depot total marketing cost is faced by growers. It was also analysed that grower's net return is Rs. 1.89 for 1 kg apple under channel D.

Channel E

This marketing channel is known as modern marketing channel came in to existence after implementation of amended APMC Act. Table 3 shows that net price received by apple growers is Rs. 23.44 and total marketing cost is Rs. 4.77. Table also elicits that grower's net return is qualified to Rs. 18.70 under this channel.

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Table 3: Marketing Cost and Net Return under Different Marketing Channels for Group 2   N= 30

Particulars	Channels Followed by Sampled Apple Growers (Group 2)										
	Ch. A (Through F. Agents)			Ch. B (Directly to Commission Agent of APMC)			Ch. D (HPMC)	Ch. E (Apni Mandi)	Ch. F Directly to Company		
	Delhi	Chandigarh	HP	Delhi	Chandigarh	HP			Adani	Mother Dairy	Fresh and Healthy
	Rs/kg	Rs/kg	Rs/kg	Rs/kg	Rs/kg	Rs/kg	Rs/kg	Rs/kg	Rs/kg	Rs/kg	Rs/kg
A. Price received By Growers	**30.25**	**29.75**	**26.66**	**31.55**	**31.44**	**26.60**	**5.25**	**23.44**	**53.45**	**50.00**	**51.6**
B. Labour cost											
1. Picking, Assembling,	0.39	0.37	0.45	0.38	0.25	0.50	0.41	0.35	0.47	0.54	0.31
Grading	0.28	0.39	0.47	0.25	0.28	0.48	0.45	0.33	0.58	0.53	0.50
3. Packing	0.18	0.15	0.15	0.17	0.19	0.19	0.14	0.17	0.18	0.19	0.15
4.1 Loading	0.16	0.15	0.14	0.13	0.10	0.15	0.18	0.83	0.28	0.17	0.75
4.2 Unloading	0.20	0.16	0.12	0.18	0.13	0.13	0.18	0.53			
5. Carriage to Road Head	0.21	0.25	0.21	0.25	0.22	0.24	0.26	0.23	0.10	0.24	0.24
C. Market Costs											
1.Packaging Material cost	3.00	3.01	3.18	3.00	3.05	2.92	1.17	1.33		2.40	2.50
2. Labeling , Stenciling etc.	0.09	0.07	0.09	0.07	0.08	0.07	-	0.05	-	0.10	0.15
D. Transportation Cost	2.50	2.19	1.91	2.00	2.48	0.89	0.57	0.91	1.14	-	-
E. Commission of Forwarding Agents	0.13	0.13	0.11	-	-	-	-	-	0.20	-	-
F. Commission and Market Fee	2.81	-	-	2.91	-	-	-	-	-	-	-
G. Other Charges											
1. State Tax	0.16	0.16		0.14	0.15						
2. Miscellaneous Charges	0.17	0.15	0.04	0.16	0.12	0.34	-	0.01	-	-	-
H. Total Marketing Cost	**10.28**	**7.18**	**6.87**	**9.64**	**7.05**	**5.91**	**3.36**	**4.74**	**2.95**	**4.17**	**4.60**
Grower's Net Return (A-H)	**19.97**	**22.57**	**19.79**	**21.91**	**24.39**	**20.69**	**1.89**	**18.70**	**50.50**	**45.83**	**47.00**

Channel F

Table 3 is depicting that growers have received Rs. 53.45 from Adani followed by Rs. 51.6 from Fresh and Healthy and Rs. 50.0 from Mother Dairy. Table further reveals that growers have to face transportation cost under the supply chain of Adani which is qualified to Rs. 1.14 while this cost is incurred by Mother Dairy and Fresh and Healthy under channel F.

It was also analysed that growers have to incur Rs. 2.4 and Rs 2.5 on packaging for Mother Dairy and Fresh and Healthy but this cost is nil under Adani supply chain because Adani supplies plastic crates to its member growers. The total marketing cost borne by growers is Rs. 2.95, Rs. 4.17 and Rs. 4.6 under supply chain of Adani, Mother Dairy and Fresh and Healthy respectively. Therefore grower's net return is Rs. 50.5 from Adani followed by Rs. 47 from Fresh and Healthy and Rs. 45.83 from Mother Dairy respectively.

iii. Marketing cost and margins for wholesalers under traditional marketing channels

The perusal of table 4 has elicited that wholesalers have sold the apple of Group 1 at Rs. 34.70 and Rs. 33.22 and secured the margins to Rs. 6.35 and Rs. 4.95 via channels A and channel B respectively. Total marketing cost incurred by wholesaler is Rs. 2.92 and Rs. 2.52 via channel A and channel B respectively. Table has further elicited that wholesalers have sold the apple of Group 2 at Rs. 33.12 and Rs. 33.63 and secured margins to Rs. 3.93 and Rs. 3.99 via channel A and channel B respectively. Total marketing cost incurred by wholesalers is Rs. 2.93 and Rs. 3.04 via channel A and channel B respectively.

Table 4: Marketing Cost and Margins (in Rs.) at Wholesalers' Level

APMC Market Yards of HP				
Particulars	**Group 1**		**Group 2**	
	Channel A	**Channel B**	**Channel A**	**Channel B**
A. Price Paid By Wholesalers	25.43	24.75	26.26	26.60
B. Marketing Cost incurred by Wholesalers				
1 Labour Charges	0.17	0.15	0.12	0.12
2 Loading/ Unloading	0.30	0.30	0.30	0.30
3 Spoilage @ 2.5%	0.63	0.61	0.65	0.66
4 Post & Telegraph	0.07	0.03	0.05	0.03
5 Market Fee @5 %	1.25	1.23	1.31	1.33
6 Transportation Cost	0.50	0.20	0.50	0.60
Sub Total	**2.92**	**2.52**	**2.93**	**3.04**
C. Wholesalers' Margins	**6.35**	**4.95**	**3.93**	**3.99**
D. Selling Price (A+B+C)	**34.70**	**32.22**	**33.12**	**33.63**

iv (a) Marketing cost and margins for retailers under traditional marketing channels

It is evident from the table 5 that retailers have sold apple of Group 1 at Rs. 41.79 and Rs. 41.15, incurred Rs. 3.62 and Rs. 3.63 as total marketing cost and secured their margins to Rs.3.47 and Rs. 3.53 via channel A and channel B respectively. On the other hand, retailers have sold apple of Group

2 at Rs. 42.70 and Rs. 41.82, incurred Rs. 3.62 and Rs. 3.15 as total marketing cost and secured their margins to Rs. 5.96 and Rs. 5.04 via channel A and channel B respectively.

Table 5: Marketing Cost and Margins (in Rs.) at Retailers' Level

	Group 1		Group 2	
	Channel A	**Channel B**	**Channel A**	**Channel B**
A. Gross Price Paid By Retailers	**34.70**	**32.22**	**33.12**	**33.63**
B. Marketing Cost incurred by Retailers				
1 Loading/ Unloading	0.15	0.15	0.15	0.15
2 Spoilage @ 4 %	1.38	1.22	1.32	1.34
3 Market Charges (Rent, Electricity etc.)	1.45	1.50	1.50	1.00
4 Local Transportation Cost	0.14	0.16	0.15	0.16
5 Miscellaneous	0.50	0.50	0.50	0.50
Sub Total	**3.62**	**3.63**	**3.62**	**3.15**
C. Retailer's Margins	3.47	5.30	5.96	5.04
D. Selling Price (A+B+C)	**41.79**	**41.15**	**42.70**	**41.82**

iv (b) Marketing costs and margins for private players under modern marketing channels
The essence of table 6 reveals that total marketing cost is highest (Rs. 6.67) for Mother Dairy followed by Fresh and Healthy (Rs. 6.28) and Adani (Rs.5.26). Table elicits that Mother Dairy has secured highest margins (Rs.5.66) followed by Adani (Rs. 4.69) and Fresh and Healthy (Rs. 3.47). It was experienced that selling price of Adani is highest qualifying to Rs. 63.40 followed by Mother Dairy (Rs. 62.33) and Fresh and Healthy (Rs. 61.40).

Table 6: Marketing Cost and Margin (in Rs.) under Modern Marketing Channels

Particulars	Private Players		
	Adani's Supply Chain	**Mother Dairy's Supply Chain**	**Fresh and Healthy's Supply Chain**
A. Price Paid to Growers	**53.45**	**50**	**51.6**
B. Marketing Cost incurred by P. Players			
1.Transportation Cost	1.25	2.50	2.50
2. Unloading	0.18	0.13	0.15
3. Cleaning, Grading, Sorting	0.40	0.25	0.30
4. Storage	1.30	1.25	1.50
5. Packing Material and Packaging	1.52	1.95	1.25
6. Market Fee @ 1 %	0.59	0.54	0.57
7. Spoilage	0.02	0.05	0.01

8. Miscellaneous	-	-	-
Sub Total	**5.26**	**6.67**	**6.28**
C. Company's Margins	4.69	5.66	3.47
D. Selling Price (A+B+C)	**63.40**	**62.33 (CP)***	**61.40**
Retailers total cost	**2.50**		**2.00**
Retailers Margin	**5.00**		**4.00**
Selling price of retailers	**70. 90 (CP)***		**67.40 (CP)***

CP- Consumer price

It was found that supply chain of Mother Dairy is shortest than both companies. Mother Dairy procures apple directly from growers and sells directly to ultimate consumers through its retail outlets (SAFAL) in Delhi region. On the other hand Adani and Fresh and Healthy sell apple to big retailers of metro cities of country instead of selling directly to consumers. It is evident from table 6 that retailer has sold apple of Adani and Fresh and Healthy at Rs. 70.9 and Rs. 67.4 respectively. Therefore retailers has fetched higher price from Adani's apple than Fresh and Healthy. It was analysed that retailers have incurred Rs 2.5 and Rs. 2 on marketing and secured net margins to Rs 5 and Rs 4 under the supply chain of Adani and Fresh and Healthy respectively.

V (a) Marketing efficiency of traditional marketing channels

It is evident from the table 7 that marketing efficiency of Channel A and Channel B is 2.11 and 2.51 respectively by using Shepherd's formula in Group 1. Table further shows that marketing efficiency is 2.19 and 2.41 for Channel A and channel B respectively by Shepherd's formula in Group 2. Marketing efficiency was also calculated by employing Acharya's formula and it was found that marketing efficiency of channel A and channel B is 0.79 and 0.87 respectively in Group 1. Table further shows that marketing efficiency of Channel A and Channel B is 0.85 and 0.97 respectively in Group 2. Thus Channel B has been proved to the most efficient marketing channel by Shepherd's formula and Acharya's formula in Group1 and in Group 2.

Table 7: Marketing Efficiency of Traditional Marketing Channels

Particulars	Group 1		Group 2	
	Channel A	**Channel B**	**Channel A**	**Channel B**
A Total Marketing Cost	13.41	11.71	13.22	12.10
B. Consumer Price	41.79	41.15	42.27	41.28
C. Net Margin	9.82	10.30	9.89	9.03
D.Net Price Received by Grower	18.56	19.18	19.79	20.69
E. Index of Marketing Efficiency				
1. Shepherd's Formula (B/A-1)	**2.11**	**2.51**	**2.19**	**2.41**
2. Acharya's Formula (D/A+C)	**0.79**	**0.87**	**0.85**	**0.97**

V (b) Marketing Efficiency of Modern marketing Channels

It is evident from the table 8 that marketing efficiency of Apni Mandi (channel E) is 3.94 by using Shepherd's formula and Acharya's formula.

Table 8: Marketing Efficiency of Modern Marketing Channels

Particulars	Channel E	Channel F		
	Apni Mandi	Adani's Supply Chain	Mother Dairy's Supply Chain	Fresh and Healthy's Supply Chain
A. Total Marketing Cost	4.74	10.71	10.84	12.88
B. Consumer Price	23.44	70.90	62.33	67.40
C. Net Margin	-	9.69	5.66	7.47
D. Net Price Received by Growers in Rs.	18.70	53.45	50.00	51.60
E. Index of Marketing Efficiency				
1. Shepherd's Formula (B/A-1)	3.94	5.61	4.75	4.23
2. Acharya's Formula (D/A+C)	3.94	2.62	3.03	2.53

Table 8 further reveals marketing efficiency of channel F. It was found that marketing efficiency of Adani (5.61) is highest followed by Mother Dairy (4.75) and Fresh and Healthy (4.23) by employing Shepherd's formula. Thus Shepherd's formula suggests that supply chain of Adani is the most efficient under channel F. On the other hand marketing efficiency of Mother Dairy (3.03) is highest followed by Adani (2.62) and Fresh and Healthy (2.53) by using Acharya's formula. Thus Acharya's formula has suggested that supply chain of Mother Dairy is the most efficient under channel F.

CONCLUSION

Discrimination in the returns/ margin and cost of channels is clearly revealing that modern marketing channels are good alternatives for apple growers/ entrepreneurs in Himachal Pradesh. It was experienced during the survey that with modern marketing channels, respondents are quite free to sell their produce and able to take decision before making the sale. However it was also seen that few of them are engaged with modern supply chain. As compare to traditional supply chain, modern supply chains are much shorter and growers are able to fetch better price. Analysis of channels reveals that return is highest for Delhi market via and B and respondents faced highest marketing cost for Delhi market via channel A in Group1. However respondents' return was highest for Chandigarh via channel B and Adani under traditional channels and modern channels respectively. Wholesalers' margin and total marketing was highest under channel A while supplying apple of Group1. However wholesalers' margin and total marketing was highest under channel B while supplying apple of Group2. Apple of Group2 is sold by retailers at highest price and retailers are entertaining handsome margin via channel A. supply chain of Mother Dairy is shorter than Adani and Fresh and Healthy, due to this reason apple is sold at lower price in supply chain of Mother Dairy. However company entertains the highest margin than both the companies. Through Shepherd's Formula, marketing efficiency of channel B was registered for the highest in Group1 while Acharya's Formula told that marketing efficiency of channel B was highest in Group2. It was also found that marketing efficiency of Adani Supply chain and Apni Mandi under modern channels was highest by adopting Shepherd's Formula and Acharya's Formula.

REFERENCES

- **Singh Surendra P., Sikka B.K. and Singh Ashutosh. (**2009). Supply Chain Management and Indian Fresh Produce Supply Chain: Opportunities and Challenges- A paper prepared for presentation in International food & agribusiness management association, 19th annual world symposium.
- **Rauf Abdul, Saraf S.A. and Wani S.A.** (2011). Economics of Production and Marketing of Apple in Himachal Pradesh and Jammu and Kashmir. Indian Journal of Agricultural Marketing, 25 (1) pp. 97-119.
- **Pandey Mukesh, Sikka B.K. and Sunil Panthari** (2011). ICT System for Increasing Efficiency of Apple-Value in ICT for Agriculture & Rural Development in National Conference on Managing Agri-Food Supply Chain, Arunachal Pradesh, 9-11 April.
- Economic Survey 2011. HP. Directorate of Economics and Statistics: pp. 2-25.
- Economic Survey 2010. HP. Directorate of Economics and Statistics: pp. 2-25.
- http://.nhb.gov.in. National Horticulture Database. 4.12.2012.
- http://nhb.gov.in/model-project-reports/Horticulture%20Crops%5Capple%5Capple1.htm. 28.02.2013.
- www.wikipedia.org/wiki/indian_agriculture. 26.02.2013.