

## Marketing channels, costs and returns of apple in northern states of India: A comparative study of Himachal Pradesh and Uttarakhand

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### Abstract

The study has been conducted in Himachal Pradesh and Uttarakhand in order to estimate the cost and returns of farmers in marketing of apples. The study is based on primary data which was collected from apple growers by using multistage random sampling method. The study concludes that cost of packaging material, grading and packaging charges, loading/unloading cost, and mule charges were almost same in both states except the cost of transportation, which was extra in Uttarakhand than in Himachal Pradesh. Total marketing cost of apple was Rs. 890 and Rs.777 in Uttarakhand and Himachal Pradesh respectively. The gross returns from marketing of apple were Rs.1600 and Rs.1400 in Uttarakhand and Himachal Pradesh correspondingly. Hence, gross returns were more in Uttarakhand but due to the high marketing cost in Uttarakhand, the net returns were more in Himachal Pradesh as compared to Uttarakhand.

**Keywords:** apple, marketing cost, Uttarakhand, Himachal Pradesh

### Introduction

Horticulture can be defined as the “science of growing and management of fruits, vegetables, spices, plantation crops, tubers, ornamental, medicinal & aromatic crops and floriculture that includes not only their production but also processing, value addition and their marketing” (Kumar 2013). It is one of the growing sectors which contributes around 24.5 percent to the agricultural GDP of India (Veerabhadraswamy 2017) [1]. The demand for horticultural crops is high in the international market because of their high nutritional value which can generate sustainable livelihoods (Das and Borbora 2007; Islam and Shrivastava 2017) [2, 3].

One of the high-value crops in India is Apple having health benefits like being rich in nutrients, a good source of photochemical and natural antioxidants (Lyu *et al.* 2020) [7]. Its demand is quite high in the world because it helps to cure asthma, diabetes type II, cancer, heart disease (Boyer and Liu 2004) [1]. India stands tenth in terms of apple production in the world with the share of 2.2 percent of the world’s apple production (K. Kesavalu and A. Abdul Raheem 2019) [4]. In India, it is grown in the hilly parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, and Arunachal Pradesh (Minhas and Girish 2014; Shaheen, Farhet 2000; Sheikh and Tripathi 2013) [8, 9, 10]. Marketing of Apple involves activities like grading, packaging, and transportation, etc for transferring produce from the farm sector to the non-farm sector (Wani 2018) [12]. Apple is a seasonal fruit and its extreme perishable nature demands special care during marketing. Apples can get easily spoiled if they are not provided with proper care at the right time which has a tremendous impact on the returns (Lahkar and Baishya 2020) [6]. Apple production is labor intensive work requiring lots of time and financial investment too; therefore any post-harvesting losses due to inefficiency of the market can generate heavy losses to the producers or market intermediaries. Trading of apples from farm to non-farm sector engages many intermediaries which bear marketing costs and returns at a different level and affect the prices of the produce.

### Objectives of the study

1. To identify the marketing channel preferred by the farmers of Himachal Pradesh and Uttarakhand
2. To estimate cost and returns of farmers in marketing of apples in Himachal Pradesh and Uttarakhand

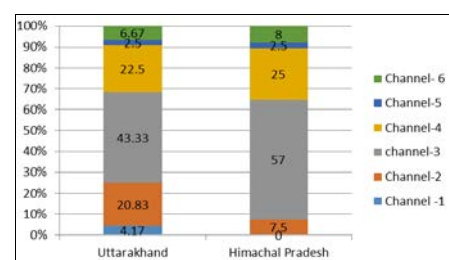
### Methodology

In the study, both qualitative and quantitative data were used. The data was collected from apple growers by multistage random sampling method. In the first stage, district Shimla from Himachal Pradesh and Uttarkashi district from Uttarakhand were selected based on apple production from Himachal Pradesh and Uttarakhand respectively. In the second stage, five blocks from Himachal Pradesh and three from Uttarakhand were selected after consulting the Horticulture officer of the concerned districts. In the third stage, 4 villages from each block were selected randomly and lastly, ten apple producing households from each village were selected at random. Hence, the total sample size of the study was 320 households.

To calculate the marketing cost and returns of the apple growers, annual cost and returns have been estimated in the study and then the net return-market cost ratio was used to evaluate the market efficiency of the apple growers.

### Results and Discussion

#### 1. Marketing channels used by apple growers



Source- Computed from primary survey

Fig 1: Distribution of marketing channel in Uttarakhand and Himachal Pradesh

Channel-I: Producer - Consumer

Channel-II: Producer-Pre-harvest contractor/ Contractor-Whole seller/Commission agent-Retailer-Consumer

Channel-III: Producer - Commission agent - Whole seller-Retailer-Consumer

Channel-IV: Producer- Farmers acted as agent- Whole seller-Retailer-Consumer

Channel-V: Producer- Retailer- Consumer

Channel-VI: Producer-Private company- Retailer - Consumer

Figure 1 illustrate that in Uttarakhand, most of the sampled farmers i.e. 43.33 percent, 22.5 percent, and 20.83 percent were using Channel III, IV, and II respectively while least (2.5) percent of farmers were selling through channel V. A few of them which are 4.17 percent, 6.67 percent were using Channel I and VI for selling their apple. In Himachal Pradesh, the maximum percent of sampled farmers which is 57 percent and 25 percent were selling their apples through channel III and channel IV respectively and a small percentage of farmers i.e. 8 percent, 7.5 percent and 2.5 were using channel VI, II and V respectively. None of the sampled farmers were supplying through channel I.

It is observed that in both the states farmers are supplying largely through channels III and IV. Besides channels III and IV, sampled farmers of Uttarakhand were using channel II for apple trading whereas, in Himachal Pradesh they were using channels VI and II.

**2. Marketing cost borne by the growers**

In marketing, apple growers performed few extra activities for which they have to bear some additional cost for packaging material, transportation which includes loading and unloading cost, grading and packaging. In the case of pre-contractor and contractor, these additional costs are not borne by them and not by the growers. The cost structure is estimated here is for per 100 kg (quintal) of apple which is presented in table 1.

**Table 1:** Cost structure of marketing borne by growers in Uttarakhand and Himachal Pradesh

Items	Average Marketing cost per quintal (in Rupees)	
	Uttarakhand	Himachal Pradesh
Packaging Material	357.44	340.23
Grading + Packaging	99.61	97.60
Transportation	240	140
Loading	15	12
Transportation by mules	178.23	169.78
Total Marketing cost excluding mules charges	712	607.43
Total Marketing cost including mules charges	890.28	777.21

**Source-** Computed from primary survey of sampled apple growers in both states

Table 1 estimates the marketing cost borne by the apple growers. In Uttarakhand cost of packaging material was found to be Rupees 357 while the cost of grading and packaging was Rupees 100 and the cost of transportation are Rupees 240. Some farmers have to bear extra charges for transportation by mules [in local language *khacchar*] as their apple orchards are located far away from main concrete roads. The transportation by mules was found to cost Rupees 712 in Uttarakhand. In Himachal Pradesh, the cost of packaging material and transportation were Rupees

340 and 140 respectively. The cost of grading and packaging was Rupees 98 while transportation by mules and loading charged were Rupees 170 and Rupees 12 respectively.

It was observed in table 1 that the marketing cost of apple in Uttarakhand was more than in Himachal Pradesh. In both states, marketing costs constitute major share of packaging material followed by transportation by mules due to the difficult hilly terrains.

**3. Returns received by farmers from marketing of apple**

Gross returns are anticipated by calculating the difference in the price of apples before and after marketing. The net return-cost ratio has been estimated in order to check the net benefit of marketing done by farmers and the higher value of the ratio depicts the higher level of efficiency. The returns were calculated for per 100 kg (quintal) of apples which are presented in table 2.

**Table 2:** Returns (per quintal) from apple marketing by framers in Uttarakhand and Himachal Pradesh

Items	Returns from marketing	
	Uttarakhand	Himachal Pradesh
Gross Returns from marketing[Rupees]	1600	1400
Net return- market cost ratio (without transportation charges of mules)	2.25	2.37
Net return- market cost ratio (with additional transportation charges of mules)	1.80	2.11

**Source-** Computed from primary survey

The returns associated with marketing done by farmers are presented in Table 2. The gross return from marketing was found to be Rupees 1600 in Uttarakhand while in Himachal Pradesh it was found to be Rupees 1400 which is less than the market return in Uttarakhand. The marketing (excluding mules charges) done by the farmers is efficient in both the states as the ratio is 2.24 and 2.37 in Uttarakhand and Himachal Pradesh respectively. The marketing including mule charges borne by farmers is also efficient in both the states as the ratio is 1.80 and 2.11 in Uttarakhand and Himachal Pradesh respectively. Based on the above analysis, it is clear that marketing is slightly more efficient in Himachal Pradesh as compared to Uttarakhand.

**Conclusion**

It is concluded that the most preferred channel by apple growers in both the states was Channel-III (Producer - Commission agent - Whole seller-Retailer-Consumer). The cost of packaging material, grading and packaging charges, loading/unloading cost, and mule charges were almost same in both states except the cost of transportation, which was extra in Uttarakhand than in Himachal Pradesh. Though the gross returns from marketing were higher in Uttarakhand but the net return-market cost ratio (including and excluding mule charges) was higher in Himachal Pradesh than Uttarakhand. The higher net return-market ratio was due to the smaller total marketing cost in Himachal Pradesh than Uttarakhand. Hence, marketing of apple has proven profitable for growers and they should not choose selling apples to pre-harvesting contractor or contractor. For a more consistent living of apple growers it is preferable for them in

both the states to choose channel III for marketing. The cost differences in Uttarakhand can be sorted out to some extent by construction of motorable roads.

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