Agricultural marketing system in Uttarakhand: Structure and functioning

Deepika Joshi[1], Md. Ejaz Anwer[1], Rohit Kumar[1], Simmi Rana[*], Ranjit K Paul[2], Anil Kumar[3] and Raka Saxena[1]

[1]*ICAR-National Institute of Agricultural Economics and Policy Research, New Delhi, India*
[2]*ICAR-Indian Agricultural Statistics Research Institute, New Delhi, India*
[3]*GB Pant University of Agriculture and Technology, Pantnagar, New Delhi, India*

ABSTRACT

Uttarakhand state has 26 principal market yards, 31 sub-market yards and 27 weekly markets for marketing of agricultural produce which are regulated effectively in 11 districts of the state. However, majority of the districts of this state is located in hilly region, but the principal markets are largely located in the plain regions. Although, the entire hill region is covered under the provision of Agricultural Produce Market Act, 1964; despite this, the major hill markets are still non-functioning. However, Haldwani market which is the best market in terms of marketing welfare has the highest number of functionaries and covers about 20% of total functionaries, As far as the farmer's perception about the prevailing marketing system and practices is concerned, majority of the farmers from Nainital, Udham Singh Nagar and Almora district were satisfied with the boarding/lodging, weighment, grading, cleanliness and, information sharing, who largely sell their produce to Haldwani market or the grain *Mandies* in Rudrapur, Jaspur, Sitarganj etc. But these farmers have also expressed their dissatisfaction on the account of cold storage facilities and the exploitative practices of traders and management of the markets especially during the rainy season in the agricultural markets of Uttarakhand. It may be inferred that the hilly regions of the state require special attention on the marketing interventions and infrastructure due to difficult terrains and limited bargaining and handling capacity of the growers resulting from lower size of holding and lack of resources.

Keywords: Marketing systems, regulated markets, infrastructure, transportation, cold storage

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Marketing system plays a crucial role in agricultural sector as efficient functioning of agricultural markets is supposed to add to the welfare of producers as well as consumers. An efficient agricultural marketing system helps in the optimization of resource use, output management, increase in farm incomes, widening of markets, growth of agro-based industry, addition to national income through value addition,

Address for correspondence

ICAR-National Institute of Agricultural Economics and Policy Research, New Delhi, India

E-mail: rakasaxena@gmail.com

and employment creation (Garg, 2010). The issues and concerns in marketing mainly relate to the performance (efficiency) of the marketing system, which depends on the structure and conduct of the market (Acharya, 2006). Agricultural marketing system in the country presently is marked by fragmented supply chain, dominated by multiple market players which results into high wastages thus, adversely affecting efficient marketing (GOI, 2013). There are substantial wastage, deterioration in quality, and frequent mis-match between demand and supply spatially and temporally which continue to affect the economic viability of agricultural sector (Jairath, 2008). It may be mentioned here that the total preventable (post-harvest) losses of food grains in India amount to 12 to 16 million tonnes of food grains each year, an amount that the World Bank stipulates could feed one-third of India's poor (Singh, 2010). Regulatory barriers have constrained investments in development of storage and processing which hampered the development of effective market institutions, and lowered the capacity of agricultural producers to be internationally competitive (GOI, 2011).

This requirement becomes much more intense in difficult terrains and remote areas. Larger part of Uttarakhand is characterized by a difficult terrain, undulating topography, remote and inaccessible villages, sparse population, tiny land holdings, agriculture based economy and weak infrastructure; the topographical, infrastructural and environmental constraints do not allow proper utilization of resources available in the inner parts of this fragile region (Tuteja, 2013). Development of the hills is primarily linked to the development of agriculture and its allied activities as the mountainous region of the country has tremendous potential for cultivation of many high value added and rare commodities. Uttarakhand is such state with dominance of agriculture and dependence of about 70per cent of the population on agriculture. The average land holding is around 0.68 ha. The consumption of large marketable surplus available with farmers is outside the state and it further adds to the losses due to lack of proper infrastructure in form of cool chains, pack houses, mechanized grading and packing machinery, efficient transportation/connectivity, markets, etc. (Tuteja 2013). Uttarakhand *Krishi Utpadan Mandi*

Parisad (UKUMP), is the nodal agency for agricultural marketing in Uttarakhand which has created a network of markets for marketing of agricultural produce in the state. Since the state has tremendous potential for cultivation of horticultural crops, special emphasis has been placed on marketing of horticulture produce. Marketing of agricultural produce in Uttarakhand is still in a nascent stage as most of the districts in hills still lack a functional regulated marketing system that adds to the backwardness of a potentially lucrative state in terms of horticulture and grain production. All these facts accentuate the need for detailed study on the state of marketing system and practices existing across various markets of the state. The aggregate level evidences have also been validated with the field level realities at farmers' fields.

Data and Methods

The study is based on both primary and secondary data. The information regarding the marketing system was obtained from the market profiles of the regulated markets of Uttarakhand available at AGMARKNET portal. The information was also validated with the primary information obtained from discussion with 65 farmers who visited Haldwani and Rudrapur markets for trading of agricultural commodities. Simple descriptive analysis has been applied to study the marketing system and practices across the selected markets. The markets have been selected depending upon the data and information availability regarding various marketing practices.

Agricultural Marketing Regulation in Uttarakhand

The agricultural marketing in the state is governed under the Agricultural Produce Market Committee (APMC) Act. The Government of India modified the earlier APMC Act and circulated the Model APMC Act to the states for modification in Act as per the regional and local requirements. The state government has amended the APMC Act, in line with Model Act 2003. The state government started the process of amendment as early as 2005, however, the Act was finally amended in the year 2011. The amended Act facilitates setting up

of private markets, farmer consumer markets, contract farming, e-trading etc., (Gov of Uttarakhand). There are 26 principal market yards, 31 sub market yards and 27 weekly markets for marketing of agricultural produce (Box 1). It is surprising to note that the marketing regulation is in effect in only 11 districts of the state out of total 13 districts. Not only the state lacks in number of regulated markets but also it lacks proper facilities therein (Bhupal, 2013). Further, the principal market yards are largely located in mainly five districts. Adding to the woes, the markets are located in the plain regions of these districts. The state is declared as a hill

Box 1: Principal Markets, Sub-Markets and their important crops

Sl. No.	District	Principal markets	Submarkets	Important crops/products
1		1-Haldwani	Mukhani, Lamachod, Lalkuan, Bhowali, Kaladungi	Potato, Tomato, Cabbage, Pear, Mango, Plum, Apricot, Peach, Onion, Apple
	Nainital	2-Ramnagar	Shankarpur Peerumadara	Wood, Rice, Wheat, Paddy, Mango, Potato, Soybean, Onion, Litchi, Gram
2		3-Rudrapur	Bhurarani, Bhamraula, Bagwala, Bhainsiya	Wood, Wheat, Paddy, Green Pea, Bottle gourd, Mango, Cabbage, Soybean, Radish
		4-Kashipur	—	Paddy, Rice, Barley, Wheat, Greenpea, Banana, Wood, Tomato
	Udham Singh Nagar	5-Jaspur	—	Paddy, Rice, Wheat, Wood, Bottle, Gourd, Green Pea, Potato, Wood, Radish, Cauliflower
		6-Sitarganj	Bhudiya, Nanakmatta	Paddy, wheat
		7-Khatima	—	
		8-Kichha		Wheat, Mango, Banana, Paddy
		9-Gadarpur	Chandayan	Paddy, Rice, Wheat, Pea, Potato, Soyabean, Onion
		10-Bazpur	Sultanpur Patti, Kilakheda	Paddy, Rice, Barley, Mustard, Potato, Pea, Wheat
3	Champawat	11-Tanakpur	Banbasa, Champawat, Lohaghat	Potato, Wheat, Potato, Wood, Pear, Mango, Lisa, Ginger
4		12-Dehradun	Doiwala, Mussorrie	Potato, Mango, Pea, Apple, Ginger, Tomato, Wheat, Litchi, Cabbage, French bean
		13-Vikasnagar	—	Paddy, Maize, Wheat, Potato, Green pea, Ginger, Celocia, Wood, Mango
	Dehradun	14-Chakrata	Sahiya	Pumpkin, Potato, Ginger, Green chillies, Field pea, Celocia
		15-Rishikesh	—	Wood, Paddy, Potato, Tomato, Rice, Cauliflower, Banana, Resin, Onion, Wheat
5		16-Manglore	Jhabreda, Narsan	Wheat, Mango
		17-Lakshar	Landora, Rayasi, Govardhanpur, Bheekampur	Oat, Rice, Wheat, Paddy, Onion, Wood, Potato, Barley
	Haridwar	18-Haridwar Union	Bahadarabad	
		19-Roorkee	Bhagwanpur	Banana, Apple, Wood, Tomato, Chilly, Gram, Potato, Mosambi, Wheat
		20-Bhagwanpur		
6	Paudi	21-Kotdwar	Dugadda	Wheat, Gram, Grape, Rice, Mango, Gur, Potato, Banana, Apple, Arhar
7	Chamoli	22-Karanprayag		

(Cont…)

Sl. No.	District	Principal markets	Submarkets	Important crops/products
8	Uttarkashi	23-Uttarkashi	Not yet functional	
9	Tehri Garhwal	24Tehri Garhwal	Not yet functional	
10	Almora	25-Almora	Not yet functional	
11	Pithoragarh	26-Pithoragarh	Not yet functional	

Source: Uttarakhand Agricultural Produce Marketing Board (UKAPMB)

state; however, the markets are not functioning in the hill regions of the state. Though, the entire hill region is covered under the provision of Agricultural Produce Market Act,1964, the provisions of regulation are yet to be effectively implemented in five districts of the region namely Almora, Chamoli, Pithoragarh, Tehri and Uttarkashi as these markets are still non-functioning. In Uttarkashi, though there is regulated market established in the district headquarters but it was not functional, therefore, most of the fruit and vegetables are sold in Dehradun and Kanpur; probably absence of working of regulated market is a cause and effect that there are no storage and processing facilities in Uttarkashi (Bhupal 2013).

Existence of market functionaries and quantity handled across markets

Market participants in the form of market functionaries play an extremely important role in facilitating the trade of agricultural produce. Different categories of market functionaries are directly involved in trade, these may further be classified into various categories as: some take the title of the produce (i.e., wholesaler), some charge only commission (i.e., commission agent), some take title of the produce as well as charge commission (i.e., wholesaler cum commission agent), and others who make the smaller transactions and sell the produce directly to the consumers (i.e., retailer). Such traders are provided licences by the respective market committees. Beside these functionaries like transporters, *Palledars* perform the function of loading/unloading and carrying the produce to the desired destinations. Table 1 presents the number of functionaries available in the agricultural markets of Uttarakhand. The markets in the state are dominated by the existence of wholesaler-cum-commission agents, the highest number of such functionaries was observed in Haldwani and lowest in Tanakpur.

Haldwani market has the highest number of functionaries and covers about 20% of total functionaries as the market has highest number of wholesaler-cum-commission agents. But, no commission agents and transporters were found in Haldwani market. Further, we could not get the information on number of functionaries in Dehradun market. However, Haridwar market is relatively better off with 15% of total functionaries and stands at the second position in the state, followed by Rudrapur.

Simply, the number of market functionaries in the markets does not provide a clear idea about their functioning. It is important that how much quantity is handled by each trader in a year. Table 2 provides the arrival distribution of important commodities in the major markets along with the quantity handled by the traders. For this, the total annual arrivals of potato, tomato, greenpea and paddy for the triennium ending 2012-13 were divided by the number of traders in different markets. This provides an approximate idea about what is handled by the traders as it has been assumed that all traders in the market handle all commodities arriving in the market. If there are some specialized traders for a commodity, they will receive higher quantity of the particular commodity dealt but will not receive the other commodities; so, the average situation should not deviate much.

The quantity handled depends on the arrival pattern in the markets along with the number of traders existing in the markets. A significant deviation is observed across the markets in terms of quantity handled. It can be observed that arrival of green-pea, tomato and paddy are largely concentrated during October to March, while potato is received throughout as markets are fed from plain areas as well as cold storages. On an average, a trader in Haldwani handles as low as 8 quintals of potato in April to as high as 32 quintals in January. The quantity of tomato dealt is much higher in Haldwani

Table 1: Number of Functionaries in Uttarakhand markets

Markets	Wholesaler-cum-commission agents	Wholesaler	Commission agents	Retailer	Transporters	Mill
Gadarpur	120	12	—	160	1	-
Haldwani	773	96	—	236	—	28
Haridwar	479	52	14	248	8	38
Jaspur	67	110	1	38	—	35
Kashipur	233	135	29	—	3	117
Kichha	120	60	41	87	1	49
Ramnagar	140	64	6	86	2	34
Rishikesh	175	35	—	250	10	4
Rudrapur	392	10	4	111	2	72
Sitarganj	138	22	—	156	1	23
Tanakpur	48	11	—	122	4	—
Vikasnagar	137	46	—	240	—	30

Source: AGMARKNET

as compared to potato. Sitarganj market receives much higher quantity of paddy and maximum 2976 quintal of paddy is handled by a trader in November, which means approximately 100 quintals per day. As observed, it does not appear that the traders are handling unmanageable quantities of arrival, however, the arrivals seem to be cluttering during the winter season which may create some constraints in handling commodities.

Prevalence of marketing charges

Agricultural Produce Market Committees are authorized to collect market fee from the buyers/traders on the sale of notified agricultural produce in lieu of the services provided by APMCs, which ranges from 0.50% to 2.0% of the sale value of the produce. The commission is charged on the sales by the commission agents, which ranges from 1% to 2.5% in food grains and 4% to 8% in case of fruit and vegetables. In some cases, an excessive commission is charged by the commission agents touching upto15% (GOI, 2013). As per the market records, marketing charges in different agricultural markets are found to be quite close to each other. Commission on vegetables, fruits and food grains was found to be 3 and 1.5%, respectively in all the markets except in Jaspur and Vikasnagar markets

where commission on vegetables and fruits is between 1 to 1.5%, which is considerably lower than other markets (Table 3). Usually, market fee of 2% is charged in the markets in almost all the markets, the situation was found different in Haldwani, Kashipur and Ramnagar markets. As discussed earlier, Haldwani receives much higher arrival of important horticultural commodities of the state. Even, the difference of 0.5 percent points in this market will result in earning of significantly higher marker revenue. This earning may be used for creating better infrastructure in the market to further enhance the market capacity and marketing efficiency. No market fee was reported in Jaspur market. Vikascess was reported 0.5% in all the markets. Vikas cess should also be used effectively to improve the infrastructure. The main reasons for poor market infrastructure has been attributed to the fact that market committees did not plough back the market fee collected into developing infrastructure and these funds in several cases were siphoned-off to the government account (GOI, 2001).

Marketing Practices

The information regarding marketing practices in terms of the major trading methods, weighment practices and the payment mechanisms was obtained from the profiles

Table 2: Arrival distribution and quantity handled by traders

Market	Attribute	Commodity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Haldwani	MWAD	Greenpea	10	9	43	11	2	0	0	0	0	2	15	7
		Potato	13	10	11	3	6	9	12	8	7	7	6	9
		Tomato	21	22	15	0	1	0	1	0	0	1	7	31
	QHM	Greenpea	1	1	6	2	0	0	0	0	0	0	2	1
		Potato	32	25	27	8	14	21	28	20	16	17	15	22
		Tomato	128	130	87	3	6	3	3	2	2	5	42	187
Kashipur	MWAD	Paddy	9	6	8	3	1	2	2	1	0	13	26	29
	QHM	Paddy	335	202	287	107	23	68	80	26	8	451	932	1013
Rishikesh	MWAD	Potato	10	10	11	9	9	9	6	6	5	9	7	9
		Tomato	5	4	6	9	12	11	9	7	7	11	8	10
	QHM	Potato	59	56	62	52	50	52	37	37	31	51	41	55
		Tomato	5	5	7	10	13	13	10	8	8	12	9	11
Rudrapur	MWAD	Greenpea	43	44	5	1	0	0	0	0	0	0	0	8
	QHM	Greenpea	434	447	49	6	0	0	0	0	0	0	0	80
Sitarganj	MWAD	Greenpea	54	26	1	0	0	0	0	0	0	0	0	20
		Paddy	12	6	8	1	0	0	0	0	0	15	32	24
	QHM	Greenpea	139	66	1	0	0	0	0	0	0	0	0	51
		Paddy	1161	577	727	122	19	33	12	8	6	1402	2976	2281

Source: Computed by the authors. Where, MWAD indicates the Month-wise arrival distribution in percentage and QHM is the quantity handled per month (in tonnes) by the traders in the market

Table 3: Marketing Charges across the selected markets (in per cent)

Markets	Commission on			Market Fee	VikasCess	Weighment
	Vegetables	**Fruits**	**Foodgrains**			
Dehradun	3	3	—	2	—	—
Haldwani	3	3	1.5	2.5	—	2
Haridwar	3	3	1.5	2	0.5	0.5
Jaspur	1	1	1.5	—	—	2
Kashipur	3	3	1.5	2.5	—	2
Kichha	3	3	1.5	2	0.5	0.5
Ramnagar	3	3	1.5	1.5	—	0.5
Rishikesh	3	3	1.5	2	0.5	0.5
Rudrapur	3	3	1.5	2	0.5	—
Sitarganj	3	3	—	2	—	—
Tanakpur	3	3	3	2	0.5	0.5
Vikasnagar	1.5	1.5	2.5	2	0.5	0.5
Average	3	3	2	2	1	1

Source: AGMARKNET (market profile of respective markets of Uttarakhand)

of the markets available at AGMARKNET website. The information was analysed and is being discussed here. However, the micro level evidences may vary from this aggregate level information.

Trading system: Common trading systems found in Uttarakhand markets were auction method and mutual understanding. Most of the trading in the markets was through auction (67%), while 17% each through mutual understanding and combination of auction &mutual understanding both.

Weighment: Weighment in Uttarakhand markets is basically through electronic weighbridges and traditional/metric weighment. It has been reported that weighing through electronic weighbridges forms the larger part of market as 73% of markets acquire this facility whereas just 27% markets depend on traditional or metric weighment in the state. However, the infrastructure profile reveals that only Haldwani market has five electronic weighbridges, out of which four are non-functional.

Payment mechanisms: Three types of payment mechanisms have been reported in the selected markets. Cash and cheque payment is usually the most common method reported in 58% markets followed by cash payment in 25% cases whereas cash, cheque and draft payment is reported in 17% cases. However, the studies have reported that there exists informal finance mechanism between the traders and farmers where traders provide advance payments to farmers for meeting their crop cultivation requirements and the advances are adjusted in sale proceeds.

Perception of the farmers regarding the marketing system

The perception of one of the most important market participant i.e., farmers regarding the prevailing marketing system and practices is essential to understand and is important for the corrective actions and remedies to rectify the system. The details of farmers' perception regarding the marketing system are presented in Table 4. Most of the farmers were satisfied with the boarding/lodging, weighment, grading, cleanliness, information sharing etc. The situation seems better as the survey results pertain to the response obtained from the farmers from Nainital, Udham Singh Nagar and Almora district who largely sell their produce to Haldwani market or the grain *Mandies* in Rudrapur, Jaspur, Sitarganj etc., which are relatively better markets either in terms of trade or storage infrastructure. Market information sharing is essential so that the farmers can avail due-benefits due to price premiums. Farmers expressed dissatisfaction on the account of the storage facilities in the markets, which is far from satisfactory in most of the agricultural markets. Further, most of the farmers were dissatisfied with the exploitative practices of traders and management of the markets especially during rainy season. Specialized storage infrastructure is the need of hour in all the agricultural markets to correct the market inefficiencies and increasing the farmers' incomes.

Market Infrastructure availability at farmers' fields

The infrastructure availability at farmers' fields is presented in Table 5. One of the important basic infrastructural facilities for quick movement of agricultural produce from producer to consumer is good road network; roads in movement of produce are just like arteries in human body for blood circulation (Jairath, 2004). It is estimated that, across the world, 15% of crop produce is lost between farm gate and consumer because of poor roads and inappropriate storage facilities (World Bank, 1997). It emerges that most of the farmers had proper connectivity in terms of pukka road; availability of pukka roads was reported by 89% farmers which is a good indicator as most of the agricultural produce being perishable in nature require better road facilities to reach the markets. This is because most of the sample farmers belonged to Udham Singh Nagar and Nainital districts which have better infrastructural facilities as compared to other areas. The situation is particularly assumed to be awful in the remote and high hill areas.

Besides roads, effective transportation is another requirement in agricultural markets. According to Majumdar (2002), the transport infrastructure significantly affects the agricultural output and development in India. A well-developed and efficient system of transportation might help in better linking of

Table 4: Details of perception of farmers regarding the marketing system in Uttarakhand

Item	Highly satisfied	Satisfied	Highly dissatisfied	Undecided
Boarding/Lodging	10.3	82.8	3.4	3.4
Weighing system	1.8	82.1	12.5	3.6
Cleaning and grading mechanism	5.7	79.2	13.2	1.9
Cleanliness in the market	7.9	73.7	15.8	2.6
Market information sharing among the farmers	4.5	72.7	0.0	22.7
Auction platform	1.8	69.1	27.3	1.8
Payment mechanism	14.0	64.0	18.0	4.0
Transparency regarding prices	0.0	58.1	32.6	9.3
Behaviour of market officials	0.0	53.7	34.1	12.2
Marketing fee	0.0	51.6	29.0	19.4
Marketing management during rainy season	2.6	43.6	46.2	7.7
Exploitative practices by traders	0.0	41.9	48.4	9.7
Availability of storage and godowns	0.0	40.0	56.0	4.0
Cold storage/ware houses	5.6	22.2	44.4	27.8

Source: Primary Survey

markets and further expansion of markets by reducing the cost of transaction and the time involved in transportation. The public transport facility is reported to be used by 83% farmers, remaining use owned vehicles (17%). As discussed earlier, Uttarakhand markets are usually located in the plain regions of the state, therefore, roads and transportation facility is relatively better as compared to hilly terrains.

Cold storage facility exists only with 9% farmers in the state. High wastages occur due to multi-layered marketing channels, lack of marketing infrastructure, fragmented cold chains, absence of sufficient cold storage and associated logistics as well as organized distribution system (GOI, 2013). One of the biggest constraints in the horticulture sector has been the extent of post-harvest losses which is about 5.8—8.0 per cent with monetary value amounting to around ₹ 44,000 crores based on wholesale prices of 2009 (ICAR, 2010). Grading means the sorting of the unlike lots of the produce into different lots according to the quality specifications laid down (Acharya and Agarwal, 2004). The Agricultural Produce (Grading and Marking) Act, 1937 empowers the Central Government to fix quality standards, known as 'AGMARK' standards, and, to prescribe terms and conditions for using the seal of

AGMARK; so far, grade standards have been notified for 181 agricultural and allied commodities (GOI, 2007). There is no separate space for grading at farmers' fields, however, the farmers manage grading activity at their fields only.

Marketing constraints faced by Farmers

Table 6 highlights the farmers' response regarding marketing constraints faced by them in the agricultural markets of the state. These constraints are based on farmers' survey. Lack of scientific storage emerges as the most important constraint; 72% farmers have reported lack of scientific storage facilities. The Department of Agriculture and Cooperation introduced a central sector scheme, the '*Grameen Bhandaran Yojana*,' in March 2002 to promote the construction of rural godowns with the main objectives of creation of a scientific storage capacity with allied facilities in rural areas to meet the requirements of farmers for storing farm produce and to prevent distress sale of produce (GOI, 2007). The scheme basically intends to build the storage capacity for the grains. Another scheme for development/strengthening of agricultural marketing infrastructure, grading and standardization was started by the Government of India for creation of market users common facilities like market yards, platforms for loading,

assembling and auctioning of the produce, weighing and mechanical handling equipments, etc., functional infrastructure, value addition facilities, infrastructure for E-trading etc., will be for those states which undertake reforms in APMC Act to allow 'Direct Marketing' and 'Contract Farming' and to permit agricultural produce markets in private and cooperative sectors (NABARD).

Table 5: Status of infrastructure availability with farmers

Marketing Infrastructure	Availability (%)	Average Distance (km)	Range (km)
Road connectivity			
Kuccha	11	2	0.5-4
Pakka	89	2.5	0-10
Transport Facilities			
Public Transport	83	19	
Owned Vehicle	17		
Storage and certification			
Cold Storage Facility	9	4	2-7
Quality Certification	4	5.6	3-7
Space for Grading			
In Village	100	Less than 2	0-2

As the state APMC Act was amended in the year 2011, the state could not avail the advantage of this scheme before that. The evidences on the recent implementation of such scheme in the state are non-existent. The government monopoly in setting up agricultural markets has prevented the private sector from taking the initiative to develop marketing infrastructure (Acharya, 2004).

Market information encompasses timely and accurate prices, buyer contacts, distribution channels, buyer and producer trends, import regulations, competitor profiles, grade and standards specifications, postharvest handling advice, and storage and transport recommendations (Kohls and Uhl, 1985). Authentic information on market price and charges remains a major constraint for the farmers (reported by 53% farmers) as this is assumed to have influence on the cropping pattern and marketing decisions of the farmers.

Majority of the farmers still receive market information through the traditional sources like regulated markets, traders and fellow farmers visiting the market yards. New sources of information like newspapers, television, SMSs etc., are emerging information sources for the farmers. Strong emphasis has been placed in the recent past on providing market information as well as price forecasts to the farmers through many Government and private initiatives. Information about market attributes is essential to keep the farmers and traders abreast about existing market prices, domestic and global agricultural supply and demand conditions, policy environment and other relevant factors influencing the prices.

Table 6: Marketing constraints faced and reported by the farmers

Major Constraints	Farmers Reporting (%)
Lack of scientific storage at farm level	72
Insufficient information about market prices and marketing charges	53
Distress sale	48
Lack of transportation facilities in the market	33
Exploitative practices by the traders in market	31
Lack of space of auction/sale of produce	28
Malpractices adopted by trader in weighing	19
Undue charges by the traders	16
Delay in payment by the traders	16

Source: Primary Survey

Around 48% farmers reported distress sale as a marketing constraint, which is quite obvious as there is lack of scientific storage and most of the horticultural commodities are perishable in nature. About 33% farmers reported lack of transportation facilities; as Uttarakhand is basically a hilly state and most of the produce from hills comes to the plain region of the state for disposal, it becomes important to provide specialized and improved transportation facilities for quality maintenance and timely delivery.

Thus, it emerges that market interventions are required in terms of creating scientific storage, providing improved transportation services, adequate market information

to prevent distress sale and also interventions aimed at improving the marketing system in the state.

Conclusion

The Marketing system and its efficient functioning especially agricultural markets plays a significant role in agriculture sector that supposed to add to the welfare of the producers as well as consumers. The present study reveals that there are 26 principal market yards, 31 sub market yards and 27 weekly markets for marketing of agricultural produce are regulated effectively in 11 districts of Uttarakhand. However, majority of the districts of this state are located in hilly region, but the principal markets are largely located in the plain regions. It is important to note that the Haldwani market has the highest numbers of functionaries that covers about 20% of the total functionaries and receives the higher arrival of horticulture commodities, yet not any commission agents and transporters were found in this market. During the winter season, the arrivals seem to be cluttering which may create some constraints in the handling of commodities in the markets. It has been reported in studies that the main reasons for poor performance of the markets in Uttarakhand is the poor market infrastructure that have been attributed to the fact that the market committees did not reinvest the market fee that has been collected for the development of infrastructure and these funds in several cases were siphoned-off to the government account. However, earnings of the markets may provide fuels for improving the infrastructure to further enhance the market capacity and marketing efficiency.

The farmers' perception reveal that the farmers were satisfied with the boarding/lodging, weighment, grading, cleanliness, information sharing etc. and they largely sell their produce to Haldwani market or the grain *mandies* in Rudrapur, Jaspur, Sitarganj etc., which are relatively better markets in terms of infrastructure. However, , farmers of the state expressed dissatisfaction due to lack of storage facilities especially during the rainy season. Around 48% farmers reported distress sale as a marketing constraint. Thus, the storage infrastructure is the basic necessity in all the agricultural markets to remove the market inefficiencies and it will be helpful

for increasing the farmers' incomes. Moreover, the validation of infrastructure availability at farmers' fields reveals that most of the farmers had proper connectivity in terms of pukka road that plays a major role in movement of produce just like arteries play a role in human body for blood circulation. It may be inferred that the hilly regions of the state require special attention on the marketing interventions and infrastructure due to difficult terrains and limited bargaining and handling capacity of the growers resulting from lower size of holding and lack of resources.

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