

Marketing Behaviour of Vegetable Growers in Uttarakhand hills

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ABSTRACT

Vegetable production has great economic importance in hills of Uttarakhand. For deriving optimum return from the production, marketing of green vegetables is very crucial. A study was conducted in Almora and Nainital districts of Uttarakhand to find out marketing behaviour of the vegetable growers and constraints in marketing of vegetable produce. Results revealed that distant mandi was a major choice for sale of the produce. Majority of farmers sold their full produce by using private mode of transportation. They followed grading and standardization and spent more than six hours in a week for farm related activities. Relatives/friends and vegetable merchants were major sources of market preference. The major marketing constraints were higher commission rate of middlemen, fluctuating market rate, non-availability of nearby market, high transportation charges and high cost of packaging material. The solution lies in creation of horticulture based self-help group at village level, organization of weekly *Haat*, strict compliance of rules and regulation of regulated market, guidance on market avenues from time to time to the vegetable growers.

Keywords: Hill agriculture, Marketing constraints, Value chain, Vegetables

INTRODUCTION

Uttarakhand hills endowed with natural bounties and its unique agro climatic condition offers favourable climate for growing large number of horticultural crops including vegetable. Vegetable offers an unique opportunity to earn money not only for hill farmers but even the farmers of plain are gradually shifting to vegetable crops for better earning (Maity *et al.*, 2013). Production of vegetables in hills generates income as well as employment of farm families. One of the necessary conditions for these farmers to get maximum return for their produce is the provision of assured marketing. In this era of technological development several technologies such as protected cultivation using modern poly house technologies (Negi *et al.*, 2013), plug-tray nursery techniques (Shubha *et al.*, 2015), plastic mulching etc have emerged and adopted in some niche area of Himalaya. But it has not up scaled much due to lack of markets.

Hill farmers are key stakeholders of agricultural system and critical end users of technology. It is therefore,

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necessary to realise their needs, objectives and outlook. Apart from scarcity of water and weather vagaries, today's main issue in hill agriculture is lack of marketing infrastructure. Agriculture is still substantive no more remains as lucrative due to lack of entrepreneurial environment. Now a day, young and educated farmers rather than old and traditional are more associating with innovative modern technologies and extension systems delivered by private players (Mukherjee *et al.*, 2011, Mukherjee and Maity, 2015). But it is also lagging behind in hills. A producer has to incur very low marketing cost due to low volume of produce to sell, grade, packing and transport it to the market. Thus the business of vegetable cultivation operates within these two extreme situations. Studies shows that farmers' profit orientation and market orientation are required factors (Mukherjee *et al.*, 2012a&b) for making agriculture profit oriented along with climate resilient particularly in hills (Mukherjee *et al.*, 2016). A very less studies have been carried out regarding the marketing behaviour and constraints faced by hill farmers. In this backdrop, the study was framed with following objectives:

1. To analyse the marketing behaviour of vegetable growers.
2. To know the perception and identify the constraints faced by the vegetable growers in marketing of vegetable produce.

MATERIALS AND METHODS

The study was conducted in Almora and Nainital districts of Kumaon Division of Uttarakhand state. These districts rank first and second respectively in terms of vegetable production and acreage (Uttarakhand state Horticultural database, 2014-15). The multi stage random sampling was used to select the respondents. Accordingly, a list of major vegetable growing development blocks was obtained from the District Horticulture Office of the selected district, where two villages from each development block having maximum area under vegetable cultivation were selected. Thus, finally eight villages namely Budhibana and Parwara (Dhari development block), Kafulta and Khalad (Betalghat development block) from Nainital district and Tunakot and Tipola (Tarikhet development block) and Natadol and Morpatyuri (Lamgara development block) from Almora district were chosen. A sample of 15 respondents from each village was selected randomly constituting a total 120 respondents for the study. Data were collected during 2007-08 as a part of Ph.D. degree programme through structured interview schedule at their field and residence. Suitable statistical tools were used to analyse the data.

RESULT AND DISCUSSIONS

In the state of Uttarakhand, out of 7,53,711 ha net sown area around 82,782 ha *i.e.* 10.98% (Govt. of Uttarakhand, 2014-15) is used for vegetable cultivation. Major vegetables grown are vegetable pea, potato, tomato, cabbage, cauliflower, French bean, capsicum, brinjal etc. Generally in hills a family of vegetable grower consists of 5-6 members with marginal land holding (2000-3000 m²) and annual income of upto Rs. 50,000/-. Dairy as essential component of the system contributes 20-30% in agricultural income *i.e.* usually Rs. 20,000-30,000 / annum.

Entire effort of a vegetable grower of hills revolves around production as well as marketing of the vegetable produce. The produce is available round the year depending upon the time of sowing and growing

condition. The behavioural skill *i.e.* marketing behaviour is helpful in the assessment of probable sale and formulating the desired marketing strategy. The marketing behaviour of a vegetable grower was studied with identified eleven component namely mode of transport, selling place, time of sale, marketed surplus, grading and standardization, weighing behaviour, sale agency, payment pattern, method of packing, sources of market preferences and time devoted. The data has been presented in Table 1. Majority of the respondents (78.33%) used private sources of transportation including mule and horse. Generally, a vegetable grower having head load of 20-30 kg walked to a distance of 2-3 km to reach at road-head. From road-head hired vehicles were used to transport the produce. Transportation facility through cooperative sector like *Dagri Samuh* (a self help group), Mother Dairy was availed by 19.16% respondents. Further, it showed that most of the respondents (69.16%) used to sell their farm produce at distant mandis (60-100 Km) located in foothills of Haldwani and nearby towns. Besides, few of them used to sell their produce at nearby market of Almora, Ranikhet, Bhawali, and Khairana (30-40 km). More than a quarter of the respondents (30.83%) used to sell their produce at village level.

The concept of sale at local hat was new to the vegetable growers. During the project Horticultural Mini Mission the district administration of Nainital and Almora had taken several initiatives. These activities were highlighted in local print media for creating awareness to the consumer as well as producers. With regard to time of sale, 95 per cent of the respondents sold the entire produce immediately after harvest due to perishability of the produce and lack of storage. Most of the respondents (85.83%) sold their full amount of marketable surplus to the retailers/merchants/commission agents available at village. Normally, the amount of produce to an individual grower varied from 25-100 q. Only 14.13% respondents had farm produce more than 100 q. Grading is the best practice for higher market price and majority of the respondents (73.33%) followed it. Vegetables growers mostly followed eye-sight grade based upon size (big, small, medium), colour (pink, red, brown, yellow, light green etc.), shape (round, oval and oblong) and firmness (soft, hard) of vegetables like potato, capsicum, pea, cabbage and tomato. These vegetables were supplied to Mother Dairy, a Delhi based

Table 1: Distribution of vegetable growers as per their marketing behaviour (n=120)

S.No.	Marketing behaviour	Response			
		Private transport	Cooperative transport	Government transport	Other transport
1.	Mode of transport	94 (78.33)	23 (19.16)	-	03 (2.5)
2.	Selling place	Village 37 (30.83)	Mandi 83 (69.16)	Hat -	Others -
3.	Time of sale	After initial storage 06 (5)	Immediately after harvest 104 (95)	-	-
4.	Marketed surplus	Full 107 (85.83)	Half -	Partial 14 (14.13)	-
5.	Grading and standardization	Yes 88 (73.33)	No 32 (26.66)	-	-
6.	Weighing behaviour	Yes 102 (85)	No 18 (15)	-	-
7.	Sale agency*	Retailer 16 (13.33)	Merchants 73 (60.83)	Commission agents 43 (35.63)	Others -
8.	Payment pattern	Full 37 (30.83)	Partial 83 (69.16)	-	-
9.	Method of packing*	Gunny bags 113 (94.16)	Wooden boxes 77 (64.16)	Baskets 63 (52.50)	Plastic crates 53 (44.16)
10.	Sources of market preferences*	Relatives/friends 103 (85.83)	Newspaper 8 (6.66)	Horticulture 28 (23.33)	Merchants 73 (60.83)
11.	Time devoted	<3 hours 16 (13.33)	3-6 hours 39 (32.51)	>6 hours 65 (54.16)	-
12.	Credit	Availed Financial 39 (32.5)	Not availed Non-financial 22 (18.33)	Self-management 59 (49.16)	-

*Multiple responses

organization. Less than a quarter (23.33%) approached Office of Horticulture Mobile Team for technical and advisory services. There are total 285 teams and operate under the administrative control of the state Govt. Few respondents followed value addition in case of cauliflower. They covered the head of cauliflower with leaves to protect it from bright sunlight resulting in better appearance of head.

The growers were conscious to accurate weight as most of the respondents (85.00%) were found to be checking the weights before selling their produce to retailers/merchants/commission agents. The status of marketing channel shows that more than half of the respondents (60.83%) sold their produce to merchants followed by commission agents (35.63%). More than one tenth (13.33%) respondents preferred them to sell

their produce to retailers because of their accessibility and proximity. It was worried because majority of the respondents (69.16%) reported for having partial payment. In hills, it is normal practice to give advance/loan to growers for social/consumption/ agricultural purpose. The growers used to supply to the produce in lieu of advance/loan taken from retailers/merchants/commission agents.

Packaging is an important issue as majority of the respondents (94.16%) preferred gunny bags over other materials due to cheap and easily availability. It was followed by wooden boxes (64.16%), baskets made of local weedy shrubs (52.50%) and plastic crates (44.16%). Wooden boxes were used for costly vegetables like capsicum and tomato. Use of plastic crates was restricted to the vegetable growers dealing with Mother Dairy. As for source of information channels concerns the relatives/friends (85.83%) followed by vegetable merchant (60.83%) played a major role as sources of information on market preferences. This might be due to upper hand of these sources in terms of frequent interaction, easy access and credibility. They were aware of marketing criteria of Mother Dairy and retailers. Mother dairy preferred cabbage having head weight of 300 gm. Retailers demanded hybrid capsicum over local one due to thick skin. It did not shrivel in sun shine.

As far as time is concerned, more than half of the respondents (54.16%) devoted more than 6 hours in a week followed by 3-6 hours and less than 3 hours in a week during the month of May-September/October. The respondents were busy in arrangement of packing material, purchase of farm inputs, transportation and collection of money from creditors. Further, regarding credit majority of the respondent (49.16%) managed it from own source *i.e.* savings. Around one third (32.50%) respondents approached to the financial institutions like primary cooperative societies and commercial banks. Most of the respondent availed loan of Rs. 10,000/. One fourth of them took loan for Rs. more than Rs. 20,000/. For rest of the respondent amount varied in the range of Rs. 10,000-20,000. The nature of loan was short term (5-6 month). It was used to repay with the supply of vegetable produce to the financiers.

Perception towards marketing of vegetables:
Perception is a very personal thing which is related to

relevant past experience of an individual. It is a process by which impressions, opinions, feelings about an object are formed by means of sensory operations. The average perception score of vegetable growers towards various aspects of marketing was measured by Likert's method of summated rating (1932) on 5 point continuum (*i.e.* Strongly agree, Agree, Undecided, Disagree and Strongly disagree). The weighted mean perception score for each statement are presented in Table 2.

Mean perception score of 4.85 indicated that majority of the vegetable growers were strongly agree in hills vegetables realizes maximum market price. They were well aware of climatic advantages of hill for cultivation of off-season vegetables in comparison to plain. This venture could utilize their marginal land and family labour in more productive way than low value crop production. The finding were similar to the findings reported by UPAA; CDS:IDH (2000) that off season vegetable cultivation is profitable.

Around three fourth vegetable growers (74.16%) were strongly agreed that transaction cost was a major demotivating factor for taking vegetables in the market. These were located 80 to 100 km away from their villages. Major reasons cited by the respondents were difficult and undulated terrain, high cost of packaging material, high cost of transportation and lack of proper policy. As per them, providing of local transport, local made packaging material, better transportation and proper vegetable production policy would increase the marketing efficiency. A majority of vegetable growers (54.16%) agreed to statement that government support for marketing is not sufficient. They reported that out of 25 mandis only 20 were functional. These regulated/principal market/sub market yards were mostly confined to plains *i.e.* Rudrapur, Haldwani and Dehradun. Majority of vegetable growers (67.50%) disagreed that storage facilities for vegetables were sufficient. The cold storage infrastructure was non-existent in hills. Similarly, majority of vegetable growers (63.33%) disagreed to the statement that route are good to carry the produce up to main road. Poor road consumed their more time and created physical problem in completion of marketing process. Even in the Kumaon hill wide variation in density of road has been reported *i.e.* 96 km in Pithoragarh district and 943 km in Nainital. All these required proper production policy.

Table 2: Perception of vegetable growers towards marketing of vegetables

Statements	SA(freq.)	A(freq.)	U(freq.)	D(freq.)	SD(freq.)	MPS
Transaction cost is the main factor for taking vegetables in the market	89(74.16)	31(25.83)	0	0	0	4.74
In hills vegetables realizes maximum market price	103(85.83)	17(14.16)	0	0	0	4.85
Marketing of vegetable crop is very simple	0	0	21(17.5)	72(60.00)	27(22.50)	1.95
Vegetable growers get due share in consumer price	0	0	28(23.33)	33(27.50)	59(40.83)	1.74
Institutional credit is easily available for growing vegetables	0	15(12.50)	0	88(73.33)	17(14.16)	2.10
Government support for marketing is not sufficient	74(54.16)	38(31.66)	8(6.66)	0	0	4.55
Pre and post harvest loss is high in vegetables	33(27.50)	87(72.50)	0	0	0	4.49
Setting up regulated purchase centre of vegetable in nearby localities will boost up the production of vegetable	46(38.33)	58(48.33)	22(18.33)	4(3.33)	0	4.21
Standardization and grading increases the burden of a vegetable grower	0	23(19.16)	0	97(80.83)	0	2.38
I am satisfied with role of marketing channels	0	0	0	76(63.33)	44(36.66)	4.36
A vegetable grower should apply the principle of business to run the enterprise successfully	21(17.50)	62(51.66)	28(23.33)	9(7.50)	0	3.79
ICT should be strengthened in hills	48(40.00)	57(47.50)	15(12.50)	0	0	4.27
There is a need of more co-operative agencies like Mother Dairy in hills	44(36.66)	54(45.00)	22(18.33)	0	0	4.18
I will increase area under vegetables for higher income	0	13(10.83)	17(14.16)	49(40.83)	41(34.16)	2.01
Storage facilities for vegetables are sufficient	0	0	0	81(67.50)	39(32.50)	1.67
Knowledge on preservation of vegetables is essential for exigencies	11(9.16)	73(60.83)	34(28.33)	0	0	3.74
The route are good to carry the produce up to main road	0	0	17(14.16)	27(22.50)	76(63.33)	1.27
Farm women have lesser role in vegetable marketing than men	55(45.83)	42(35.00)	13(10.83)	0	0	3.58
Creation of vegetables based Self Help Groups will solve many inherent marketing problems	18(15.00)	71(59.16)	31(25.83)	0	0	3.85
Average						3.35

SA: Strongly Agree A: Agree U: Undecided D: Disagree SD: Strongly Disagree; MPS: Mean Perception Score

Constraints in marketing of vegetables: In hills particularly, the extremely perishable nature of vegetables makes marketing more difficult because of area of production and area of consumption are located at different places. Tough geographical terrain adds in the way. At field level several reasons were identified ranging from high commission rate to damage of vegetables during transportation. Perusal of Table 3 indicated that most serious problem of the respondents (85.83%) were higher commission rate of middlemen.

It varied 8-12% of the produce subjected to place of sale and types of vegetable. It was followed by non-availability of nearby market (73.33%) to sell their vegetable produce. It was observed that during data

collection the respondents were busy in transporting their produce to distant mandis. High cost of packing material (60.83%) was the next major bottleneck of vegetable growers. High cost of packing material such as paper cardboard (Rs. 40 for packing of 18 kg) and plastic crates (Rs. 100/unit for packing of 25 kg) deterred them to use it. Vegetables are perishable in nature and can not be stored for a longer period at vegetable grower's field. The price fluctuated day to day and even within a day. Thus they had no choice except disposing of the produce at price offered to them. High transportation charges (51.66%) reduced their consumer price. Even then, delay in arrival at mandis due to road blockage in rainy days and religious pilgrimage (*kamwar*) affected the marketing

Table 3: Marketing constraints as perceived by vegetable growers

Constraints	Frequency (n=120)	Percentage	Rank
Higher commission rate of middlemen	103	85.83	I
Non-availability of nearby market	88	73.33	II
High cost of packing material	73	60.83	III
Fluctuating market rate	67	55.83	IV
High transportation charges	62	51.66	V
Delay in sale	47	39.16	VI
Damage of vegetable during transport	37	30.83	VII

process seriously. Damage of vegetable during transport was experienced by 30.83% respondents. Uneven roads resulted in abrasions on the fresh vegetables and affected the appearance of the produce reduced profit margin due to low market price.

Above findings are in line with the observations made by Vinaygam and Gethakutty (2006); Verma (2007); Kumar and Sharma (2009); Sah *et al.* (2011); Mukherjee (2015); Yadav and Godara (2016) who reported these kinds of problems faced by the farmers regarding marketing of their produce. Vegetable growers suggested establishment of more regulated markets, government intervention in case of low price of vegetable produce, setting up mandis nearby villages, availability of low cost packing material, transportation facility and purchase of low grade vegetable for processing.

CONCLUSION

The study revealed that in hills vegetable growers cultivate vegetables under various kinds of problems ranging from distant location of mandis to high cost of packaging material as well as high commission rate. The positive perception of vegetable growers for vegetables showed that they wanted to transform their economy. They required more support from Union as well as State Government. Two types of approaches i.e. short and long term are urgently required to address the issue. Horticulture based self help group may tackle the problem of credit as well as transportation to some extent. Organization of weekly/bi weekly hats on regular basis may provide opportunity to have interaction with prospective buyers. On a long term basis strict compliance of rules and regulations of regulated market, guidance on market avenues may further improve the situation. In cumulative form all will have synergetic effect boosting the production as well as income of the vegetable growers of Uttarakhand hills in particular.

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