

Marketing System of Vegetables in Hot Arid Regions of Rajasthan

S.R. Meena, Manpreet Kaur* and R.C. Balai

ICAR-Central Institute for Arid Horticulture, Bikaner

Corresponding Author

Manpreet Kaur

Email: manpreet.kaur1@icar.gov.in



OPEN ACCESS

Keywords

Distributor, Hawkers, Marketing efficiency, Processor

How to cite this article:

Meena, S. R., Kaur, M. and Balai, R. C. 2024. Marketing System of Vegetables in Hot Arid Regions of Rajasthan. *Vigyan Varta* 5(12): 166-169.

ABSTRACT

Arid environment is characterized by hostile agro-climate and fragile ecosystem. However, a number of vegetables such as kachri, snapmelon, mateera, clusterbean, cowpea, mothbean (tender pods), greengram (tender pods), cowpea (veg.), aloevera, local mushroom, brinjal, and leafy vegetables such as fenugreek, amaranthus, bathua, palak, sangria are grown in the region and are considered arid vegetables. Five marketing channels were identified in the region on basis of survey conducted in Bikaner district of Rajasthan. The most efficient marketing channel was Producer → Consumer which was fourth most followed channel while the most followed channel was Producer → Primary wholesaler (local Mandi) → Secondary wholesaler → Retailers/ Hawkers → Consumer.

INTRODUCTION

Horticulture development was initiated in India specifically with National Horticulture Mission (NHM) in 2005-06 to harness the potential of horticulture sector. NHM was later merged with Horticulture Mission for North East and Himalayan States (HMNEH), National Horticulture Board (NHB), Coconut Development Board (CDB), Central Institute

for Horticulture (CIH) to form Mission for Integrated Development of Horticulture (MIDH) to promote holistic growth of horticulture sector by using region specific strategies of research, extension, post-harvest management, processing and marketing to enhance the productivity, strengthen nutritional security and improve farmers' income (Kaur *et al.*, 2021). Area under total

vegetables has increased to 11.35 million ha (Mha) with a total production of 204.84 million metric tonnes (Mt). However, there is huge variation in the area under vegetable cultivation among the different states of India. The area ranges from 0.00262 Mha in Arunachal Pradesh to 1.53 Mha in West Bengal in 2021-22. However, the state of Rajasthan, which has 17.4 Mha of cultivated area, has only 0.19 Mha under vegetable crop cultivation (Agri statistics at a glance, 2022).

The state of Rajasthan accounts for 19.62 Mha of hot arid regions, particularly western Rajasthan that is characterized by hostile agro-climate and fragile ecosystem. The Thar Desert, located in the western part of Rajasthan, spans 12 districts and covers approximately 61% of the state's total area. A harsh agro-climatic environment and a fragile ecosystem characterize this region. Annual rainfall ranges between 100–500 mm, with a high coefficient of variation (CV) of 40–70%, reflecting the erratic and uneven distribution of precipitation. The desert experiences extreme temperatures, intense solar radiation (450–500 cal/cm²/day), low relative humidity, and high potential evapotranspiration rates, ranging from 1,600 mm in the eastern parts to 1,800 mm in the western parts. Relative humidity (RH) peaks during the monsoon season (July–August), reaching 60–80%, but declines sharply from October onward, falling below 30% in March and April. RH levels vary annually, influenced by the onset of monsoons and wind patterns. The region also faces challenges such as high wind velocities, poor soil quality with low organic matter and limited water-holding capacity, and brackish or saline groundwater. The abundant solar energy in the area is accompanied by sparse vegetation, frequent droughts, and occasional frost (Yadava and Soni, 2008). The major vegetables of the arid region include kachri, snapmelon, mateera, clusterbean, cowpea, mothbean (tender pods), greengram (tender

pods), cowpea (veg.), aloe vera, local mushroom, brinjal, and leafy vegetables such as fenugreek, amaranthus, bathua, palak. Apart from this, the tender pods of khejri (sangri), flower buds of phog (locally called phogala), tender fruits of ker and khimp are also consumed as vegetables (Meena et al., 2009).

Marketing channels of vegetables in hot arid region of Rajasthan:

A study was conducted through benchmark survey in Bikaner district of Rajasthan state to identify the most common marketing channels used by vegetable growers in 2019-20. For this, a multistage sampling technique was used where six tehsils i.e., Bikaner, Kolayat, Lunkaransar, Shri Dungargarh, Nokha, Khajuwala were selected and two villages from each tehsil were selected randomly. From each village, 30 farmers were selected randomly to constitute a sample of 360 farmers. As per respondents, five marketing channels were identified in the region in table as under:

Sr. No.	Vegetable Marketing Channels	Scores of all six Tehsils of the study (PMS = 1800) *	Rank
1.	Producer → Local merchant/Assembler → Wholesaler → Retailer/Hawker → Consumer	1422	2
2.	Producer → Wholesaler (Market Yard) → Processor → Wholesaler (Distributor) → Retailer → Consumer	856	5
3.	Producer → Primary wholesaler → Secondary wholesaler → Retailer/Hawker → Consumer	1240	3
4.	Producer → Primary wholesaler (local Mandi) → Secondary wholesaler → Retailers/ Hawkers → Consumer	1540	1
5.	Producer → Consumer	1068	4

***PMS = Possible Maximum Scores of 360 respondents.**

It is clear from table that the most common marketing channel followed in the region for fresh vegetables was Producer → Primary wholesaler (local Mandi) → Secondary wholesaler → Retailers/ Hawkers → Consumer. The farmers are selling their produce in the market yards to wholesalers which sells the produce to retailers. The retailer sells their produce in small quantities to the final consumers at their shops. Both wholesaler and retailer charge a significant marketing margin and lowers the producers' share in consumer rupees. The next important marketing system was Producer → Local merchant/Assembler → Wholesaler → Retailer/ Hawker → Consumer. A huge proportion of farmers in hot arid region are small farmers and have a small share of marketable surplus. The farmers therefore sell their produce to local merchants or assemblers, which are often large farmers to avoid the transportation cost. This marketing channel also bring them lower share in consumer's rupee but the risk and uncertainty associated with selling the produce at a faraway place is lowered.

The third prevailing marketing channel was Producer → Primary wholesaler → Secondary wholesaler → Retailer/Hawker → Consumer. There is slight modification in the previous channels as the produce is not sold in market yard and there are five agents involved in the channel. This marketing channel is usually followed when the retailers have to rely on a secondary wholesaler for buying the produce as primary wholesale market is at a faraway place. The marketing efficiency of this marketing channel is lower than the previous marketing channels. Consequently, the producer share in consumers' rupee is lower than the previous marketing channel. The fourth vegetable marketing channel was Producer → Consumer. This is the fourth most common marketing channel and only adopted by producers having a considerable share of

marketable surplus. The producer, himself deals with the consumers thus removing the intermediaries. Highest marketing efficiency is observed in this channel and there is cent percent producer' share in consumer rupee. The fifth vegetable marketing channel used was Producer → Wholesaler (Market Yard) → Processor → Wholesaler (Distributor) → Retailer → Consumer. A number of arid vegetables are sold in processed form. The processors usually buy at a wholesale market and process the vegetables for increasing its value. After processing of vegetables, the processors may choose to sell it through a distributor. The distributor then sale it to various retail outlets and retailers finally sells it to various consumers. This is the longest marketing channel and involves value addition. The price spread is very high in this channel and the producer share in consumers' rupee is very low indicating lower marketing efficiency.

Issues in marketing of vegetables:

There are number of issues/constraints associated with the marketing of vegetable crops in hot arid regions some of which were as mentioned below (Chand *et al.*, 2020, Choudhary *et al.*, 2022 and Hegde and Madhuri, 2013). These constraints effect the marketing efficiency of various marketing channels and lower the profits associated with cultivation of vegetable crops.

1. Perishability of product
2. Seasonality of production
3. Bulkiness of products
4. Lack of cold storage place
5. Lack of regulated market
6. Huge price gap between procurement and selling
7. Lack of schemes for small land holding farmers

8. Larger cost of labour and unavailability of labour
9. Lack of infrastructure
10. Lack of institutional credit
11. High price fluctuation
12. Lack of minimum support price
13. Lack of market information
14. Lack of suitable cold storage facility

CONCLUSION:

The marketing of vegetables is faced with several challenges specifically in hot arid region because of hostile climate and fragile ecosystem. Moreover, there are number of other marketing issues associated, particularly with marketing of arid vegetables because of their perishability, bulkiness and absence of infrastructure facilities. There are a number of marketing channels identified in the region of which Producer → Consumer is the most efficient marketing channel as there is cent percent share of producer in consumer' rupee. The most common marketing channel is where the produce is sold in wholesale market (market yard or Mandi) from where the retailers buy the produce in small quantities and finally provide it to consumers.

REFERENCES:

Chand K, Kumar S, Suresh A and Dastagiri MB. 2020. Marketing efficiency of vegetables in developing economies: Evidences for critical intervention from Rajasthan, India. *Indian Journal of Agricultural Sciences*. 90(8): 1419-1427.

Choudhary R, Jain S and Shekhawat PS. 2022. Constraints in production and marketing of vegetables under polyhouse and normal field conditions in Jaipur district of Rajasthan state. *The pharma innovation*. SP-11 (2): 798-802.

Hegde RN and Madhuri NV. 2013. A study on marketing infrastructure for fruits and vegetables in India. Research report series 91. National Institute of Rural Development. Ministry of Rural Development, Govt. of India.

Kaur M, Malhi GS and Malik DP. 2021. Role of public policies in agricultural development in India and their consequences. In: Sustainable Soil Fertility Management (eds.) Jatav HS, Singh SK, Rajput VD and Minkina T. Nova science publishers New York, USA. (ISBN: 978-1-53619-055-7)

Meena SR, More TA, Singh D and Singh IS. 2009. Arid vegetable production potential and income generation. *Indian Res. J. Ext. Edu.* 9(2): 72-75.

Yadava ND and Soni ML. 2008. Integration of horticultural crops into farming system in hot arid zone of western Rajasthan. in *Hi-tech Production of Arid Horticulture*. (Eds). More, TA *et al.* pp.367 – 371. Central Institute for Arid Horticulture, Bikaner – 334 006 Rajasthan.