RESEARCH ARTICLE

MARKETING OF MANDARIN ORANGE IN JAJARKOT DISTRICT: A VALUE CHAIN ANALYSIS

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ARTICLE DETAILS

ABSTRACT

The study was conducted to analyze the value chain of mandarin orange in Jajarkot district with the objective of drawing value chain map, defining linkage and value governance and finding major constraints. Total 82 respondents were interviewed by a semi-structured questionnaire including 60 farmers, 5 retailers, 5 collectors, 10 consumers, and 2 processors. EXCEL 2019 and SPSS 20 were used to enter and analyze data. Grading and sorting were major value-adding activities while processing was done at the retailer level in end markets. Grading fetched 4.188% and 3.94% more profit in contractor and consumer level respectively. The Most dominating channel was farmer-local consumer (46%) where farmers sold produce to Jajarkot fair. The Average price at farmgate, retailer, collector and contractor were 39.08/kg, 61.2/kg, 46.75/kg, and 49.75/kg respectively. Productivity of mandarin was found 8.54 mt/ha and B/C ratio was found 2.56. Margin in farmer-collector-retailer-consumer channel was 29.25 and in farmer-retailer-consumer channel was 23.08. Producer share was found highest in channel 5 (60.13%) and market efficiency was found higher in channel 3 (4.88%). Similarly, price spread in channels 3,4 and 5 were 34.33%, 64.19%, and 66.75% respectively. Vertical Integration included farmer and nurseries in backward linkage and farmer and farmer collector in the forward linkage. High transport cost was the reason for the high price of mandarin. Overall, the trade of mandarin in Jajarkot was found buyer-driven. Major problems related to marketing were poor storage (0.877) and processing facilities (0.833). The study revealed that mandarin production is profitable and potential in Jajarkot.

KEYWORDS

1. INTRODUCTION

Mandarin orange occupies the major portion of growing area followed by sweet orange which is further followed by acid lime (Gupta, 2018). Mandarin orange is major citrus crop grown in hills and mid-hills in different parts of Nepal. The Area occupied by mandarin is 2/3rd of total area occupied by citrus and 1/3rd of total area occupied by fruits in Nepal (Shrestha, 2018). However, Production of citrus is in increasing trend but productivity has not been increased as expected(Pokhrel, 2011). According to a study, productivity of mandarin in Jajarkot district was 10 ton/ha (MOAD, 2018). The shrinkage in land holding makes difficulty in implementing the infrastructures and technologies adaptation becomes difficult and costly at farmers' level (Annpailine, 2014). High market cost, margin and producer share were the consequences of unorganized market (Shrestha, 2018).Value chain comprises the process of value addition through different level of stakeholder from production to final consumption i.e. from producer to last consumer (Miller, 2007).

Value chain involves every step such as grading, design, distribution from producer to consumer. In agriculture the process of value chain runs from producer to the final consumer through collector, contractor, processor wholesaler and retailer. So, the overall objective of the study was to analyze the status of marketing efficiency and value chain during different marketing channels from producers to final consumers.

2. METHODOLOGY

Nalgad municipality (28.83N 82.35E), Bheri municipality (28.73N 82.22E) and Kushe rural municipal (28.84N 82.17E) of Jajarkot district were selected by purposive sampling techniques. Overall 82 respondents were selected including 60 farmers, 12 traders and 10 consumers by simple random sampling technique by lottery method. Primary data was collected through a household survey, focus group discussion and key informant survey. Secondary data was collected through different publications. Data collected were entered and analyzed using SPSS 20 and MS EXCEL 2019. Descriptive analysis was done using frequency and percentage. Analyzed data was presented using the pie chart, bar graph, and channels.

Price spread, market margin, market efficiency, and producer share were calculated using the given formula.

$$\text{Price spread} = \frac{\text{consumer price-net price received by farmer}}{\text{Consumer price}} * 100$$

Gross Market margin = purchasing price – selling price
Net market margin = gross market margin – market cost

$$\text{Market efficiency} = \frac{\text{consumer price} - (\text{market cost} + \text{market margin})}{\text{Market cost} + \text{market margin}}$$

$$\text{Producer share} = \frac{\text{farmers net selling price} * 100}{\text{Consumer price}}$$
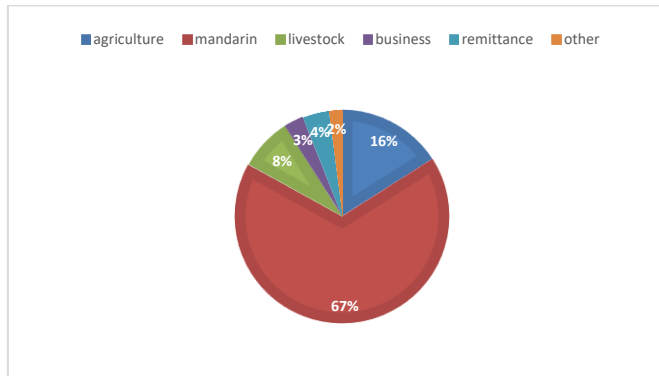
3. RESULTS

Figure 1: Source of income of respondents

The Figure shows that mandarin plays a major role in income and economic status of farmers. This also indicates that the major source of income was mandarin and mandarin was the major business of the respondents.

Table 1: Influence of stakeholders in price decision		
Stakeholders	Index	Rank
Traders	0.875	I
Consumer	0.76666	II
Producer	0.50416	III

Traders had highest influence in deciding price and farmers had nearly negligible influence in price decision. This was due to lack of market information and poor bargaining capacity of farmers.
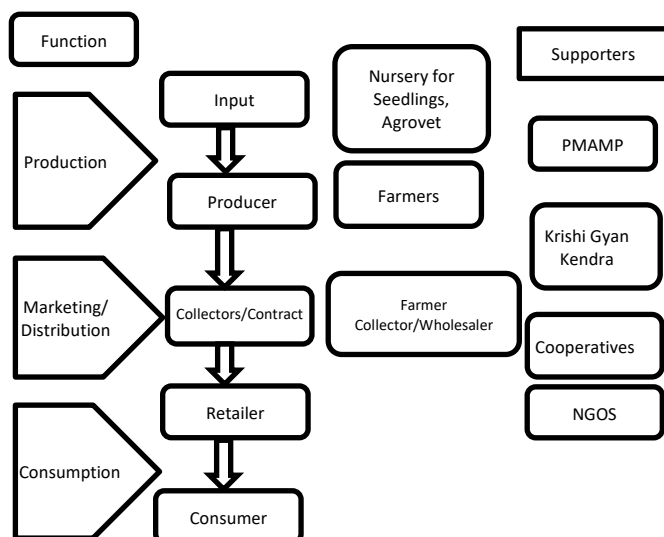

Figure 2: Existing value chain map of Jajarkot district

The Figure above shows actors their functions and supporting organizations in Jajarkot district. The Processing part was not found in value chain activities as processing was difficult due to poor storage and processing facilities. Equipment used in processing and storage were limited. Seedlings were supplied by farmers having nurseries of Dadagaun

and Damdala. They visited agro vets for equipment such as secature, saw, etc. And no inorganic and chemical fertilizers and pesticides were used. collectors were one of the farmers while contractors were wholesalers from district nearby. Supporters support by providing information and equipment.
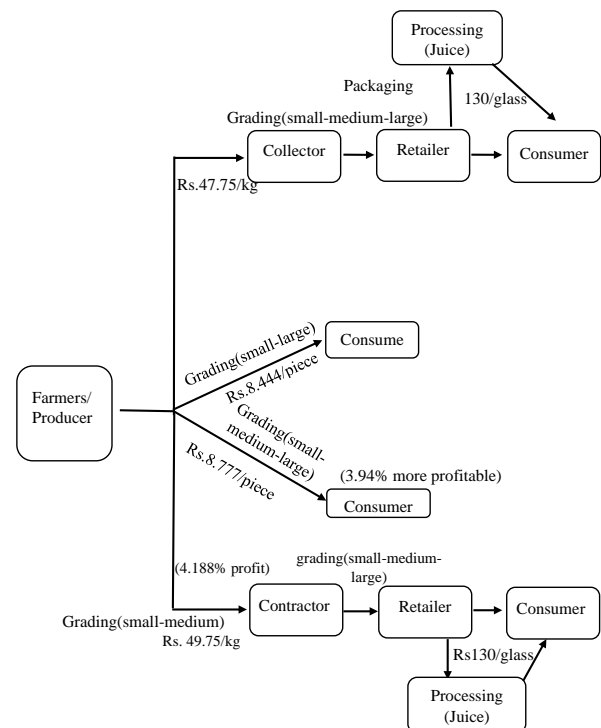

Figure 3: Value addition map of mandarin orange

The value adding activities in jajarkot were grading and packaging. Processing occurs at retailer level in Surkhet and Nepalgunj. Farmers used two types of grading pattern i.e. small-large and small-medium- large. Grading fetched 4.188% more profit than selling without grading while grading in pattern small-medium-large fetched 3.94% more profit than grading by small-large. Majority of respondents grade by pattern small-medium-large. Similarly processing fetched 60% more profit. Packaging materials were plastic carets, wooden basket, bamboo baskets, etc. Farmers used bamboo baskets while traders used plastic carets. Processing involves formation of fresh juice at retailer level.
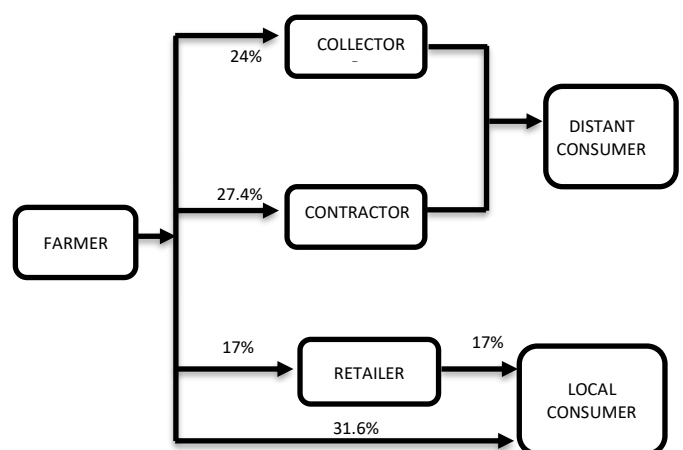

Figure 3: Volume mapping in Jajarkot district

The Figure shows major portion of produce was sold to local consumer directly or through retailer. Farmers sold 243 qtl. to local consumer which was 56.6% of total production. This shows most-used channel in Jajarkot was farmer to consumer. Farmers carried mandarin either on foot or using locally used animal (khacchad). Distant consumers were from Surkhet and Nepalgunj. The end markets of mandarin were Surkhet, Nepalgunj, Rukum, and Dolpa.
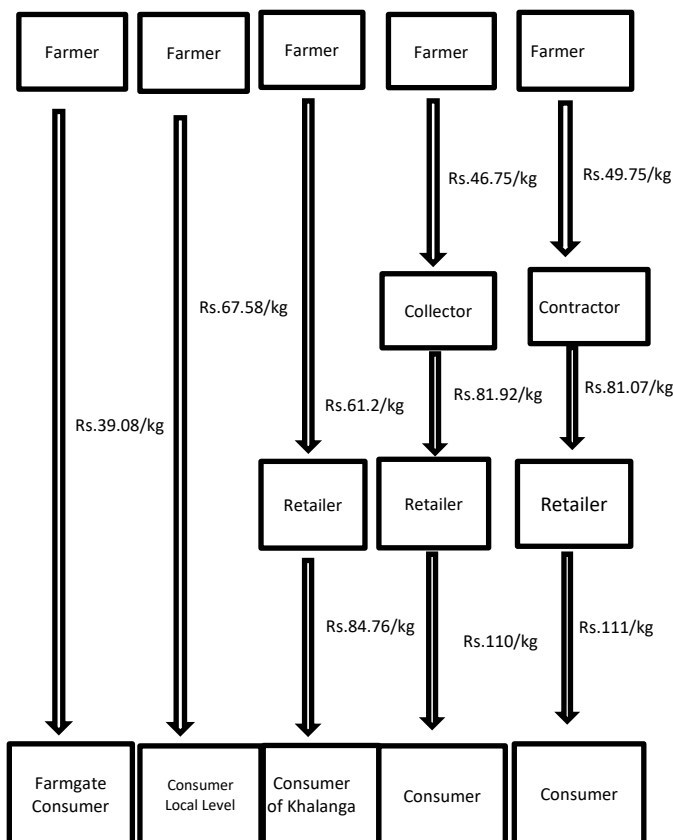
Figure 4: Market channels of Jajarkot district

There were 5 channels through which mandarin orange of Jajarkot flows from farmer to final consumer i.e. Channel 1 (farmer-farmgate consumer), channel 2 (farmer- local consumer), channel 3 (farmer-retailer- local consumer), channel 4 (farmer-collector-retailer-distant consumer), channel 5 (farmer-contractor-retailer-distant consumer). Farm gate price of mandarin was Rs. 39.08/kg. Mandarin was sold to collector and contractor at Rs. 46.75/kg and Rs.49.75/kg respectively. Price for distant consumer was found Rs. 110/kg- Rs.111/kg. Price for local consumer directly through farmers was Rs. 67.58/kg while price to local consumer through retailer was Rs.84.76/kg. it was found that increase in traders between farmers and consumers increases the price for consumer.

Table 2: Margin and market efficiency in different channels					
	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
Farmer net price (NRs/kg)	39.08	56.73	50.53	45.81	44.26
Price spread (%)			34.33	64.19	66.75
Producer share in consumer rupee (%)			40.39	58.35	60.13
Market margin (NRs/kg)			23.08	29.25	30.93
Market efficiency index (%)		4.88	1.45	1.95	1.49

It was found that less market margin was found on channel 3. This shows that less margin occurs in shorter channel. Highest market efficiency was obtained from channel 2 due to direct contact of farmers with local consumer. The Highest farmers' net price was also found on channel 2. It was found that most efficient market channel was channel 2 so the recommended channel is channel 2.
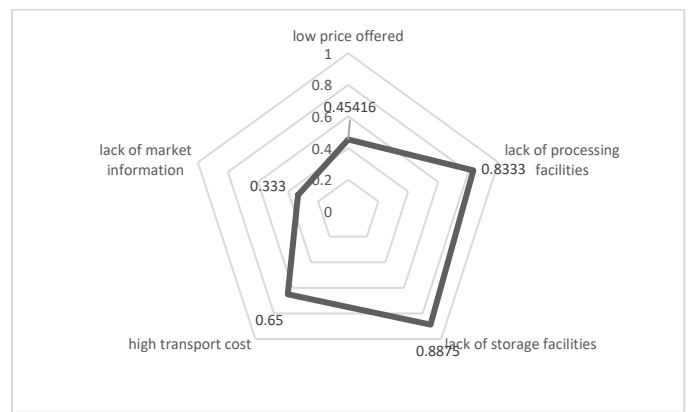

Figure 5: Problems faced during marketing

First ranked problem was poor storage facilities with index value 0.8875. since mandarin is perishable and seasonal commodity most promising problem was found storage followed by processing facilities

4. SWOT ANALYSIS

STRENGTHS	WEAKNESS
• Availability of suitable climate for mandarin production (south facing slopes and altitude of 1000MASL to 1800MASL) • Better quality due to juicier in nature. • Better reputation in organic production due to the organic district. • Agricultural Development Strategy has prioritized Jajarkot as citrus zone. • Agricultural Prospective Plan had prioritized citrus as high-value crop in mid hills. • Produce of Jajarkot has been sold to Surkhet and Nepalgunj.	• Scattered land and low production cause difficulty in commercial cultivation. • High transportation costs due to poor road facilities. • Poor knowledge on organic criteria and lack of organic certification. • Lack of storage and processing facilities. • Negligible role of farmers in decision of price due to poor market information and poor bargaining capacity. • High post-harvest loss and poor technical knowhow. • Lack of coordination among different actors of mandarin.
OPPORTUNITIES	**THREAT**
• Increase in demand of organic mandarin orange. • Better potential in export due to good quality character (juicy) • ADS has prioritized citrus in Jajarkot as a citrus zone. • Development of cellar storage and processing unit • High potential for value addition • Availability of different projects	• Incidence of insect pests and diseases • Limited coordination among actors of marketing. • Lack of market organization. • Political instability • Incidence of citrus decline • Labor crisis

5. VALUE GOVERNANCE

Trade of mandarin is governed by the contractors of districts nearby. There is no provision of advanced payment in contraction. Farmers were compelled to sell mandarin at traders and buyers' price. Overall, the value chain of mandarin in Jajarkot was buyer-driven.

6. DISCUSSION

It was found that mandarin contributed 67% in the annual income of respondents. The Contribution of mandarin was found nearly half (Miller,

2007). The average annual income was Rs.128500.00 which was similar (Gautam, 2011). Main buyer of mandarin in Jajarkot was consumer (36.7%). In contrast to this the main buyer was found wholesaler in (Oo, 2013). Majority of the volume of mandarin produced was sold to local consumer (56.6%). A similar result was found in (Shrestha, 2018). Mandarin was carried to market on foot or by khacchad (mule) due to poor accessibility of road but in mandarin was carried by truck due to good road access (Oo, 2013). Majority of respondents used radio as a source of information and the least used source was the newspaper. A similar result was found people were not using newspaper as a source of information (Pokhrel, 2011). Contract farming was found less (30%) in Jajarkot. Contractors from districts nearby contract at the time of harvesting. This result was found in contradiction with (Siddique and Garnevska, 2018). Large farmers in Jajarkot followed contract farming more and less contract farming was followed by small farmers. There was no free entry and exit of contractors for contraction. The case was found similar (Sharif and Farooq, 2005). This was the main reason which resulted in less commercialization of small farmers. Small farmers can be regulated for contract farming for better market affirmation as suggested by (Manbar, 2015). The Highest margin was obtained by collectors which deny with where the highest margin was obtained by retailers (Shrestha, 2018). The Least market margin was found in the shorter channel (farmer-retailer-consumer) which was similar (Kumar et al., 2015; sUllah et al., 2017). B/C ratio was found 2.56 in mandarin in Jajarkot. Slightly different ratio (2.6) from this result was found in (Pokhrel C. n., 2011). Market efficiency was found highest (4.88%) in channel farmer-local consumers. Some researchers also found the highest market efficiency in channel farmer-consumer (Kumar et al., 2015). The Poor storage facility was ranked 1st problem with an index value of 0.877. in other study, they also found poor storage and high marketing cost as marketing problem in Guava of Tanahun district (Kandel, 2007). In Jajarkot, trade was buyer-driven. A researchers said that poor market knowledge resulted in easily manipulation of farmers by traders which resulted in buyer-driven trade (sharma, 2006).

7. CONCLUSION

Value adding activities were grading and packaging only, Processing not was found. Grading fetched more price and hence more profit. Shorter the chain less was the margin. Highest market efficiency was found from farmer-local consumer channel. Major volume of mandarin was sold to local consumer. Poor storage and processing were major problems in marketing of mandarin. Trade was buyer driven and price decision was solely of traders. Backward linkage included farmer and nurseries (input suppliers) and forward linkage included farmer and collectors and retailers.

REFERENCES

Annpailine, D., 2014. A Study On Value Chain Of Banana In Tamilnadu. Tamilnadu Agricultural University.

Gupta, P.K. 2018. Value Chain Strategy Of Kinnow In Fazilka District Of Punjab. New Delhi: Foundation, National Agricultural Research And Development.

Kumar, S., Jain, S., Shakya, M.K., Kushwaha, S., 2015. To Study Different Marketing Channels. Marketing Efficiency And Problem / Constraints In Vegetable Marketing In Varanasi District, 5(5), 35–44.

Miller, C.S.L., 2007. Agricultural Value Chain Finance. Fao And Practical Action.

Moad. 2018. Statistical Information On Nepalese Agriculture (2073/74), 73, 290.

Oo, H.M., 2013. Value Chain Analysis Of Mandarin In Selected Areas Of Myanmar.

Pokhrel, Nath, C., 2011. Analysis Of Market Chain Of Mandarin In Nepal : A Case Of Lamjung District A Research Project Submitted To Analysis Of Market Chain Of Mandarin In Nepal : A Case Of Lamjung District.

Sharif, M., Farooq, U., And, W.M., 2005. Citrus Marketing In Punjab: Constraints And Potential... - Google Scholar. (Winter), 673–694. Retrieved From Https://Scholar.Google.Com.Pk/Scholar?Hl=En&As_Sdt=0%2c5&Q=Citrus+Marketing+In+Punjab%3a+Constraints+And+Potential+For+Improvement+Muhammad+Sharif%2c+Umar+Farooq%2c+And+Waqar+Malik&Btng=

Shrestha, D., 2018. Production Cost And Market Analysis Of Mandarin In Dhading District Of Nepal. Journal Of Agriculture And Environment, 16(June), 112–119. Https://Doi.Org/10.3126/Aej.V16i0.19844

Siddique, M.I., Garnevska, E., 2018. Citrus Value Chain(S): A Survey Of Pakistan Citrus Industry. Agricultural Value Chain. Https://Doi.Org/10.5772/Intechopen.70161

Ullah, R., Safi, Q.S., Ali, G., Ullah, I., 2017. Who Gets What? Citrus Marketing In Bunir District Of Pakistan. Sarhad Journal Of Agriculture, 33(3), Https://Doi.Org/10.17582/Journal.Sja/2017/33.3.474.479.