

An Economic Analysis of Cabbage Marketing in North Gujarat

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ABSTRACT

The present study analyzes marketing cost, margin, and price spread of cabbage crop in North Gujarat using a multistage random sampling design. The study covered 120 cabbage cultivators from 4 talukas and 12 Banaskantha and Sabarkantha districts. For marketing aspects, five functionaries from each category of cabbage marketing were randomly selected from Palanpur and Ahmedabad markets. The total marketed surplus of cabbage was observed to be 1210.56 quintals, and the significant share of 50.53 percent was sold through wholesalers-cum-commission agents, followed by wholesalers (29.01%), retailers (19.17%), and village merchants (1.37%) by cabbage growers. Among the different marketing costs borne by the grower, transportation cost ranked first, and for the wholesaler-cum-commission agent, commission charge was the highest. Among the various expenses of retailers, the maximum share was observed for spoilage. The total margin was higher at a retailers' level than a wholesaler, constituting 11.55 percent and 2.77 percent of consumers' prices, respectively. The marketing cost incurred by different functionaries was ₹ 210.18 per quintal of cabbage, accounting for 25.80 percent of the consumers' price. The producer's share was 59.87 percent of the price paid by cabbage consumers. It was suggested to sell cabbage to the direct consumers, malls, catering, etc., to have a higher share in consumer rupee.

Keywords: Cabbage, Marketing cost, Margin, Price spread, Direct sale

Vegetable provides high production within the short term, so it adopts small landholding in particular. It is an essential source of farm income for small and marginal farm households. It creates an impact on the agricultural development and economy of the country by providing a significant share in farmers' income.

Vegetables are a cheap source of minerals vitamins and with high-calorie values. There is a lot of demand for vegetables both for domestic for fresh and proceed products uses and export markets that can earn valuable exchange for India. Vegetables play a vital role in the human diet by balancing

and supplying essential natural elements. They are generally deficient in other food materials, except fruits. Vegetables are also sources of roughage, proteins, vitamins, carbohydrates, and minerals required for maintaining perfect health and curing nutritional disorders and hence provide variety and constitute an essential part of the balanced diet and make the means more delicious.

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Moreover, vegetables offer energy-rich food and promise a supply of protective nutrients. They adorn the dining table in an appealing salad, enrich health from the most nutritious menu, and tone up the energy and vigor of the mean. India's soil and agro-climatic conditions are appropriate for growing fruits and vegetables throughout the whole year. Apart from fruits, vegetables are the only protective food supplying all the nutrients and crude fibers.

Cabbage (*Brassica oleraceae var. capitata* L.) is one of India's most popular winter vegetable crops. Cultivation of such crops is remunerative under irrigated conditions, particularly during the *rabi* season, and gaining popularity among the vegetable growers of Gujarat state. The cabbage has originated from wild cabbage. The head cabbage was referred to too much late in the 16th century. It is mainly employed as a culinary and diet article. It is also used in curries, pickles, etc. It may be used for feeding stock and chicken also. Cabbage is used as salad, boiled vegetable as well as dehydrated vegetable.

Cabbage is one of the essential cruciferous vegetable crops in India. Cabbage cultivation has been considerably more remunerative than the other regular *rabi* crops in Gujarat. Cabbage cultivation is gaining popularity due to its short lifespan, easy cutting, and comparatively good returns. That's why, despite being perishable, small and marginal farmers adopt the cultivation of cabbage due to considering all factors. With the cultivation of cabbage crops, it is also essential to understand the cost and returns relationship. By knowing the cost and returns of cabbage, farmers can decide whether they are in benefit or not. The information on price and returns helps credit institutions determine the scale of finance for crop loans and repayment schedules. The information on the cost of cultivation/production and the efficiency of resources is also vital for the farmers to optimize the available scarce resources. Apart from this, marketing aspects of vegetables have their importance.

At present, market information of any crop, particularly economically viable, is taking more attention. Keeping this context, this study on 'An economic analysis of cabbage marketing in North Gujarat' was undertaken with the following specific objectives:

The objective of the study

- ♦ To estimate marketing cost and margin in cabbage.
- ♦ To compute price spread and marketing efficiency in cabbage marketing.

Methodology

Selection of study area and respondents

From North Gujarat, Banaskantha and Sabarkantha districts were chosen purposively. Then, two *talukas* from each section, i.e., Palanpur and Deesa from Banaskantha and Vadali and Prantij from Sabarkantha, were chosen based on the concentration of cabbage cultivation. After, three villages were selected randomly from each selected *taluka*. Hence, a total of 12 villages were chosen for the study. Further, ten cabbage growers were selected at random from each of the selected villages ensuring proportionate representation of the four strata, i.e., marginal: up to 1.00 hectare, small: >1.00 to 2.00 hectares, medium: >2.00 to 4 hectares and large: above 4.00 hectares). Thus, all 120 growers (43 marginal, 39 small, 21 medium, and 17 large) were the final sample for the study.

A sample of 5 functionaries of each type associated with cabbage marketing spread over two main markets, i.e., Palanpur and Ahmedabad, was selected to study the marketing channels, marketing cost, margin, and price spread.

Marketing cost, margin and price spread

The share of Producer and price spread, including marketing costs and margins of middleman in cabbage marketing, were worked out using the formulas Acharya and Agarwal (2003).

Producer's share in consumer's rupee

$$PS = \frac{PF}{PC} \times 100$$

Where,

PS = Producer's share in consumer's rupee

PF = Price of the produce received by the farmer

PC = Price of the produce paid by the consumer

Marketing margins

The total margin, including absolute and percentage margin of intermediaries involved in cabbage marketing, were estimated as under:

Absolute margin of i^{th} middleman = $PR_i - (PP_i + Cmi)$

Percentage margin of i^{th} middleman =

$$\frac{PR_i - (PP_i + Cmi)}{PR_i} \times 100$$

Where,

PR_i = Sale price of the i^{th} middleman

PP_i = Purchase price of the i^{th} middleman

Cmi = cost incurred on marketing by the i^{th} middleman

Total cost of marketing

The total marketing cost of farmers and intermediaries computed as:

$$C = CF + C_{m1} + C_{m2} + \dots C_{mn}$$

Where,

C = Total marketing cost

CF = Marketing cost of cabbage grower

C_{mn} = cost incurred by the i^{th} middleman in the marketing of cabbage

Modified measure of marketing efficiency (MME)

MME was computed by employing the following formula suggested by Acharya (2003).

$$MME = [RP / (MC + MM)] - 1$$

$$RP = FP + MC + MM$$

Where,

MME = Modified measure of marketing efficiency

RP = Prices paid by the consumer

MC = Total marketing costs

MM = Net marketing margins, and

FP = Pieces received by the farmer

The higher the ratio, the more marketing efficiency and vice-versa.

RESULTS AND DISCUSSION

Marketing cost, margin, price spread

Utilization pattern

Total production, utilization, and marketable surplus of cabbage on different-sized farms are presented in Table 1.

The Table 1 results showed that the total production of cabbage on sampled farms was 1241.30 quintals.

Table 1: Pattern of utilization of cabbage on the sample farms (Qty. in quintal)

Sl. No	Particulars	Category of farm				
		Marginal	Small	Medium	Large	Total
1	Total production	304.28 (100)	309.05 (100)	311.62 (100)	316.35 (100)	1241.30 (100)
	<i>Utilization</i>					
	(a) Home Consumption	0.30 (0.10)	0.27 (0.09)	0.25 (0.08)	0.26 (0.08)	1.08 (0.09)
	(b) Kind Payment	2.11 (0.69)	2.04 (0.66)	1.96 (0.63)	1.91 (0.60)	8.01 (0.65)
2	(c) Damage	3.37 (1.11)	3.28 (1.06)	3.24 (1.04)	3.25 (1.03)	13.13 (1.06)
	(d) Relatives	2.21 (0.73)	2.13 (0.69)	2.07 (0.67)	2.10 (0.66)	8.52 (0.69)
	Total (a to d)	7.99 (2.62)	7.71 (2.50)	7.53 (2.42)	7.52 (2.38)	30.74 (2.48)
3	Marketable Surplus	296.29 (97.37)	301.34 (97.50)	304.09 (97.58)	308.83 (95.05)	1210.56 (97.52)

Note: Figure in parenthesis indicate percent to total production.

The quantity utilized as damage accounted for 1.06 percent, for relatives (0.69 percent), kind payment (0.65 percent), and home consumption was 0.09 percent. The marketable surplus of cabbage varied from 95.05 percent on large farms to 97.58 percent on medium farms.

Agency-Wise Sale of Cabbage

The economic profitability of vegetable crops depends upon how the farmers undertake marketing activities. Channel through whom it is sold, place of sale, and time of sale are essential factors influencing the farmers' net price. The farmer's decisions regarding channel/agency for the purchase of cabbage are influenced by transportation facilities, distance and location of markets, price of the produce, transportation cost, marketable quantity, and economic conditions of the farmers.

The agency-wise sale of a total marketed surplus of cabbage is presented in Table 2.

The total marketed surplus of cabbage was observed to be 1210.56 quintals. Out of this, the major share

of 50.53 percent was sold through wholesalers-cum-commission agents, followed by wholesalers (29.01 percent), retailers (19.17), and village merchants (1.37 percent) by cabbage growers. So, cost, margin, and price spread were studied for a producer to wholesaler cum commission agent to the retailers to the producer. The quantity sold to wholesaler-cum-commission agents ranged from 60.03 percent on large farms to 43.43 percent on marginal cabbage farms.

Marketing cost incurred by the cabbage growers

Marketing charges paid by the cabbage growers for different components are furnished in Table 3.

The per quintal marketing cost of cabbage ranged from ₹ 20.91 on marginal farms to ₹ 17.88 on medium-sized farms. On the other hand, it was ₹ 19.72 on small and ₹ 18.00 on large-sized farms. Thus, the marketing cost was relatively more on smaller farms than larger farms. Moreover, the overall marketing cost for cabbage was ₹ 19.58 per quintal. Among the different marketing costs, transportation cost

Table 2: Disposal pattern of cabbage through different agencies (Qty. in quintal)

Marketing Agency	Category of farm				
	Marginal	Small	Medium	Large	Total
Wholesaler- cum-commission agent	128.69 (43.43)	141.66 (47.01)	155.95 (51.28)	185.39 (60.03)	611.69 (50.53)
Wholesaler	65.55 (22.12)	97.25 (32.27)	92.11 (30.29)	96.29 (31.18)	351.20 (29.01)
Retailer	94.08 (31.75)	59.85 (19.86)	53.36 (17.55)	24.75 (8.01)	232.04 (19.17)
Village Merchant	7.97 (2.69)	3.51 (1.17)	2.67 (0.88)	2.41 (0.78)	16.56 (1.37)
Total Marketable Surplus	296.29 (100.00)	301.34 (100.00)	304.09 (100.00)	308.84 (100.00)	1210.56 (100.00)

Note : Figure in parentheses indicate per cent to total marketed surplus.

Table 3: Marketing cost incurred by the cabbage growers (₹/ Quintal)

Particulars	Category of Farm				
	Marginal	Small	Medium	Large	Overall
Weighing Cost	2.00 (9.57)	1.94 (9.82)	1.64 (9.20)	1.71 (9.48)	1.88 (9.57)
Cleaning and Grading	0.95 (4.56)	1.40 (7.11)	1.01 (5.60)	1.06 (5.88)	1.12 (5.74)
Packing Charges	4.15 (19.86)	3.96 (20.09)	3.29 (18.19)	3.41 (18.95)	3.83 (19.58)
Loading and Unloading Charges	4.36 (20.86)	4.03 (20.41)	3.69 (20.43)	3.82 (21.24)	4.06 (20.72)
Transportation Cost	7.08 (33.87)	6.18 (31.33)	6.18 (34.18)	6.03 (33.50)	6.48 (33.11)
Damage and other cost	2.36 (11.29)	2.22 (11.25)	2.07 (11.59)	1.97 (10.95)	2.21 (11.28)
Total Marketing Cost	20.91 (100.00)	19.72 (100.00)	17.88 (100.00)	18.00 (100.00)	19.58 (100.00)

Figures in parentheses indicate the percentage to the total.

ranked first with 33.11 percent, followed by loading and unloading cost, packing charges, damage and another cost, weighing charge and cleaning amount which accounted for about 20.72 percent, 19.88 percent, 11.28 percent, 9.57 and 5.74 percent, respectively.

Marketing cost incurred by wholesaler-cum-commission agent

The marketing costs incurred by wholesaler-cum-commission agents in cabbage marketing are depicted in Table 4. The table revealed that the total marketing cost borne by wholesaler-cum-commission agent for cabbage was ₹ 77.70 per quintal. Among the total cost components, commission charge accounted for about 37.97 percent of total marketing cost, followed by spoilage (19.18 percent), loading and unloading cost (14.80 percent), cleaning and grading cost (8.24 percent), packing cost (7.34 percent), the market fee (5.79 percent), miscellaneous (4.12 percent) and weighing charges (2.57 percent). It can be seen that the higher marketing cost might be due to higher commission costs incurred by the wholesaler as a buyer while buying from distance markets.

Table 4: Marketing cost incurred by wholesaler-cum-commission agent

Sl. No.	Particulars	Cost (₹/qtl.)	Per cent to total cost
1	Cleaning and Grading	6.40	8.24
2	Weighing Charges	2.00	2.57
3	Loading and unloading Charges	11.50	14.80
4	Packing charges	5.70	7.34
5	Market fee	4.50	5.79
6	Commission charges	29.50	37.97
6	Spoilage	14.90	19.18
7	Miscellaneous	3.20	4.12
Total marketing cost		77.70	100.00

Marketing costs incurred by retailers

In general, retailers purchase vegetables from wholesaler-cum-commission agents and wholesalers in APMC and sell them to consumers through their retail shops. The results on marketing costs for cabbage incurred by retailers are presented in Table 5.

Table 5: Marketing cost incurred by retailers

Sl. No.	Particulars	Cost (₹/qtl.)	Per cent to total cost
1	Loading and unloading Charges	5.60	4.96
2	Transportation cost	31.00	27.46
3	Packing cost	15.30	13.55
4	Spoilage	48.50	42.96
5	Miscellaneous cost	12.50	11.07
Total marketing cost		112.90	100.00

Retailers incurred ₹ 112.90 as total marketing cost per quintal. The maximum share was observed for spoilage among different expenses, *i.e.*, 42.96 percent of marketing costs. The other vital components were the cost of transportation (27.46 percent), packing (13.55 percent), miscellaneous cost (11.07 percent), and the cost of loading and unloading (4.96 percent) to the total marketing cost of retailers.

Total cost and net returns from Cabbage

The cost of production, marketing, sale price, and net returns per quintal from cabbage are presented in Table 6.

The overall per quintal cost of cabbage production was observed to be ₹ 266.83. It ranged from ₹ 259.56 per quintal on large farm groups to 268.35 on medium-sized groups. Thus, the total cost, which includes the cost of production and marketing incurred by cabbage producers, was ₹ 286.41 per quintal.

Further, the overall net return was ₹ 220.86 per quintal. However, it varies from ₹ 213.30 per quintal on the marginal farm to ₹ 239.09 on a large farm. It shows that higher landholders got higher returns than smaller landholders. The reason was that the large farmers sold their marketable surplus in distant markets, where they realized higher prices.

Cost, margin, and price spread in the marketing of Cabbage

Price spread includes the cost of different marketing activities and margins of various functionaries associated with the marketing process. The extent of price spread helps policymakers devise suitable policies for increasing marketing efficiency either

Table 6: Cost of production, marketing cost and net returns from cabbage (₹/qtl)

Sl. No.	Category of Farm	Total cost of Production	Marketing cost	Total cost*	Sale price	Net return
1	2	3	4	5 (3+4)	6	7 (6-5)
1	Marginal	266.79	20.91	287.70	501.00	213.30
2	Small	267.61	19.72	287.33	507.77	220.44
3	Medium	268.35	17.88	286.23	511.57	225.34
4	Large	259.56	18.00	277.56	516.65	239.09
5	All Farm	266.83	19.58	286.41	507.27	220.86

Table 7: Cost, margin and price spread in marketing of cabbage

Sl. No.	Particulars	₹/qtl.	Per cent to Consumer's Price
1	Producer's net price	487.69	59.87
2	Cost incurred by		
	(a) Producer	19.58	2.40
	(b) Wholesaler-cum-commission agent	77.70	9.54
	(c) Retailer	112.90	13.86
	Total	210.18	25.80
3	Margins of		
	(b) Wholesaler-cum-commission agent	22.54	2.77
	(c) Retailer	94.10	11.55
	Total	116.64	14.32
4	Price spread (cost + margins)	326.82	40.13
5	Retailer's sale price/ consumer's purchase price	814.51	100.00
6	Producer's share in consumer's rupee (%)	59.87	

by reducing the marketing costs or eliminating unwanted marketing intermediaries from the process by both. The marketing costs, margins, and price spread in cabbage marketing through significant channels have been presented based on the data collected from farmers and market functionaries. The channels identified in the study area were,

- ♦ Channel I: Producer- Local Merchants- Consumers
- ♦ Channel II: Producer- Wholesaler-cum-Commission Agent-Retailer - Consumer
- ♦ Channel III: Producer-Wholesaler-Retailer-Consumer

On average, about 59.53, 39.18, and 1.37 percent of total cabbage moved in the studied area through Channel II, III, and I, respectively. Thus, more than 50 percent of cabbage moved from producer to wholesaler-cum-commission agent to retailers to the

consumer. As such, cost, margin, and price spread were studied for channel II only. The costs incurred and margins earned by various market functionaries and price spread in the marketing of cabbage through Channel II are given in Table 7.

The total margin earned by different functionaries was ₹ 116.64 per quintal. It was higher at retailers' level (₹ 94.10 per quintal) than wholesaler (₹ 22.54 per quintal), constituting 11.55 percent and 2.77 percent of consumer's price, respectively.

The marketing cost incurred by different functionaries was ₹ 210.18 per quintal of cabbage, accounting for 25.80 percent of the consumers' price. Out of total marketing cost, the highest cost (13.86 percent) was incurred by retailers, followed by wholesaler-cum-commission agent (9.54 percent) and producers (2.40 percent). Further, it was observed from the table that the producer's share was 59.87 percent of the price paid by cabbage consumers.

In the case of vegetables, lack of proper storage facilities at reasonable charges and unorganized marketing system in the study area resulted in higher retailer's margin and a higher proportion of marketing cost. The results are in similar to the findings of Jadav *et al.* (2011), Kumar *et al.* (2008), and Prasad (2001).

Marketing efficiency

The efficiency of marketing for agricultural produce, in general, is assessed by the size of share which producer-farmer obtains in the price paid by the consumer. These results were further substantiated by working out market efficiency, as Acharya (2003) suggested. The marketing efficiency for cabbage has been worked out by considering Acharya's modified formula, and the results are presented in Table 8.

Table 8: Marketing efficiency of cabbage

Sl. No.	Particulars	Cabbage
1	Consumer's price (₹/qtl.)	814.50
2	Producer's net price (₹/qtl.)	487.69
3	Marketing cost (₹/qtl.)	210.18
4	Marketing margin (₹/qtl.)	116.64
5	Marketing efficiency	1.49

In the case of cabbage, the total marketing cost and marketing margins involved in the selected marketing channel (Channel II) was Rs 326.82 per quintal. The modified marketing efficiency was higher than unity (1.49).

CONCLUSION

Out of total marketed surplus, the major share was sold through wholesalers-cum-commission agents, followed by wholesalers, retailers, and village merchants by cabbage growers. The marketing

cost was relatively more on smaller farms than larger farms. Among the different marketing costs, transportation cost ranked first with 33.11 percent, followed by loading and unloading, packing charges, damage and other costs, weighing charges, and cleaning charges. The marketing cost on commission charge was the highest for wholesalers cum commission agents. The higher marketing cost might be due to higher commission costs incurred by wholesalers as buyers while buying from distance markets. Among different expenses borne by the retailer, the maximum share was observed for spoilage, *i.e.*, 42.96 percent to the total marketing cost. It is also seen that higher landholders got higher returns than the smaller landholders. The reason was that the large farmers sold their marketable surplus in distant markets, where they realized higher prices. More than 50 percent of cabbage moved from producer to wholesaler-cum-commission agent to consumers. It was observed that the producer's share was 59.87 percent of the price paid by cabbage consumers. The modified marketing efficiency was higher than unity (1.49). It was suggested to sell cabbage to the direct consumer, malls, catering, etc., to have a higher share in consumer rupee.

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