AN EMPIRICAL APPRAISAL OF PRODUCTION AND MARKETING CHANNEL OF VEGETABLE IN DISTRICT MIRZAPUR (UTTAR PRADESH), INDIA

Shiv Mangal Yadav*, Yogesh Yadav, Soni Yadav[1] and Ajit Kumar[2]

Department of Agril. Economics, C.C.S. (P.G.) College, Heonra-Saifai, Etawah - 206 130 (U.P.), India.
[1]K. M. Degree College, Mirzapur (U.P.), India.
[2]K.V.R., Purniya (Bihar), India.

Abstract

India is the second largest vegetable producer in the world next to China. In year 2007-08 the total production of vegetable was 108.50 millions tonnes with area of 17.2 million hectare, which was 94.3 millions tonnes in year 2006-2007, with area of 16.95 million hectare. India rank first position in production of vegetable pea and cauliflower while, it have second position in production of onion, cabbage tomato and brinjal. In case of potato production, India has forth position in the world.

Vegetables are grown under varied agro-climatic ecological condition in India. The acclimatization and adoption of vegetable crops crop have affected socio-economic and nutritional status of the masses. Vegetable occupy predominant place in human diet, because it is the cheapest source of nutritional protective diet. In India, vegetable constitutes 8-10 per cent of the total food intake, which is very low as compared to United States and Japan. Vegetables are rich and comparatively cheap source of vitamins and minerals, their consumption is palatable, tasty optimization promotes and helps in protecting against some degenerative diseases. Besides this vegetable play the role in neutralising the acids produced during digestion of protein and fatty foods. The presence of large amount of roughages in them promotes digestion and prevents constipation.

Key words : Empirical appraisal, production, marketing channel.

Introduction

Vegetable have become integral part of the balanced diet in all sections of the society. A wide range of them can be grown in different seasons of the year. The recommended vegetable consumption per capita per day is 300 gm, but the availability per capita per day is only around 145 gm in our country. Even this low level does fully reflect the consumption pattern of rural house hold of these below poverty line.

The per capita consumption level is mainly low due to the low productivity level in vegetable crops. India has made tremendous progress towards increasing the vegetable production still much efforts to be done to meet the recommended dietary allowance for country people.

However, vegetable farming needs more intensive use of labour and irrigation facilities as compared to other cops but more remunerative at the same time. The farmer around cities and towns attach significant importance to

the vegetable in their cropping pattern, and these farmers enjoy significantly large economic advantage as compared to non-vegetable crops due to the readily available market, quick and regular returns from investment. There is an added advantage in vegetable production that higher income is obtained in a much shorter time, two to three successful crops can be grown on the same piece of land. The economic studies were centred on the general crops in the past and there is capacity of economic research to on farm vegetable farming. There is also a great demand of vegetable in the local market as well as district level market. Therefore, it would be of great important to find out the cost and returns of vegetable production. To access resource use efficiency in production is also of great important as it makes clear the efficiency of various resources used in production of selected vegetable crops. Thus, the analysis of cost and returns would be also helpful in allocating the competing resources for maximum possible returns. The marketing assumes significant important to the farmers for higher

income from the vegetable cultivation, if a grower wants to make profitable production, they must produce good quality of vegetable to the consumer with specified market needs. Thus, grower decision to cultivate varieties of vegetable would largely depend upon the demand and the preference of the consumers prevailing in the market. For this knowledge of the grower mention a close contact with the consumer to see their attitude and willingness to pay for market costs and margins is useful for both sellers and consumers. A reference to the marketing cost and margins would show whether or not the services of intermediaries are provided at reasonable costs. More ever, the study of marketing margins can be used to fix marketing functionaries and to judge to efficiency of marketing system. There is great variation in price from initial period to peak period affecting marketing cost and margins and the producer share in consumer rupees and ultimately affecting the farmers income.

Materials and Methods

An efficient marketing system is a prerequisite for sustaining the tempo of increased agricultural production. This ensures fair returns to the farmers for their efforts. The economic efficiency of the marketing system is generally measured in terms of the price-spread of an agricultural commodity. The smaller the price-spread, the greater the efficiency of the marketing inputs as storage and transportation, changes with the shifts in the demand for, and/or in the supply, of the product.

The term price-spread has been variously defined and understood according to its usage. Generally, it refers to the difference between the two prices, i.e., the price paid by the consumer and the price received by the producer. A study of the price-spread involves not only the ascertainment of the actual process at various stages of the marketing channel, but also the costs incurred in the process of the movement of the produce from the farm to the consumer and the margin of various intermediaries.

The following illustrations show the method of calculating the price-spread in foodgrain marketing.

Results and Discussion

Case I

A farmer, Mr. Bhura (B) comes to Krishi Upaj Mandi, Mirzapur (regulated market) with 100 bags of vegetable (each weighing 100 kg. net). He takes the produce to M/s Jain Brothers (J), a commission agent. Immediately on arrival, Mr. Bhura request to M/s Jain Brothers to make payment on his behalf to the truck-owner for transporting the produce and for octroi charges. The produce is unloaded from the truck by licensed labourers, who are paid by the commission agent on behalf of the farmer. The produce is unloaded from the truck by licensed labourers, who are paid by the commission agent on behalf of the farmer. The produce is put on the auction plate form and the farmer takes his empty gunny bags. The rates of payments made so far by the commission agent, on behalf of the farmer are :

(i)   Transportation charges   @ Re. 0.50 per bag
(ii) Octroi   @ Re. 0.25 per bag
(iii) Labour for unloading   @ Re. 0.25 per bag

Now the produce is auctioned and wholesaler, M/s Mool Chand Sagar Mal, purchases this lot at a price of Rs. 460.00 per quintal. The commission agent makes the payment to the farmer at the rate of Rs. 460 per quintal after the deductions shown in (i), (ii) above, which are to be borne by the farmer. The farmer returns home.

Meanwhile, the wholesaler, M/s Mool Chand Sagar Mal has decided to send this lot to Mirzapur market in a hired truck. This wholesaler pays for following items in Dausa market:

(iv) Cost of gunny bags   @ Rs. 5.00 per bag
(v) Labour charges for filling @ Re. 0.20 per bag
     and stitching bags
(vi) Weighing   @ 0.25% of the value of
                               the produce
(vii) Commission to the   @ 1% of the value of
      commission agent   the produce
(viii) Market fee to the market @ 1% of the value of the
       committee   produce
(ix) Labour charges for loading @ Re. 0.25 per bag
     the bags into the truck
(x) Truck transport charges   @ Rs. 1.50 per bag
                               (Dausa to Jaipur)

After arriving in Mirzapur market, the wholesaler, M/s. Mool Chand Sagar Mal, pays for the following items:

(xi) Labour charges for   @ Re. 0.25 per bag
     unloading
(xii) Octroi   @ Re. 0.25 per bag

The unloading in Mirzapur is done at the shop of a commission agent; through him, this lot is sold to M/s. Daulat Chand & Co. @ Rs. 485 per quintal. The empty gunny bags are also sold @ 4.00 per bag. The commission agent collects the following amounts from the buyer (*i.e.*, M/s. Daulat Chand & Co):

(xiii) Commission   @ 1% of the value of
                               the produce

(xiv) Market fee (to be paid to the market committee, Mirzapur) @ 1% of the value of the produce

(xv) Weighing charges @ 0.4% of the value of the produce

M/s/ Daulat Chand & Co. take the produce to his shop and while doing this, he incurs the following expenses:

(xvi) Labour charges for transporting the produce to his shop @ Re. 0.50 per bag

Now M/s. Daulat Chand & Co. sells wheat to consumers @ Rs. 515 per quintal, together with the gunny bags, for which an extra charge of Rs. 3.00 per bag is realised.

It has been assumed that there is no physical loss during the handling of the produce and that no significant time elapses between various transactions.

Given this information, the marketing costs, the marketing margins and the price-spread in the marketing of wheat may be worked out as follows:

Marketing Costs
(a) Incurred by the Farmer, Mr. Bhura

Particulars	Quantity (bags)	Rate (Rs./bag)	Amount (Rs.)
(i) Transport charges	100	0.50	50.00
(ii) Octroi	100	0.25	25.00
(iii) Labour charges for unloading	100	0.25	25.00
Sub Total (a)			**100.00**

b. Incurred by the Wholesaler, M/s. Mool Chand Sagar Mal of Dausa Market

Particulars	Quantity (bags)	Rate (Rs./bag)	Amount (Rs.)
(iv) Cost of gunny bags (Rs. 5-4) (his purchase price minus sale price)	100	1.00 per bag	100.00
(v) Labour charges for filling and stitching of bags	100	0.20 per bag	20.00
(vi) Weighing charges	Rs. 46,000 worth of produce	0.25% of the value	115.00
(vii) Commission	"	1% of the value	460.00
(viii) Market fee	"	1% of the value	460.00
(ix) Labour charges for loading on to truck	100	0.25 per bag	25.00
(x) Truck transportation from Dausa to Mirzapur	100	1.50 per bag	150.00

Particulars	Quantity (bags)	Rate (Rs./bag)	Amount (Rs.)
(xi) Octroi at Jaipur	100	0.25 per bag	25.00
(xii) Labour charges for unloading from the truck at Mirzapur	100	0.20 per bag	20.00
Sub Total (b)			**1375.00**

(c) Incurred by M/s. Daulat Chand and Co. of Mirzapur

Particulars	Quantity (bags)	Rate (Rs./bag)	Amount (Rs.)
(xiii) Cost of gunny bags (Rs. 4-3)	100	1.00	100.00
(xiv) Commission on value of the produce	Rs. 48,500 worth of the produce	1% of the value	485.00
(xv) Market fee at Mirzapur	"	1% of the value	485.00
(xvi) Weighing charges	"	0.4% of the value	194.00
(xvii) Transport charges from market to his shop	100	0.50 per bag	50.00
Sub Total (c)			**1314.00**

Total marketing cost (a +b + c) = Rs. 2789.00

Profits or net margins of traders

Profit of a trader = Receipts (sale value) minus purchase value minus cost incurred

$$A_{mi} = P_{ri} - (P_{pi} + C_{mi})$$

Profit (net margin) of M/s. Mool Chand Sagar Mal of Dausa (in Rs.)

$$= Rs. (485 \times 100) - (Rs. 460 \times 100) - (Rs. 1375.00)$$
$$= 48,500 - 46,000 - 1375.00 = Rs. 1125$$

Profit or net margin of M/s. Daulat Chand & Co. of Mirzapur (in Rs.)

$$= Rs. (515 \times 100) - (Rs. 485 \times 100) - (Rs. 1314.00)$$
$$= 51,500 - 48500 - 1314.00 = Rs. 1686$$

Total margins for both traders = Rs. 1125 + Rs. 1686 = Rs. 2811

Price received by the farmer

Gross price received Rs. 460.00 per quintal

Cost borne by the farmer @ Re. 1.00 per quintal (Rs. 100 for 100 quintals).

Net price received $(P_F) = P_A - C_F$

$$= 460.00 - 1.00 = Rs. 459.00 \text{ per quintal}$$

or

$$46,000 - 100 = Rs. 45,900 \text{ for 100 quintals.}$$

Price-Spread

The price-spread is as follows:

Particulars	Gross for whole lot of 100 quintals (Rs.)	Per quintal (Rs.)	Per cent share in the price paid by the consumer
Farmer's share or net receipt of the farmer	45,900	459.00	89.12
Marketing Cost	2,789	27.89	5.42
Marketing margins-(total for both traders) net profit retained by them after meeting their costs	2,811	28.11	5.45
Price paid by the consumer	51,500	515.00	100.00

Case II

A farmer Mr. Ramu, comes to Krishi Upaj Mandi Samiti, Bathua, with 750 bags of vegetable each weighing 100 kg net. He takes the produce to M/s. Mehta Brothers-a commission agent. Mr. Ramu requests his commission agent to make the following payments on his behalf.

(i)   To truck-owner for transporting the wheat — @ Re. 0.50 per bag

(ii) Octroi charges — @ Re. 0.25 per bag

(iii) To labourers for unloading the produce from is the trucks — @ Re. 0.20 per bag

Now the produce is auctioned and a wholesaler, M/s. Phool Chand Ganga Ram, purchases the produce at a price of Rs. 450.00 per quintal. The commission agent makes the payment to the farmer after deducting the expenses on items (i), (ii) and (iii) above. The wholesaler incurs the following expenses in the purchase of wheat at Bathua market:

(iv) Cost of the gunny bags — @ Rs. 5.00 per bag

(v) Sales tax — @ 2% of the value of produce

(vi) Labour charges for filling and stitching of bags — @ Re. 0.40 per bag

(vii) Commission — @ 1% of the value of the produce

(viii) Market fee to the market committee — @ 1% of the value of the produce

(ix) Weighing — @ 0.3% of the value of the produce

The wholesaler decides to transport this vegetable to the secondary wholesale market at Mirzapur by rail and incurs the following expenses :

(x)   Cartage to station at Bathua — @ Re. 0.50 per bag

(xi) Railway freight (for the whole lot) — @ Rs. 200.00

(xii) Octroi at Mirzapur — @ Re. 0.25 per bag

(xiii) Loading and unloading charges — @ Re. 0.25 per bag

(xiv) Cartage at Mirzapur — @ Re. 0.30 per bag

The vegetable of the wholesaler, M/s. Phool Chand Ganga Ram, is sold to a retailer, M/s. Padam & Co. of Mirzapur, through his commission agent @ Rs. 480.00 per quintal. The empty gunny bags are purchased by the retailer @Rs. 4.00 per bag. The commission agent collects the following amounts from the buyer (M/s. Padam & Co.):

(xv) Commission — @ 1.25% of the value of the produce

(xvi) Labour charges for unloading — @ Re. 0.20 per bag

(xvii) Weighing charges — @ 0.30% of the value of the produce

(xviii) Market fee — @ 1% of the value of the produce

M/s. Padam & Co. takes the produce to his shop in his own truck and sells its to consumers @ Rs. 500 per quintal. The empty bags are disposed of by him @ Rs. 3.00 per bag in the market. For the sake of simplicity, it has been assumed that there is no loss in transit and no significant time lag.

Given this information- producer's price, producer's rupee, absolute margin of he wholesaler and retailer, and marketing costs incurred by producer, wholesaler and retailer; and price spread can be worked out as follows:

Marketing Costs

(a) Cost incurred by the farmer (since the farmer had no money, commission agent paid these and deducted then from the payment made to the farmer)

S.No.	Particulars	Quantity (bags)	Rate/bag (Rs.)	Amount (Rs.)
(i)	Transportation cost	750	0.50	375.00
(ii)	Octroi	750	0.25	187.50
(iii)	Labour charges	750	0.20	150.00
	Sub Total (a)			**712.50**

(b) Cost incurred by the wholesaler, M/s. Phool Chand Ganga Ram, at Bathua and Mirzapur markets.

S. no.	Particulars	Quantity/ value (bags)	Rate/bag (Rs.)	Amount (Rs.)
(iv)	Cost of gunny bags (purchase price minus sale price)	750	1.00	750.00
(v)	Sales tax on value	Rs. 3,37,500 (750 × 450)	2% of the value	6750.00
(vi)	Labour charges for filling and stitching of bags	750	0.40/bag	300.00
(vii)	Commission	Rs. 3,37,500	1% of the value	3/375.00
(viii)	Market fee	"	1% of the value	3,375.00
(ix)	Weighing charges	Rs. 3,37,500	0.3% "	1,012.50
(x)	Cartage at Bathua	750 bags	0.50/bag	375.00
(xi)	Railway freight (total)	750 bags	–	200.00
(xii)	Octroi at Mirzapur	750 bags	0.25/bag	187.50
(xiii)	Loading and unloading charges at Mirzapur	750 bags	0.25/bag	187.50
(xiv)	Cartage at Mirzapur	750 bags	0.30/bag	225.00
	Sub Total (b)			**16,737.50**

(c) Cost incurred by the retailer, M/s. Padam & Co.

S. no.	Particulars	Quantity/ value (bags)	Rate/bag (Rs.)	Amount (Rs.)
(xv)	Commission	Rs. 3,60,00 (750 × 480 = 3,60,000)	1.25% of value	4,500.00
(xvi)	Market fee	"	1% of value	3,600.00
(xvii)	Weighing charges	"	0.3% of value	1,080.00
(xviii)	Labour charges	750 bags	0.20/bag	150.00
(xix)	Cost of gunny bags (purchase price minus sale price)	750 bags	1.00/bag	750.00
	Sub Total (c)			**10,080.00**

Total marketing costs (a + b + c) = Rs. 27,530.00

Marketing margins

(a) Margin of wholesaler (M/s. Phool Chand Ganga Ram)

$$= P_{ri} - (P_{pi} + C_{mi})$$
$$= (750 \times 480) - (750 \times 450) - 16737.50$$
$$= Rs. 5,762.50$$

(b) Margin of retailer (M/s. Padam & Co.)

$$= P_{ri} - (P_{pi} + C_{mi})$$
$$= (750 \times 500) - (750 \times 480) - 10080.00$$
$$= Rs. 4,920.00$$

Producer's price

$$P_A = P_F - C_F$$
$$= (750 \times 450) - 712.50$$
$$= Rs. 336787.50 \text{ for } 750 \text{ quintals.}$$
$$= Rs. 449.05 \text{ per quintal.}$$

Producer's Share in Consumer's Rupee

$$P_S = (P_F \div P_R) \, 100$$
$$= (449.05 \div 5000) \, 100 = 89.81 \text{ per cent.}$$

Price – Spread

The price-spread in this case is as follows :

Particulars	Gross for whole lot of 750 quintals (Rs.)	Per quintal (Rs.)	Per cent share in the price paid by the consumer
Farmer's share	336,787.50	449.05	89.81
Marketing costs	27,530.00	36.71	7.34
Marketing margins of both the traders	10,682.50	14.24	2.85
Price paid by the consumers	375,000.00	500.00	100.00

Conclusion

Price-spread studies conducted both at micro and macro level present enormous difficulties and hence results are not comparable both overtime and space. Some of the difficulties are:

(i) There is considerable regional variation in prices of commodities. Further, the varieties grown and marketed in different regions are not comparable.

(ii) Price of commodities are not correlated to the recognized quality standards and, therefore, not comparable.

(iii) The number of intermediaries between the producer and the ultimate consumer or the length of the marketing channel varies from area to area.

(iv) The authentic data of prices paid by various intermediaries do not maintain the accounts. Even if they maintain, access of researchers to such records is impossible.

(v) There are divergent methods of handling and transportation followed in different regions which results in large variation in marketing costs, margins and price-spread across commodities and regions.

References

Acharya, S. S. (2001). Domestic Agricultural Marketing Policies, Incentives and Integration, in the Indian Agricultural Policy at Crossroads, Ed. by S.S. Acharya and D.P. Chaudhiri, Rawat Publications, pp. 129-205.

Acharya, S. S. (1988). Agricultural Production, Marketing and Price policy in India, Mittal publications, Delhi.

Baulch, B. (1997). Transfer Costs, Spatil Arbitrage and Testing Food Market Integration. *Amercian Journal of Agricultural Economics*, **79** : 477-87.

Chand, Ramesh (2002). Government intervention in Foodgrain Markets in the New Context, A Report prepared for Union Ministry of Consumers Affairs, Food and public Distribution, National Centre for Agricultural Economics and Policy Research, New Delhi, September, 2002.

Ravallion, M. (1986). Testing Market Integration. *American Journal of Agricultural Economics*, **68** : 102-109.

Ravallion, M. (1987). *Markets and Famines*, Clarendon Press, Oxford.