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ECONOMICS OF PRODUCTION AND MARKETING OF VEGETABLES IN AKOLA DISTRICT

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Abstract

Present investigation was under taken to study the study economics of vegetable production and price spread in marketing of vegetables. The study was based on Primary data for the year 2008-09 collected from different villages of different tahsils in Akola district of Maharashtra. Where vegetable cultivation is concentrated. The study revealed that overall area covered by vegetables in kharif 0.63 ha in rabi 0.64 ha and in summer 0.19 ha on the overall average of farms in gross cropped area which contributes 12.52 per cent in kharif, 12.72 per cent in rabi and 3.79 per cent in summer. The overall cost of cultivation per hectare for brinjal, cauliflower, cabbage, onion and capsicum was estimated Rs. 82625.68, Rs. 68870.62, Rs. 64896.5, Rs. 83673.09 and Rs. 137638.8, respectively. Cost A is the direct expenses by the cultivators and much important from the cultivators point of view and the same was worked out to Rs. 29599.74, Rs. 20239.34, Rs. 19268.41, Rs. 30007.35, Rs. 60518.86 for brinjal, cauliflower, cabbage, onion and capsicum, respectively.

Keywords: *price spread, vegetable production and Akola.*

Introduction

India is the second largest producer of vegetables in the world next to China. Indian vegetables improvement programme has a short history. It started with first successful attempt of production of seeds of temperate vegetables in Quetta (now in Pakistan) in 1940 followed by a similar achievement in Kashmir and Kullu Valley of Himachal Pradesh. However, this got a setback owing to the short supplies of seeds from abroad during the Second World War.

During 2005-2006 in India area and production of vegetables was 71.64 lakh ha and 1090.50 lakh mt. In Maharashtra it was 4.03 lakh ha and 48.09 lakh million tonnes and in Akola district it is 11496 (ha) and 50769 (tonnes) respectively (www.apeda.com). During 2007-2008 area of vegetables in India is 7807.5 thousand ha. and production is 125919.6 mt. (www.apeda.com) and share percentage of vegetable in world 9.22% in 2003 (FAO) .Rank of India in cauliflower production is first, the botanical name is *Brassica oleracea* L. var *botrytis* and in Marathi it is called as 'Phulgobhi'. Agani, ganga-68, kataki, kauri are the varieties which are mostly use in the study area. India's Rank in cabbage production is third and botanical name is *Brassica oleracea* L. capitata and in marathi it is called `Pattagobi' as `Bandgobi'. Green challenger, golden acre are varieties of cabbage which are mostly use in the study area. An India's rank in onion production is second in the world. Maharashtra state is first in onion production with a share of 18 per cent. During 2007-08 India exports onion 11.01 lack mt with export value Rs.1285 crores. Its botanical name is *Allium cepa.* In Marathi it is called as 'kanda' and in Hindi it is called as 'pyaz'. Most of the farmers use local-white variety in this area. Botanical name of brinjal is *Solanum melongena* in Marathi it is called as 'wange' and in Hindi it is called as 'baingan'. The brinjals a native of India. It has been in cultivation in India since ancient times. It is one of the most common vegetable grown throughout the country. puneri kater manjiri, manju, MAHYCO-1, MAHYCO-10 varieties are popular.

Botanical name of capsicum is *Capsicum annum L.* It is called as 'sweet pepper' and 'simla mirch'. It is newly entrance into our country. It is one of the cash crops in India. The crop pays higher income to the growers. It is mainly cultivated in Himachal Pradesh, part of Gujarat, Maharashtra, and Ranchi region of Tamil Nadu. In India Capsicum is grown in an area about 4783 ha with an annual production 42230 ton and productivity 8.83 t/ha. (Anonymous, 2005). In study area suwarna and Natasha varieties of capsicum are used.

Material and Methodology

The study was confined Akola district it comes under western vidarbha region of Maharashtra. The Primary data was collected from different villages of different talukas Akola district of Maharashtra in the year 2008-09. From number of villages 100 farmers were selected and based on land holding below 1 ha, 1ha to 2 ha, 2 ha to 4 ha and 4 ha and above for the marginal, small, medium and large farmers, respectively.

The study used primary data on the input utilization, cost of cultivation and returns were collected from the selected growers and other relevant information was collected through a survey method with the help of pretested questionnaire for selected vegetable, for the years of 2008 and 09.

Simple tabular analysis was done to accomplish the objectives.

The collected data were analyzed by using the level of input utilization and cost of production of vegetables and different cost concepts while performing the study on marketing of vegetables, the marketing cost, market margin and producers share in consumer rupee were taken into consideration .where cost concept worked out i.e. Cost A, Cost B, and Cost C was used in present analysis.

Cost 'A'

It includes the expenditure on seed, manures and fertilizers, hired human labour, land revenue, irrigation charges, machinery charges interest on working capital and depreciation on farm implement.

Cost 'B': Cost A + Rental Value of owned land + interest on own fixed capital (excluding land)

Cost 'C': Cost B + imputed value of family labour.

The price spread in agriculture was assessed by estimating price received by the farmers expressed as a percentage of the retail price (i.e. the price paid by the consumer). If it is the retail price the producers share in the consumer's rupee (Ps) be expressed as follows.

$$Ps = \frac{\text{Net price received by the producer}}{\text{Price paid by consumer}} \text{ X } 100$$

Where Ps=price spread

Result and Discussion

Economics of Production of Vegetables

The economics of vegetable production of vegetatable were estimated separately for the year 2008-09 table (1) revealed that brinjal, cauliflower, cabbage, onion and capsicum crop have earned per hectare gross returns of Rs. 101808.45, Rs. 96876.04, Rs. 93162.92 and Rs. 135207.9 and 200878.86 respectively,

whereas the total cost of cultivation of these vegetable crops have been estimated to Rs. 82625.68, Rs. 68870.62, Rs. 64896.5, Rs. 83673.09 and Rs. 137638.8 respectively per hectare net return or profit obtained by the cultivators of brinjal, cauliflower, cabbage, onion and capsicum were Rs. 19182.77, Rs. 28005.42, Rs. 28266.42, Rs. 51534.81 and Rs. 63240.06 respectively.

Efficiency of investment in the cultivation of these vegetable crops was judged by calculating input output ratios. The input output ratios at cost A is high as 3.44, 4.79, 4.83, 4.50 and 3.32, respectively and at the Cost C is 1.23, 1.41, 1.44, 1.62 and 1.46, respectively. From this it can be concluded that cultivation of vegetable crops are economically beneficial. In this study onion was found most beneficial followed by capsicum, cabbage, cauliflower and brinjal.Per quintal cost of production was found highest for capsicum i.e. Rs.985.09 followed brinjal, cauliflower, onion and cabbage i.e. Rs. 627.95, Rs. 572.54, Rs. 544.46 and Rs. 515.95, respectively. Net return per quintal of onion is highest Rs. 335.34 lowest in brinjal as 145.79.

Table 1. Economics of Production of Vegetable

Sl. No	ticular	Brinjal	Cauliflower	Cabbage	Onion	Capsicum
1	**Production per ha (qtl)**	131.58	120.29	125.78	153.78	203.92
2	Gross return	101808.45	96876.04	93162.92	135207.9	200878.86
3	Cost					
a	Cost A	29599.74	20239.34	19268.41	30007.35	60518.86
b	Cost B	79336.98	65062.89	61261.89	78075.68	134339.4
c	Cost C	82625.68	68870.62	64896.5	83673.09	137638.8
4	**Net return at**					
a	Cost A	72208.71	76636.7	73894.51	105200.55	140360
b	Cost B	22471.47	22471.47	31813.15	57132.22	66539.46
c	Cost C	19182.77	19182.77	28005.42	51534.81	63240.06
5	Cost of production	627.95	627.95	572.54	544.46	985.09
6	Net return per quintal	145.33	145.33	232.82	335.34	310.12
7	**Input-Output at**					
a	Cost A	3.44	3.44	4.79	4.50	3.32

b	Cost B	1.28	1.28	1.49	1.73	1.5
c	Cost C	1.23	1.23	1.41	1.62	1.46

Table 2. Producer share in consumer rupee in channel I was 62.09 per cent, in channel II 72.35 per cent and in channel III was 93.35 per cent. It showed that if share of various intermediates decrease the producer share in consumer rupee increases. Gross price received by producer was Rs. 750.00. Net price received by producers was Rs. 618.75, selling price of wholesaler purchasing as 839.95 and retailer selling price and consumer price was same as 996.59. In channel III producer to consumer purchasing price of consumer and gross price received by producer was same as Rs. 760.70. Producer shared in consumes rupees in channel I was 59.15, in channel II was 80.08 and in channel II was 96.11. It is increase when intermediaries between wholesales were less as compare to retailer.

Gross price received by producer was Rs. 710.10 and net price received by producer 575.2. Selling price of wholesaler and purchasing price of retailer in channel I was Rs. 817.4 and in channel II gross price received of producer was Rs. 780.50 and it was purchasing price of retailer.

Producer share in consumer rupees in channel I was 60.39 in channel II was Rs. 81.68 and in channel III Rs. 95.74. Net price received by producer was Rs. 558.9 in channel I, Rs. 682.2 in Channel II and Rs. 766.1 in channel III and consumer purchase price was Rs. 925.5 in channel I Rs. 836.08 in channel II and Rs. 800.20 in channel III. Wholesaler selling price and retailer purchase price was same as Rs. 789.20 in channel I. Producer's gross price received in channel I, II and III were Rs. 690.50, 720.10 and 800.20.

Producer share in consumer rupees in Channel I was Rs. 56.56 and in channel II was more as 81.02. Gross price received by producer was Rs. 820.50 and net price Rs. 637.90 in channel I and in channel II it was Rs. 900.10 and Rs. 845.00 respectively. Selling price of wholesaler and purchasing price of retailer in channel I is same as Rs. 959.1 and in channel II selling price of retailer and purchasing price of wholesaler was same as Rs. 1042.9.

From Table 2. it was seen that net price received by capsicum growers was more in Channel II i.e. Rs. 1429.8 per quintal as compared to Rs. 1275.57 in Channel I. Gross price received by producer in channel I and channel II were Rs. 1500 and Rs. 1480.10, wholesaler purchase price was Rs. 1500 in channel I. Purchase price of retailer in channel I and II were Rs. 1608.4 and Rs. 1480.10. Selling price of retailer and purchasing price of consumer was same in channel I was Rs. 1823.94 and in channel II was Rs. 1611.15. Producer share in consumer rupees was more in channel II as Rs. 88.87 and 69.99 in Channel I.

Table 2. Channel wise Price spread of Brinjal, Cauliflower, Cabbage, and Onion (R s. /qtl)

SI.No.	Particulars	vegetables												
		Brinjal			Cauliflower			Cabbage			Onion		capsicum	
		Channel I(cost)	Channel II(cost)	Channel III(cost)	Channel I(cost)	Channel II(cost)	Channel III(cost)	Channel I(cost)	Channel II(cost)	Channel III(cost)	Channel I(cost)	Channel II(cost)	Channel I (cost)	Channel II (cost)
A	**Producers**													
1	Gross price received	750.00 (75.26)	600.98 (79.49)	760.70 (100)	710.10 (73.02)	780.50 (85.50)	850.20 (100)	690.50 (74.61)	720.10 (86.13)	800.20	820.50 (72.74)	900.10 (86.30)	1500.00 (82.24)	1480.10 (91.86)
2	Cost incurred	131.25 (13.17)	54.00 (7.14)	35.40 (4.65)	134.90 (13.87)	43.28 (4.74)	33.10 (3.89)	131.60 (14.22)	37.20 (4.45)	34.10 (4.26)	182.60 (16.19)	55.10 (5.28)	224.43 (12.30)	50.30 (3.12)
3	Net price received	618.75 (62.09)	546.98 (72.35)	725.30 (95.35)	575.20 (59.15)	737.22 (80.76)	817.10 (96.11)	558.90 (60.39)	682.20 (81.68)	766.10 (95.74)	637.90 (56.56)	845.00 (81.02)	1275.70 (69.85)	1429.80 (88.74)
B	**Wholesaler**													
1	Purchase price	750.00 (75.26)	-	-	710.10 (73.02)	-	-	690.50 (74.61)	-	-	820.50 (72.74)	-	1500.00 (82.24)	-
2	Cost incurred	29.95 (3.01)	-	-	32.30 (3.32)	-	-	28.70 (3.10)	-	-	63.50 (5.63)	-	23.20 (1.27)	-
3	Net margin	60.00 (6.02)	-	-	75.00 (7.71)	-	-	70.00 (7.56)	-	-	75.10 (6.65)	-	85.20 (4.67)	-
4	Selling price	839.95 (84.29)	-	-	817.40 (84.05)	-	-		-	-	959.10 (85.03)	-	1608.40 (88.18)	-
c	**Retailer**													
1	Purchase price	839.95 (84.29)	600.98 (79.49)	-	817.40 (84.05)	780.50 (85.50)	-	789.20 (85.27)	720.10 (86.13)	-	959.10 (85.03)	900.10 (86.30)	1608.40 (88.18)	1480.10 (91.87)
2	Cost incurred	26.54 (2.66)	36.04 (4.77)	-	30.00 (3.08)	32.20 (3.53)	-	26.20 (2.83)	25.00 (2.99)	-	18.62 (1.65)	26.30 (2.53)	38.54 (2.11)	20.55 (1.28)
3	Net margin	130.10() (13.05)	119.05 (15.74)	-	125.10 (12.87)	100.10 (10.97)	-	110.10 (11.90)	90.98 (10.88)	-	150.20 (13.32)	116.50 (11.17)	180.00 (9.80)	110.50 (6.85)
4	Selling price	996.59 (100.00)	756.06 (100.00)	-	972.50 (100.00)	912.80 (100.00)	-	925.50 (100.00)	836.08 (100.00)	-	1127.92 (100.00)	1042.9 (100.00)	1823.94 (100.00)	1611.15 (100.00)
D	**Consumer**													
1	Purchase price	996.59	756.07	760.70 (100.00)	972.50	912.80	850.20 (100)	925.50	836.08	800.20	1127.92	1042.9	1823.94	1611.15
2	Net price received by producer	618.75	546.98	725.3	575.20	737.22	817.10	558.90	682.90	766.10	637.90	845.00	1275.57	1429.80
3	Producer shared in consumer rupee%	62.09	72.35	95.35	59.15	80.08	96.11	60.39	81.68	95.74	56.56	81.02	69.85	88.87

Conclusion

Vegetable cultivation was labour intensive were as capsicum crop required high capital investment and is high profit giving enterprises in net shade conditions. Input output ratio was more in onion than others crops but net returns was maximum in case of capsicum. Capsicum cultivation under net shade condition was estimated more gross income. Producer - Wholesaler - retailer - consumer was the important channel through which maximum quantity is sold by the cultivators. Producers share in consumers rupees was highest in Channel III then Channel II and Channel-I. Cost C and Cost B were high as compare to Cost A. High cost of inputs, losses due to climatic changes, uncertainty of prices, disease and pest attack etc. were major constraints faced by vegetable growers during production and marketing of vegetables.

Implications

The facilities of grading and standardization of the produce should be improved in order to pay remunerative prices to the farmer. Vegetable market should be well organised and regulated. Government should come forward and set up well equipped and spacious cold storage for storage of the vegetable. Technical guidance should be provided to the farmers by agricultural department and allied sources for production and marketing of vegetables Seed of vegetable at reasonable rate should be made available to the cultivators through proper, registered agencies by the government.

References

Chavan, R. S. J. N., Singh.(1998). Vegetable marketing system in Azamgarh district of Uttat Pradesh. Indian J. Aril. Mktg., 13(2): 57.

Dixit Anil, R. K., Grover, K. N., Rai and Virendra Singh., (2000). Analysis of production and marketing risks of tomato in Haryana. Indian Jour. Agri. Mktg., 14(2) : 41-49.

Prasad, B. G. (1979). Price Spread of selected vegetables in Bangalore city. Mysore J. Agril. Sci., 12(2) : 223-224.

Prasad, J. (2001). Vegetables production and marketing in Bihar. A farm level study. The Bihar J. Agril. Mktg., 9(3):225-244.

Roy, B. C. (2008). Studied fruit and vegetable processing in India and it's role in Agricultural development Indian J. Agril. Econ., 63(3): 381.

Singh Rakesh., Shailesh Kr. Singh and H.P. Singh, (2008). Possibilities of increasing income and employment through optimum allocation of resources in vegetables. Ind. J. of Agril., econ., 63 (3) : 379.

Verma Ajay and K. P. Singh. 2004. An Economic analysis of post harvest in fresh vegetables. Indian J. Agril. Mktg. 18(1) : 135.