



Socio Economic Status of Cabbage Growers in Khandwa District of Madhya Pradesh

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Authors' contributions

This work was carried out in collaboration among all authors. Author BSR designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors RKN and AS managed the analyses of the study. Author AS managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

A study was conducted in 2016-17 for socioeconomic study of cabbage producing farmers in Khandwa district of Madhya Pradesh. Block Pandhana district of Khandwa (M.P.) was purposively selected for the study because of its potentiality on vegetable production. A sample of 60 farmers in the ratio of 20:20:20 was selected randomly. Primary data was collected using interview schedule, direct observation, focus group discussion, key informant interview whereas secondary data was collected from various web reviews, publications and reports of different governmental as well as non-governmental agencies. This indicated that in the study area agriculture farming is basically in the hand of the farmers mostly belonged to backward classes and a few also belonged to general category. It was due to fact that elder farmers fragmented their holding into holdings due to distribution of land among the spouses. It is also apparent that (16.66%) of the cabbage growers were illiterate and got only formal education. The average size of operational land holdings of

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selected farmers was 1.35 hectare, 3.2 hectare and 6.6 hectare on small, medium and large size farms respectively. The entire land was owned and operated by selected farmers and none have leased out or leased in land for cultivation. Small size farm higher human labour days were a result of sufficient availability of family labour. The entire land was owned and operated by selected farmers and none have leased out or leased in land for cultivation. The average net sown area of small, medium and large size farm was 1.28, 3.04 and 6.27 hectare respectively. Almost entire land holdings were well irrigated. On the basis of above observation it may be conclude that on small size farm higher human labour days was a result of sufficient availability of family labour.

Keywords: Farmers; income; market; production; cabbage.

1. INTRODUCTION

Cabbage (*Brassica oleracea*) is one of the most popular winter vegetables grown in India. It is cultivated in 0.245 million hectares with the total production of 5.617 million metric tonnes and average productivity of 22.9 metric tonnes/hectare. Cabbage is used as salad, boiled vegetable and dehydrated vegetable as well as in cooked curries and pickles [1-5]. Cabbage is rich in minerals and vitamins A, B1, B2 and C. The interest in vegetable production and marketing has tremendously increased in recent years due to its nutritional value, remunerative crop and export basket. Owing to its nutritional value there has been significant shift in consumption pattern in favour of vegetables [6-9]. In a span of 10 years between 1987-1997 per capita consumption of vegetables has doubled and since then, its consumption of vegetables is increasing significantly. Even though the recommended standard requirement of 220 gm. per day quantitatively, the vegetable consumption is nearly fourth fifth of the above recommendation, this may be on account of their short supply and higher demand resulting in higher price which the common man cannot afford.

2. MATERIALS AND METHODS

A multi-stage random sampling technique was adopted for data collection. The study was conducted in block Pandhana district of Khandwa (M.P.) where cabbage is an important cash crop. Stratified random sample procedure was adopted for the selection of villages and farmers. Sample of 3 villages of this block was selected randomly. A sample of 60 farmers in the ratio of 20:20:20 was selected randomly. The farmers were classified into three groups viz., small (<2.00 hectares), medium (up to 2.00- 4.00 hectares) and large (>4.0 hectares) farms. The sample cabbage producers for cabbage cultivation disposal of their produce opted independent

channels as per convenience. Yield, returns and marketing costs and constraints of production and marketing data were collected from the sample farmer as well as from different market functionaries through the pre-tested schedule for the year 2016-17.

3. RESULTS AND DISCUSSION

Socio economic characteristics of farmers is one of the most important independent variable which directly or indirectly influence the level of adoption of improved production technology of cabbage which ultimately changed the production level and profitability per unit of production area. In this study the socio economic characteristics of cabbage growing farmers included the age, caste and literacy level has been studied. The detail information of socio economic characteristics is presented in following tables. Age of the person is always considered as an important factor which influences the Farmers adaptation level. As evident from the data presented in Table 1. It appears that on an average the cabbage growers were 43 years of age. As per the size of holding, in small size group the average age of cabbage growers was 39 years while in medium size, the average age was 44 years and in large size group the average age of cabbage growers was 46 years. It was due to fact that elder farmers fragmented their holding into holdings due to distribution of land among the spouses. The studies further revealed that majority of the cabbage growers were literate (83.34%). The literacy position reflected that among the total cabbage growers the majority of the cabbage growers (30%) had an education up to primary level followed by (28.33%) middle school, (18.33%) higher secondary standard and (6.67%) college level. It is also apparent that (16.66%) of the cabbage growers were illiterate and got only formal education (Table 1). Table 2 indicated that off the total sampled farmers, majority of the respondent 93.33 percent,

remaining 6.67 percent farmers belonged to general category. This indicated that in the study area agriculture farming is basically in the hand of the farmers mostly belonged to backward classes and a few also belonged to general categories. It is also interesting to note that in the studied area no farmer belonged to scheduled caste or scheduled tribe category (Table 2). The land is probably the most important measure of size of farmers because it is a primary input and it also relatively free from substantial annual fluctuation and constitutes the major portion of fixed cost in farm business. The average size of operational land holdings of selected farmers was 1.35 hectare, 3.2 hectare and 6.6 hectare on small, medium and large size farms respectively. The entire land was owned and operated by selected farmers and none have leased out or leased in land for cultivation. It can be noted from the table that the average net sown area of small, medium and large size farm was 1.28, 3.04 and 6.27 hectare respectively. Cropping pattern and cropping intensity of selected cabbage growing farmers under different size group has been presented in Table 3. Table revealed that a large number of crops grown including soybean, maize, cotton, red gram and pea has to used place in kharif crop basket with 38.04, 22.09, 16.84, 13.02 and 10.00 percent share in total cropped area in kharif respectively, In rabi season the large number of crops grown including wheat, cauliflower, cabbage and onion with 45.98, 24.64, 15.20 and 14.18 percent share in total cropped area in rabi season respectively, However, it is interesting to note that in summer the crops grown were only mung and khira. Both these crops were taken twice in summer season itself and their coverage was 8.40, 30.20 and 40.60 hectare area under small, medium and large size group of farms respectively also inferred that the intensity of cropping was highest in medium farmer (250.72%) followed by small (232.74%) and large size farm (232.48%). Overall the cropping intensity was approaching 238.64 percent. A multi-stages random sampling technique was adopted for data collection. The study was conducted in block Pandhana district of Khandwa (M.P.) where cabbage is an important cash crop. Stratified random sample procedure was adopted for the selection of villages and farmers. Sample of 3 villages of this block was selected randomly. A sample of 60 farmers in the ratio of 20:20:20 was selected randomly. The farmers were classified into three groups viz., small (<2.00 hectares), medium (up to 2.00- 4.00 hectares) and large (>4.0 hectares) farms. The sample cabbage producers for

cabbage cultivation disposal of their produce opted independent channels as per convenience. Yield, returns and marketing costs and constraints of production and marketing data were collected from the sample farmer as well as from different market functionaries through the pre-tested schedule for the year 2016-17. The maximum average age 46.00 years was found in medium size farmer group and minimum average age 43.00 year was found in small size farmers group and large farmers average age 45.00 years was found. The highest 93.33% farmers were belong to OBC category and 6.67% were in General category. The highest 83.33% farmers were literate followed by 30% were Primary, 28.33% were Middle, 18.33% Higher secondary and 6.67% Graduate & above education level. The average size of land holding was 1.35 ha in small, 3.2 ha in medium and 6.6 ha in large size group respectively. The average size of cultivated land was 1.28 ha in small, 3.04 ha in medium and 6.27 ha in large size group respectively. The average size of irrigated land was 1.28 ha in small, 3.04 ha in medium and 6.27 ha in large size group respectively. The cropping pattern of the selected farmers revealed that Soybean was the most preferred crop of the kharif season (38.44%) followed by Maize (22.09%), Cotton (16.84%), Red gram (13.02%) and Pea crop (10.007%) & similarly, in Rabi season Wheat occupied the major portion of the cultivated area (45.98%) followed by Cauliflower (24.64%), Cabbage (15.20%) and Onion (14.18%), farmer also took Moong and Khira crop during summer season subject to this area losses of soil moisture and irrigation facility. Overall cropping pattern in study area was still dominated by wheat; soybean was the next preferred crop. There was a keen competition between cabbage acreage leaving a narrow margin in between them in Rabi season. The intensity of cropping was higher in small size group (232.74%) followed by medium (250.72%) and large size group (232.48%). The average cropping intensity was approaching 238.64%. The employment of family labour showed reverse relation with the size of farm but employment of hired human labour showed a scale relation with the size of farm. Machine power utilization was highest in small size farm followed by medium and large size farms. Investment on seed was higher in medium size farm followed by large and small size farm. Investment on plant protection was higher in medium size farm followed by large and small size farm. Manures & Fertilizer application was higher in medium size farm followed by large and small size farm. Irrigation

charge was higher in small size farm followed by medium and large size farm. The productivity of cabbage was higher in medium size group followed by small and large size group. The net

Table 1. Age and literacy levels of sample cabbage growers

S. no.	Characteristics	Farmer category			
		Small	Medium	Large	Overall
Age					
1.	Average age (In year)	39	44	46	43
Literacy					
1.	Illiterate and formal education	3 (15)	4 (20)	3 (15)	10 (16.67)
2.	Up to primary (5th standard)	7 (35)	6 (30)	5 (25)	18 (30)
3.	Up to middle (8th standard)	6 (30)	5 (25)	6 (30)	15 (28.33)
4.	Up to H.S.S.C. (12th standard)	3 (15)	4 (20)	4 (20)	11 (18.33)
5.	Graduate and above	1 (5)	1 (5)	2 (10)	4 (6.67)
	Total	20(100)	20(100)	20(100)	60(100)

(Figures in parentheses indicate the percentage to total)

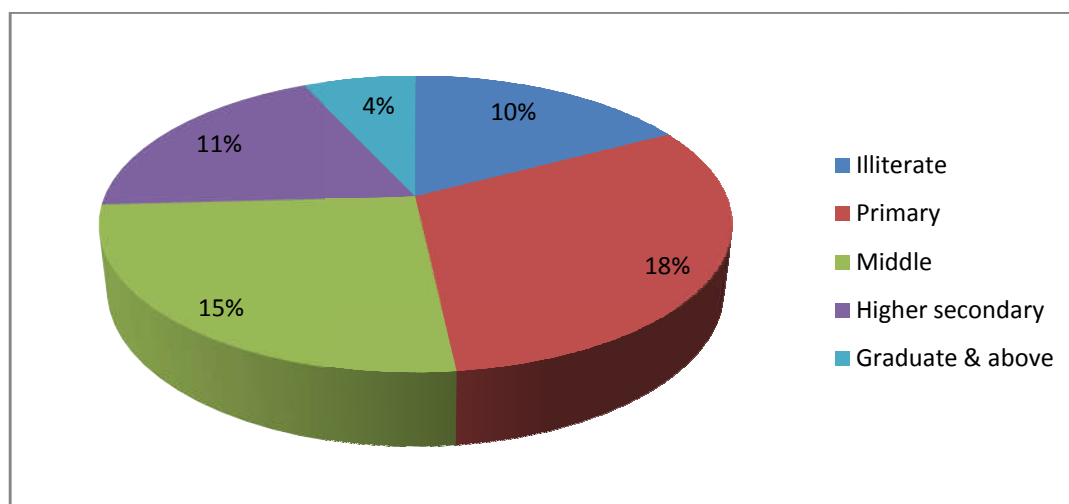


Fig. 1. Literacy level of selected respondent

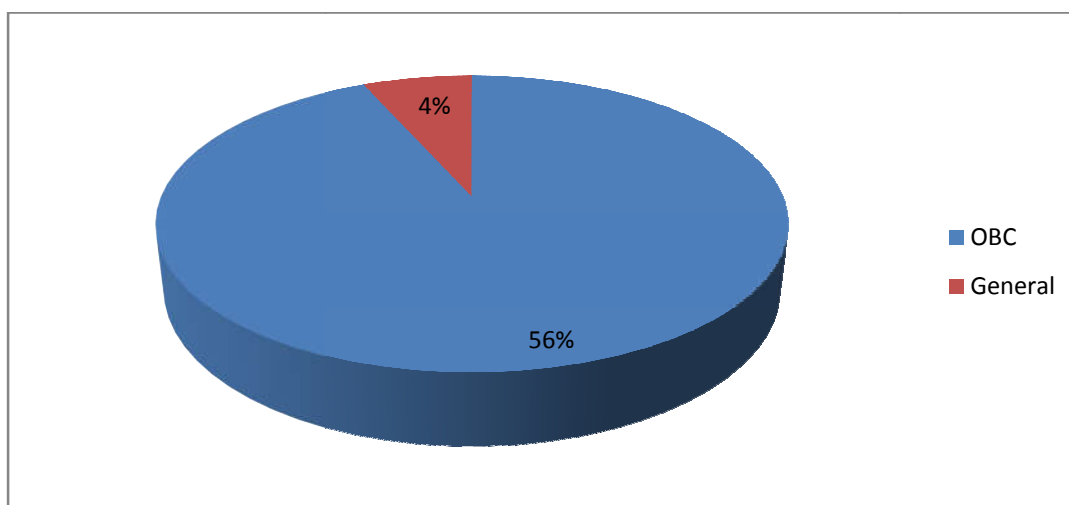


Fig. 2. Caste wise distribution of selected respondent

Table 2. Caste wise distributions of respondents

S. no.	Caste group	Category			Total
		Small	Medium	Large	
1.	OBC	20 (100)	19 (95)	17 (85)	56 (93.33%)
2.	General	0	01 (05)	03 (15)	04 (6.67%)
Total		20 (100)	20 (100)	20 (100)	60 (100)

*(Figures in parentheses indicate the percentage of total)***Table 3. Land utilization pattern of different size group of sample farms (unit-ha)**

S. no.	Particulars	Category			Total
		Small	Medium	Large	
1.	Number of respondents	20	20	20	60
2.	Total land holding	27	64	132	223
3.	Average size of land holding	1.35	3.2	6.6	3.72
4.	Total cultivated land	25.65	60.8	125.4	211.85
5.	Average cultivated land	1.28	3.04	6.27	3.53
6.	Total uncultivated land	1.35	3.2	6.6	11.15
7.	Average un-cultivated land	0.06	0.16	0.33	0.18
8.	Total irrigated land	25.65	60.8	125.4	211.85
9.	Average irrigated land	1.28	3.04	6.27	3.53
10.	Total un-irrigated land	1.35	3.2	6.6	11.15
11.	Average un-irrigated land	0.06	0.16	0.33	0.18
12.	Total net sown area	25.65	60.8	125.4	211.85
13.	Average net sown area	1.28	3.04	6.27	3.53

Table 4. Cropping pattern & cropping intensity of sample respondent (unit-ha)

S. no.	Crops	Size group			Total
		Small	Medium	Large	
A.		Kharif			
1.	Soybean	9.20(35.87)	23.20(38.16)	48.20 (38.44)	80.60 (38.04)
2.	Maize	7.40 (28.85)	14.60 (24.01)	24.80 (19.78)	46.80 (22.09)
3.	Cotton	4.65 (18.13)	9.40 (15.46)	21.60 (17.23)	35.65 (16.84)
4.	Red gram	2.30 (8.97)	8.80(14.47)	16.50 (13.15)	27.60 (13.02)
5.	Pea	2.10 (8.18)	4.80 (7.90)	14.30(11.40)	21.20 (10.007)
Sub Total		25.65 (100)	60.8 (100)	125.4 (100)	211.85 (100)
B.		Rabi			
1.	Wheat	8.40 (32.74)	25.20 (41.45)	63.80 (50.88)	97.40 (45.98)
2.	Cauliflower	6.20 (24.17)	17.40 (28.61)	28.60 (22.80)	52.20 (24.64)
3.	Cabbage	8.00 (31.19)	9.40 (15.47)	14.80 (11.80)	32.20 (15.20)
4.	Onion	3.05 (11.90)	8.80 (14.47)	18.20 (14.52)	30.05 (14.18)
Sub Total		25.65 (100)	60.8 (100)	125.4 (100)	211.85 (100)
C.		Summer			
1.	Mung	4.80 (57.14)	17.40 (57.62)	25.40 (62.57)	47.60(60.1)
2.	Khira	3.60 (42.86)	12.80(42.38)	15.20 (37.43)	31.60 (39.90)
Sub Total		8.40 (100)	30.20 (100)	40.60 (100)	79.20 (100)
Gross cropped area		59.70	151.8	291.40	502.90
Net cropped area		25.65	60.8	125.4	211.85
Cropping intensity (%)		232.74	250.72	232.48	238.64

Table: 4 (Figures in parenthesis shows percentage to Sub Total)

return over cost C3 (total cost) observed higher in small size followed by medium and large size farm in cabbage. Family labour income was

higher in small size group which tends to decline as per increase of farm size. The net return per farm was higher in small size group due to higher

allocation of cabbage area and tends to decline as per increase of size farm.

4. CONCLUSIONS AND SUGGESTIONS

The list of results obtained in this research study concludes that the investment on human labour manures followed by fertilizer and irrigation should highly be considered. To minimize the cost of cultivation of cabbage crop in small size farm cost involved on human labour use to be decreased but this avenue is opened for larger size farms. Efficient marketing should be followed for securing higher share of producers in consumer's paid price. Problems observed during the study should accordingly be handled to minimize their incidence. Proper borrowing facility and marketing information should also be followed which influence the return of this crop. Creation of demand and searching of export oriented substances should be extended to the best level of state and commercial agencies for further increase the prospect of cabbage crop. Farmers in regard of sound farming practices based on scientific recommendation should be acquainted with the researcher and extension agencies for narrowing the gap between potential and actual yield. Regulated market or amendment in marketing practices should be observed which unnecessarily expand the gap between producer's price and price paid by ultimate consumer. Market intermediaries reap more profit in indirect marketing channel. Timely and adequate supply of inputs like, fertilizers, chemicals, quality seed should be and must be ensured. Training of farmers in the areas of production technology, grading, standardization of produce, quality control and modern method of marketing will prove to be a viable move. The government should establish adequate storages at village level for the purpose of orderly marketing of cabbage to benefit both consumers and producers. Export oriented plans for cabbage should also be considered for better price. Provision of proper marketing information to producers as well as consumers at marketing level should be ensured. To discourage delay payment of cabbage selling amount to growers should strictly be checked through the administrative involvement of state government and corporate bodies. In the study area, cabbage is the important crop in the vegetable and also reveals its suitability as well as profitability in the study area. So its requires to convince farmers for enhancing the area under cabbage crop. The processing is the foremost important requisite for better and regular earnings of the farmers at the

same time this will ensure the minimum losses of the farmers produce. Government should come forward to eliminate intermediaries which are getting more profit. Local and state agencies should involve in the marketing management in study area, therefore, both the cabbage growers and ultimate consumers may get incentive price and justified payment without exploitation and permissible number of intermediaries may be involved.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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