An Economic Analysis of Production of Cowpea in Bilaspur District of Chhattisgarh, India

Abstract

The research entitled "An Economic Analysis of Production of Cowpea in Bilaspur District of Chhattisgarh, India" was done with the specific objectives to work out the cost and returns of cowpea in the study area, The survey for specified objective was conducted in Takhatpur and Bilha blocks of Bilapur district of Chhattisgarh. Data were collected from 75 cowpea growers from the 10 villages (5 villages from each block). Data related to marketing was collected from 5 village traders, 6 wholesalers and 8 retailers. The primary data were collectedfrom the cowpea growers through personal interviewmethod with the help ofwell-preparedquestionnaire for the production and marketing in the year 2022-23. The collected data were analysed by using average, mean, percentage and other tools to present in tabular form and for cost and cost concept were used. The study reveal that the overall cost of cultivation per hectare of cowpea wascalculatedRs.1,00,057.00. The cost of cultivation per hectare showed rising trend with the rise in farm size.The overall input-output ratio of cowpea was found to be 1:1.6on the sample farms.

Keywords: Input-Output Ratio, Fixed Cost, Variable Cost, Cost of Cultivation, Gross return, Net return.

Introduction:

Cowpea(*Vigna unguiculata*) also called black-eyed pea or southern pea**,** annual plant within the pea family (Fabaceae) grown for its edible legumes. Semi-arid areas of sub-Saharan Africa (Da Silva et al., 2018).In addition to their use as a protein-rich food crop, cowpeas are extensively grown as a hay crop and as a green manure or cover crop. Because of India's varied environment, various kinds of vegetables are always available. After China, it produces the second-most vegetables worldwide. India produced 191.77 million metric tons of vegetables and 99.07 million metric tons in 2019–20, according to the National Horticulture Database (Second Advance Estimates) issued by the National Horticulture Board. vegetables were grown on 10.35 million hectares. In the state, most vegetable crops, including solanaceous plants, cucurbits, beans, cabbage, cauliflower, etc., are cultivated successfully. In Chhattisgarh, the total area of vegetable crops was 489.271 '000 ha and cowpea area and production 17084 '000 ha and 230826 '000 metric tons) in 2020–21, with a production of 6868.126 '000 MT and a productivity of 14.04 (q/ha). The following crops are grown in Bilaspur district: cowpea, tomato, potato, chilli, coriander (green), and okra. The total area of vegetable crops in the district was recorded 36.407 '000 ha in the year 2020-21with the production of 299.968 '000 MT. The total area of cowpea in Bilaspur district was recorded 4407 ha in the year 2020-21 with the production of 92547 '000 MT. , according to State Horticulture Database issued by Director Horticulture Nava Raipur, Atal Nagar, C.G.

Material and Methods

The survey for specified objective was conducted in Takhatpur and Bilha blocks of Bilaspur district of Chhattisgarh. 10 villages were selected (5 from each block) and total 75 farmers which was 10 % of total cowpea grower were selected from each selected village. The primary data were collected from the cowpea grower through personal interview method with the help of well-prepared questionnaire for the production year of 2022-2023. The data collected were analysed through average, percentage and presented in tabular form and cost of cultivation was estimated with the help of cost concept of CACP.

Result and Discussion

Economicsof cowpea:

Table 1 makes it quite evident that compared to marginal farms, large farms had greater cowpea cultivation costs per hectare. Cowpea cultivation cost Rs. 100057.6 per hectare on an average. In comparison to marginal farms (Rs. 85900.18), small farms i.e.(Rs. 95001.84), and medium farms (Rs. 104749.90), large farms had greater cultivation expenses (Rs. 114579.10). The price of farming per hectare has increased along with the size of the farm. It was because large farmers, who had access to more credit from different financial institutions and were in a better financial position than marginal, small, and marginal farmers, spent more on contemporary farm inputs including high-quality seed, fertilizer, plant protection chemicals, hired labor, and other products.Large farms have higher costs than smaller farms, which leads to better yields and profitability.

Table 1:Economicsof cowpeaondifferentsizegroups offarms

(Rs./ha)

S. No.	Particulars	FarmSize				Overall
		Marginal	Small	Medium	Large	
A	Variablecost					
1	Familyhuman Labour	23500.55 (27.36)	14500.67 (15.26)	15550.9 (14.85)	16332.56 (14.25)	17471.17 (17.46)
2	Hiredhuman Labour	16055.27 (18.69)	25530.56 (26.87)	27851.33 (26.88)	29648.62 (26.76)	24771.45 (24.76)
	Totalhuman Labour	39555.82 (46.05)	40031.23 (42.14)	43402.23 (41.43)	45981.18 (40.13)	42242.62 (42.22)
3	Machine Power	4939.44 (5.75)	5950.32 (6.26)	6764.23 (6.46)	8123.46 (7.09)	6444.36 (6.44)
4	Seedcost	1550.59 (1.81)	1850.79 (1.95)	2150.65 (2.05)	2550.23 (2.23)	2025.56 (2.02)
5	Manure& Fertilizer	5684.35 (6.62)	6869.79 (7.23)	7109.23 (6.79)	8306.39 (7.25)	6992.44 (6.44)
6	Plant	4947.52	5609.19	6265.89	7484.56	6076.79

	Protection	(5.76)	(5.90)	(5.98)	(6.53)	(6.07)
7	Irrigation Charges	664.10 (0.77)	796.08 (084)	886.14 (0.85)	896.05 (0.78)	810.59 (0.81)
8	Interest on Working Capital@3%	1720.25 (2.00)	1833.22 (1.93)	1997.35 (1.91)	2200.25 (1.92)	1937.77 (1.94)
	Totalvariable Cost	59062.07 (68.91)	62940.62 (66.19)	68575.72 (65.29)	75542.13 (65.71)	66530.14 (66.43)
B	Fixedcost					
1	Depreciation @10%	493.94 (0.57)	595.03 (0.63)	676.42 (0.65)	812.34 (0.71)	644.43 (0.65)
2	Landrevenue	12.00 (0.01)	12.00 (0.01)	12.00 (0.01)	12.00 (0.01)	12.00 (0.01)
3	Rentalvalue of land	24344 (28.20)	29079 (30.67)	32805 (31.48)	35321 (31.03)	30387.25 (30.42)
4	Interest on Fixedcapital	1987.99 (2.30)	2374.08 (2.50)	2679.47 (2.57)	2891.62 (2.54)	2483.49 (2.49)
	Total fixed Cost	26837.94 (31.09)	32060.91 (33.81)	36172.90 (34.71)	39036.97 (34.29)	33527.18 (33.57)
C	Totalcost (A+B)	85900.18 (100.00)	95001.84 (100.00)	104749.9 (100.00)	114579.1 (100.00)	100057.6 (100.00)

Note: Figures in parentheses indicate percentages to the total.

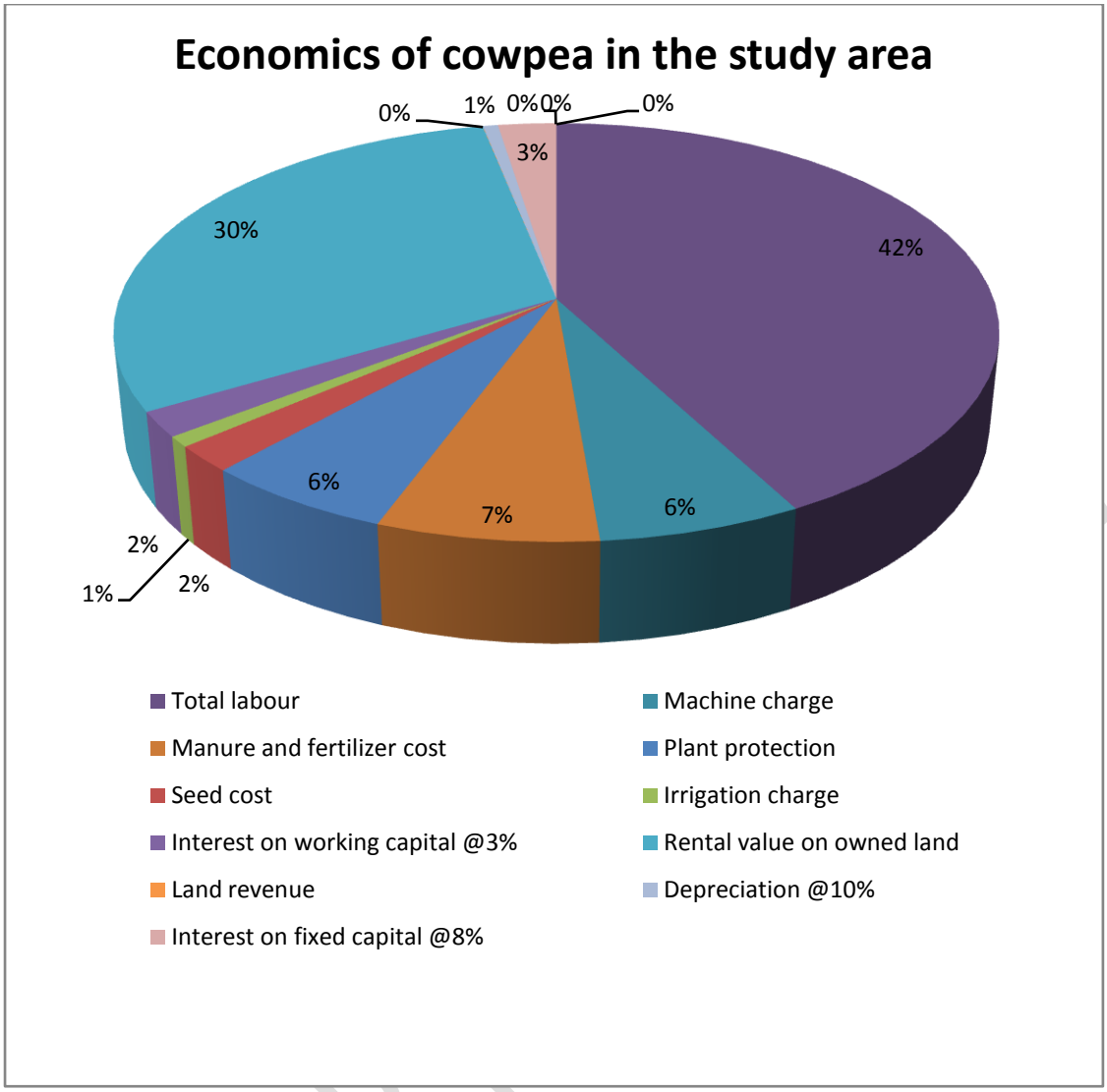

Figure 1 Economics of cowpea in the study area

Table 2: Per hectareyield, value of output andcost of production perquintalof cowpea.

(Rs./ha)

S.N.	Particular	Marginal	Small	Medium	Large	Overall
1	Gross return (rs/ha)	129904	153272	166635	198628	1622109
2	Total Cost (rs/q)	85900	95001	104749	114579	100057
3	Net income (rs/q)	44004	58270	61886	84048	62052
4	Yield (q/ha)	56.48	66.64	72.45	86.36	70.48
5	Price (rs/q)	2300	2300	2300	2300	2300
6	Cost of production (rs/q)	1520.89	1425.59	1445.81	1326.76	1419.61
7	Input-output Ratio	1:1.5	1:1.6	1:1.5	1:1.7	1:1.6
8	B:C Ratio	1.5	1.6	1.5	1.7	1.6

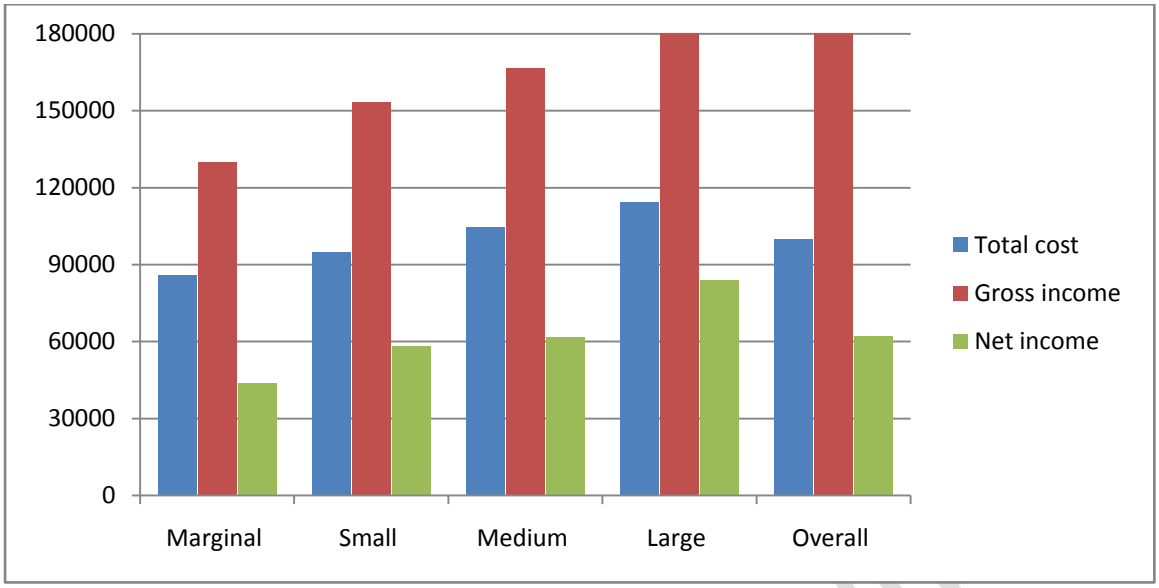

Fig.2:Costandreturnofcowpeaonthesamplefarmsfordifferentgroupoff-farms.

Yield,valueofoutput andcost ofproduction perquintal of cowpea:

Table 2 displays the yield, cost of production per quintal of cowpea, and value of output per hectare for the sample farms. On the sample farms, the overall cowpea production per hectare was 70.48 quintals.It was determined that the overall cost of production per quintal was Rs. 1419.61. The cost of production per quintal of cowpea was Rs. 1520.89, Rs. 1425.59, Rs. 1445.81, and Rs. 1326.76 for marginal, small, medium, and large farm sizes, respectively. Due to stronger yields on the larger farms that offset the higher cost of cultivation, it declined as farm size increased. The cost of production per hectare was on average Rs. 100057. The value of output per hectare on marginal, small, medium, and large farm sizes were, respectively, Rs. 44004, Rs. 58270, Rs. 61886, and Rs. 84048. The increased cost of contemporary farm inputs was correlated with the higher value of produce on large farms.

According to Table 2 and Fig.2, the cowpea produced an average net profit, gross profit, total cost, and input-output ratio per hectare of Rs. 62052, Rs. 162109.80, and Rs. 100057, respectively.

Conclusion

This research was performed on the cost and returns of cowpea production in Bilaspur District of Chhattisgarh, India. Based on the findings, the study showed that the overall cost of cultivation per hectare of cowpea wascalculatedRs.1,00,057.00. The cost of cultivation per

hectare increased as farm size increased.

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