

## Comparative Analysis of Chickpea: FPO and Non FPO Members in Banda District of Bundelkhand Region

### Abstract

This paper critically examines economics of the members and non-members chickpea growers of the FPOs in the Banda District of Bundelkhand region. The study was designed to explore the feasibility of chickpea production in Banda district, which encompasses eight blocks i.e. Badokhar Khurd, Jaspura, Tindwari, Naraini, Mahuva, Baberu, Bisanda and Kamasin. Among these, Mahuva block was selected purposively, because it had highest number of FPOs. In Mahuva block, out of eight FPOs, four FPOs were selected. From the selected FPOs, 60 members who cultivated chickpea of their farm were sampled. 60 respondents who were not a member of any FPOs were selected from 4 villages. Total sample size were 120 respondents. The profitability analysis indicates that the total cost of cultivation for FPOs members was lower (Rs. 34821.03) per hectare and non-members was higher (Rs. 36186.01) per hectare. The analysis of return indicates about the total net return of FPOs members was Rs. 27542.72 per hectare and cost of production was estimated Rs. 2161.45 per qtl., while the total net return for the non-members was Rs. 12922.88 per hectare and cost of production was estimated Rs. 2631.70 per qtl. The benefit cost ratio (BCR) for FPOs members was 1:1.79 whereas non-members were 1:1.35. This indicates that the FPOs members spends less and earns more in comparison to non-members of chickpea growers in the study area.

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**Key Words:** Chickpea, FPOs member's and Non FPO member's profitability, Cost of cultivation etc.

### Introduction

Farmer producers' organizations (FPOs) are a well-known tool for augmenting income of Indian farmers through the market – oriented approach. About 7374 Farmer's Producers Company (FPCs) are present in India which covers about 4.3 million farmers. However, the inherent strengths and capabilities of these organization have been considered an effective tool for improving the capabilities of marginal and small farmers. The FPO members are able to leverage collective strength and bargaining power to easy access financial and non-financial inputs, service and appropriate technologies, reduce the transaction cost, etc. During the globalization and market liberalization, marginal and small farmers have faced several challenges and

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opportunities in agriculture sector. The weak and volatile market price and state support against the risks, especially for marginal and small farmers without access to reliable and affordable inputs, credit transport facilities have proved to be insufficient (Penrose – Buckley 2007).

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High cost of production, low returns and poor market linkage of the marginal and small farmers has inhibited the growth of agriculture sector. The scenario of Indian agriculture sector is facing several challenges viz. declining per capita agricultural land availability (due to increased fragmentation of land holdings), declining natural resource base, increasing demand of land for non-agricultural purposes due to urbanization and industrialization, breaking of joint to nuclear families, disinterest or disenchantment of youth towards agriculture, lack of access to credit, lack of market information, higher input price change, low level of technological adoption etc. Currently more than 40 percent of farmer does not practice farming as a profession and now they could get the change of their agricultural practices as source of livelihood (NSSO Report, 2014). Besides, small and marginal farmers constitute the largest group of cultivators in the country. The share of land holding of small and marginal farmers in total holdings has increased from 80.80 per cent in 2000-01 to 85 per cent in 2010-11 due to increasing population and family fragmentation in land holdings. Further, the average size of land holding in country is 1.15 hectare and the current land holding is 1.08 hectares (Alam, g., and Verma, d., 2007).

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Bundelkhand region comprises seven district in southern UP i.e. Jhansi, Lalitpur, Jalaun, Hamirpur, Mahoba, Banda and Chitrakoot. While agriculture is the predominant occupation in the region and availability of land used for cultivation in the region is considerably of lower fertility than in other agriculture zones of the Uttar Pradesh. In the western UP, for instance, over 75 per cent of the total area is used for cultivation. The area of chickpea in Bundelkhand region of UP is about 2,77,336 hectares, while production was about 3,08,916 metric tonnes and average productivity was 1045 kg/ha. Out of seven district of UP Bundelkhand region, Banda district covering the highest area 96,314 hectare and production 87,395 metric tonnes. Thus the Banda district has contributed 34.72 per cent area and 28.29 per cent in production of chickpea crop in UP Bundelkhand region. Apart from this, in Banda district, the number of marginal farmers were 1,64,721 and small farmers were 55,333. About 73,026 ha of holding were owned by marginal farmers whereas about 77,432 ha of land holding was owned by the small farmers. The average income of a household was Rs. 45,230 for marginal farmers & Rs. 87,221 for small farmers (DA & FW, 2015).

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## Research Methodology

The profitability of chickpea FPOs members and Non- members was estimated according to CACPs methodology to work out the cost of cultivation used in fixing the supplied prices, CACP relies on the cost concept which covers all items of expenses during cultivation including imputed value of the own land interest on the working capital. The operational and fixed cost was worked out to estimate the cost of production of chickpea.

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## Cost of Production

The expenditure incurred in producing a unit quantity of output is called cost of production measured in the term of per quintal.

$$\text{Cost of production (Rs/qt.)} = \frac{\text{Totalcost}^{(\text{Rs./ } a)}}{\text{Mainproduct}^{(\text{qt/ } a)}}$$

## Net Income

The net income was found out the gross income minus total cost of cultivation i.e., price of seed, manure and fertilizers, wages of hired labour and imputed value of unpaid family labour, depreciation, rent, interest on owned and working capital, managerial cost etc.

$$\text{Net Income} = \text{Gross income} - \text{Cost } C_3$$

$$\text{Benefit Cost Ratio} = \frac{\text{Gross Income}}{\text{Total COST}}$$

## Results and Discussions

Table 01. Cost of cultivation of chickpea of FPOs members (Rs /ha)

S.No.	Item wise of cost of cultivation		Amount (Rs.)	Percentage (%)
i.	Human Labour	Family	5012.06	15.83
		Hired	1414.71	4.47
		<b>Total</b>	6426.77	20.30
ii.	Animal Labour	Hired	-	-
		Owned	769.5	2.42

		<b>Total</b>	769.5	2.42
<b>iii.</b>	Machine Labour	Hired	3033.09	9.58
		Owned	414.58	1.31
		<b>Total</b>	3447.67	10.89
<b>iv.</b>	Fertilizer & Manure		2132.14	6.73
<b>v.</b>	Seed		3080.66	9.73
<b>vi.</b>	Plant protection		405.58	1.32
<b>vii.</b>	Irrigation Charges		2421.87	7.65
<b>viii.</b>	Interest on Working Capital @7 per cent		372.53	1.17
<b>1.</b>	<b>Total Operational Cost</b>		19056.72	60.21
<b>i.</b>	Rental Value of Owned Land		10500	33.16
<b>ii.</b>	Rent Paid for Leased-in-Land (tax/revenue charge)		50.55	0.18
<b>iii.</b>	Depreciation on Implements & Farm Building @ 10 per cent		788.22	2.48
<b>iv.</b>	Interest on Fixed Capital@ 12 per cent		1260	3.97
<b>2.</b>	<b>Total Fixed Costs</b>		12598.77	39.79
<b>3.</b>	<b>Total cost[1+2]</b>		31655.49	90.00
	Managerial cost(10% of total cost)		3165.549	10.00
<b>4.</b>	<b>Total Cost of Cultivation</b>		34821.03	100

The cost of cultivation of chickpea (Rs /ha) of FPOs members is presented in Table 01. The table showed that per hectare operational cost and fixed cost incurred in the cultivation of Chickpea of member farmers of FPOs was estimated to be Rs. 12598.77 and Rs. 12598.77 per ha respectively. The average total cost of cultivation per hectare was found to be Rs. 34821.03. Out of this, operational cost was Rs. 19056.72 which accounted for 60.21 per cent of the total cost. The fixed cost was Rs. 12598.77 which accounted for 39.79 per cent of the total cost. Rental value of owned land was the largest component in the total cost contributing up to 33.16 per cent of the total cost followed by Human labour which was to the tune of 20.30 per cent. The interest on working capital, Depreciation on Implements & Farm Building and Plant Protection had very less contribution in the total cost which was 1.17 per cent, 2.48 per cent and 1.32 per

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cent, respectively. The depreciation of building and farm management were as found to be Rs/ha. 788.22 per ha. of cultivated land area (Pandayet al., 2021).

**Table 02. Cost of cultivation of chickpea for non-members (Rs. /ha)**

S. No.	Item wise of cost of cultivation	Amount(Rs.)	Percentage (%)	
i.	Human Labour	Family	5123.66	13.78
		Hired	1586.37	4.27
		<b>Total</b>	6710.03	18.05
ii.	Animal Labour	Hired	-	-
		Owned	837	2.56
		<b>Total</b>	837	2.56
iii.	Machine Labour	Hired	3329.86	9.17
		Owned	571.24	1.57
		<b>Total</b>	3901.1	10.74
iv.	Fertilizer & Manure	2332.92	6.38	
v.	Seed	3414.05	9.34	
vi.	Plant protection	466.46	1.27	
vii.	Irrigation Charges	2331.63	6.37	
viii.	Interest on Working Capital @7 per cent	400.68	1.09	
<b>1.</b>	<b>Total Operational Cost</b>	20393.87	55.80	
i.	Rental Value of Owned Land	10,500	28.72	
ii.	Rent Paid For Leased-in Land (tax/revenue charge)	52.31	0.16	
iii.	Depreciation on Implements & Farm Building	690.20	1.88	
iv.	Interest on Fixed Capital @12 per cent	1260	3.44	
<b>2.</b>	<b>Total fixed cost</b>	12502.51	34.20	
<b>3.</b>	<b>Total Costs [1+2]</b>	32896.38	90.00	
	Managerial cost (10% of total cost)	3289.638	10.0	
<b>4.</b>	<b>Total Cost of cultivation</b>	<b>36186.01</b>	<b>100</b>	

Per hectare operational cost and fixed cost incurred in the cultivation of chickpea of non-member farmers of FPO was estimated to be Rs. 20393.87 and Rs. 12502.51 per ha

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respectively. the average total cost of cultivation per hectare was found to be Rs. 36186.01 out of this, operational cost was Rs. 20393.87 which accounted for 55.80 per cent of the total cost. Fixed cost of non-member farmer was Rs. 12502.51 which accounted for 34.20 per cent of the total cost (Kumaret al., 2017). Rental value of owned land was the largest component in the total cost contributing up to 28.72 per cent of the total cost followed by Human labour which was to the tune of 18.05 per cent. Interest on working capital, depreciation on implements & farm building and plant protection had very less contribution in the total cost which was 1.09 per cent, 1.88 per cent and 1.27 per cent respectively. From the above observation it can be seen that the cost of cultivation of member farmers less than that non-member farmers of FPO. This difference was due to FPO provided timely, chiefly and quality input for member farmers as well as technical services and provided improved technology and modern infrastructure.

**Table 03. Returns in chickpea cultivation of FPOs members (Rs. /ha)**

S.No.	Items	Amount (Rs. /ha.)	(%)
1.	Gross return:		
i.	Main product	60576	95.31
ii.	By product	1787.75	4.69
2.	Total Return	<b>62363.75</b>	100
3.	Cost of cultivation	34821.03	-
<b>Net return</b>		<b>27542.72</b>	-
4.	Main Produce (Qt/ha.)	12.62	-
5.	By Produce (Qt/ha.)	3.49	-
6.	Cost of Production per quintal	2161.45	-
7.	Average sell Price main produce Per quintal	4800	-
8.	Average sell Price by produce Per quintal	512.25	-
9.	<b>Benefit cost ratio</b>	1:1.79	-

It was found that per hectare returns for FPO members from main product was Rs 60,576 which was also estimated 95.31 per cent of the total returns. Further the by-product yield was Rs. 1,787.75 per hectare and that is also contributing to the tune of 4.69 per cent in the total returns. While the net return obtained by the farmers from chickpea production in the state was Rs. 27,542.72 per hectare (Dubey et al., 2013).

**Table04 Returns in chickpea cultivation of non-members (Rs. /ha)**

S.No.	Items	Amount (Rs. /ha.)	(%)
1.	Gross return from		
i.	Main product	47608	96.36
ii.	By product	1500.89	3.64
2.	Total Return	<b>49,108.89</b>	100
3.	Cost of cultivation	36,186.01	-
<b>Net return</b>		<b>12,922.88</b>	-
4.	Main Produce (qtl/ha.)	10.82	
5.	By Produce (qtl/ha.)	2.93	
6.	Cost of Production per quintal	2631.70	-
7.	Average sell Price of main produce Per quintal	4400	-
8.	Average sell Price of by produce Per quintal	512.25	
9.	Benefit cost ratio	1:1.35	-

The per hectare returns analysis of FPOs member revealed that the member farmers return from main product was Rs 47,608 which formed 96.36 per cent of the total returns. Whereas the by-product return was Rs. 1500.89 per hectare and contributing to the tune of 3.64 per cent in the total returns. The net return obtained by the farmers from chickpea production in the state was Rs 11633.15 per hectare (Verma *et al.*, 2015).

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**Table 05. Cost concept of chickpea FPOs members**

S.No.	Cost concept	Amount( Rs/ha)	Percentage (%)
1.	Cost A <sub>1</sub>	14,832.88	42.59
2.	Cost A <sub>2</sub>	14,883.46	42.74
3.	Cost B <sub>1</sub>	16,143.34	46.36
4.	Cost B <sub>2</sub>	26,643.49	76.51
5.	Cost C <sub>1</sub>	21,155.46	60.75
6.	Cost C <sub>2</sub>	31,655.49	90.00
7.	Cost C <sub>3</sub> (Total cost)	34,821.03	100

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The according to CACP cost concept, various costs incurred by the respondent in chickpea cultivation viz., Cost A<sub>1</sub> amount of 14,832.88 Rs/ha (per cent) followed by Cost A<sub>2</sub>

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amount of 14,883.46 Rs/ha (per cent), Cost B<sub>1</sub> amount of 16,143.34Rs/ha (per cent), Cost B<sub>2</sub> amount of 26,643.49 Rs/ha (per cent), Cost C<sub>1</sub> amount of 21,155.46 Rs/ha (per cent), Cost C<sub>2</sub> amount of 31,655.49Rs/ha (per cent) and at last the total cost of 34,821.03 Rs/ha (per cent) viz., Cost C<sub>3</sub>.

**Table 06. Cost concept of chickpea producer non- member of FPOs**

S. No.	Cost concept	Amount ( Rs/ha)	Percentage (%)
1.	Cost A <sub>1</sub>	15,960.41	44.10
2.	Cost A <sub>2</sub>	16,012.72	44.25
3.	Cost B <sub>1</sub>	17,272.72	47.73
4.	Cost B <sub>2</sub>	27,772.72	76.74
5.	Cost C <sub>1</sub>	22,396.38	64.65
6.	Cost C <sub>2</sub>	32,896.38	90.00
7.	Cost C <sub>3</sub> (Total cost)	36,186.01	100

The CACP cost concept for nonFPOs members includes costs incurred on the chickpea cultivation viz., Cost A<sub>1</sub> amount of 15,960.41 Rs/ha (per cent) followed by Cost A<sub>2</sub> amount of 16,012.72 Rs/ha (per cent), Cost B<sub>1</sub> amount of 17,272.72 Rs/ha (per cent), Cost B<sub>2</sub> amount of 27,772.72 Rs/ha (per cent), Cost C<sub>1</sub> amount of 22,396.38 Rs/ha (per cent), Cost C<sub>2</sub> amount of 32896.38 Rs/ha (per cent) and at last the total cost of 36,186.01 Rs/ha (per cent) viz., Cost C<sub>3</sub>.

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### Conclusions

From the study, it was concluded that the cost of cultivation of respondents who were not the member of any FPO was higher as compared to the cost of cultivation of respondents who were a member of an FPO. However, it was observed that the gross return of an FPO member was higher than those of non-members. Similarly, net return of an FPO member was more than twice than that of a farmer who was not the member of any FPO in the study area.

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Comment [S32]: Where is it ?

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