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Impact of technological interventions among the chickpea beneficiaries about NFSM programme on income and productivity

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Abstract

The present study was investigated the various impact of technological interventions among the chickpea beneficiaries about NFSM programme on income and productivity in bemetara and mungeli district of Chhattisgarh state during the year 2016-17. Data was collected from beneficiaries farmers of chickpea production that were selected randomly from each selected 8 villages to make a sample size of 120 farmers of chickpea production about NFSM programme, with the help of a pre-tested interview schedule. The study reveals that out of all technological interventions obtained in NFSM majority of the respondents (60.83%) of wise use of pesticides and 59.17 per cent of use of machinery. The differences between impact of NFSM on income and productivity of chickpea beneficiaries before and after NFSM shown that, Total area 7.7 ha., Total production 617.26 q., Average productivity 3.89 q/ha, Total income Rs. 3901296 and Net income Rs. 20549/ha.

Keywords: technological interventions, chickpea, national food security mission (NFSM), productivity

Introduction

In view of the stagnating food-grains production and an increasing consumption need of the growing population, the National Development Council (NDC) in its 53rd meeting held on 29th May, 2007 adopted a resolution to launch a Food Security Mission comprising rice, wheat and pulses to increase the annual production by the end of the Eleventh Plan (2011-12). Accordingly, a Centrally Sponsored Scheme, National Food Security Mission (NFSM), was launched in October 2007. The Mission met with an overwhelming success and achieved the targeted additional production of rice, wheat and pulses.

Chickpea (*Cicer arietinum* L.) is the third most important food legume crop in the world. Chickpea is grown in the drier areas of the country as they are best suited for its production. Chickpea producing states in India are Madhya Pradesh (29.37%), Maharashtra (20.03%), Andhra Pradesh (15.48%), Rajasthan (9.73%), Karnataka (9.63%), Uttar Pradesh (6.42%) & Gujarat (3.57%) and Chhattisgarh in ninth position (Anonymous, 2011). In Chhattisgarh, the area, production and productivity of chickpea in 2010-2011 was 2.519, 2.415 and 891, respectively. During 2011-2012 Durg district having 1st position in cultivating area of chickpea 102.46 thousand ha with production of 110.99 thousand metric tons, Kawardha accounts 65.88 thousand ha., 58.30 thousand metric tons production, followed by Rajnandgaon 47.03 thousand ha and production 45.21 thousand metric tons, respectively. But the productivity of Durg district is less than other districts. Bemetara and Mungeli district is also most chickpea growing areas. Bemetara district in total chickpea cultivated areas 90.51 thousand ha and production 77.31 metric tons and it's a productivity is 854 kg/ ha. Mungeli district is total chickpea cultivated areas 25.81 thousand ha and production 18.06 metric tons and it's a productivity is 700 kg/ha.

Methodology

The study was conducted during the year 2016-17 in the Bemetara (Bemetara and Navagarh block) and Mungeli (Mungeli and Lormi block) districts of Chhattisgarh state. From each selected block, 2 villages were selected thus total 8 villages (Total 4 X 2 = 8) were selected on the basis of maximum availability of beneficiaries. From each selected village 15 beneficiaries' farmers of chickpea production, were randomly selected as respondents, in this way total (8x15) 120 farmers were selected for collection of data. Technological interventions defined as a change which is a result or consequences of an action or other cause or a change that results when something is done or happens.

Quantification of the variable is done by assigning score” 1” for the “Yes” and “0” for the “No”.

Impact of NFSM on income and productivity of chickpea

The average productivity (q/ha) of chickpea crop, as reported by respondents of the study area was recorded and presented in average. For analysis, actual yield of the crop were utilized. For overall analysis of productivity of chickpea crop were calculated and utilized.

Equation and formula used for calculating the productivity and income

A. Productivity of chickpea crop (q/ha) = $\frac{\text{Total yield (q)}}{\text{Area (ha)}}$

B. Income (Rs/ha) = Productivity (q) X Selling price (Rs/ha)

C. Cost of cultivation (Rs/ha) = Sum of all inputs (Rs/ha)

D. Net income (Rs/ha) = Gross (Rs/ha) – Total Cost (Rs/ha)

E. B: C Ratio = $\frac{\text{Gross income (Rs/ha)}}{\text{Cost (Rs/ha)}}$

Result and discussion

1. Technological interventions

The data indicated that out of all technological interventions obtained in NFSM majority of the respondents (60.83%) of

wise use of pesticides, 59.17 per cent of use of machinery, 56.67 per cent of adequate use of chemical fertilizers and 45.83 per cent of water management.

Table 1: Distribution of the respondents according to technological interventions obtained by them from NFSM

Sl. No.	Particulars	Frequency*	Percentage
1.	Use of machinery	71	59.17
2.	Wise use of pesticides	73	60.83
3.	Adequate use of chemical fertilizer	68	56.67
4.	Water management	55	45.83

* Data are based on multiple responses

2. Impact of NFSM on income and productivity of chickpea

The data regarding Table 01 Impact of NFSM on income and productivity of chickpea beneficiaries before NFSM shown that, Total area 125.70 ha, Total production 1605.18 q., Average productivity 12.77 q/ha, Total income Rs. 6099684 and Net income Rs. 33985/ha Followed by after NFSM Total area 133.40 ha, Total production 2222.44 q., Average productivity 16.66 q/ha, Total income Rs. 10000980 and Net income Rs. 54534/ha.

The differences between impact of NFSM on income and productivity of chickpea beneficiaries before and after NFSM shown that, Total area 7.7 ha., Total production 617.26 q. Average productivity 3.89 q/ha, Total income Rs. 3901296 and Net income Rs. 20549/ha.

Table 2: Distribution of respondents according to their income and productivity of chickpea crop in study area

Sl. No.	Particulars	Before NFSM	After NFSM	Difference
1.	Total area (in ha)	125.70	133.40	7.7
2.	Total production (in q)	1605.18	2222.44	617.26
3.	Average Productivity (q/ha)	12.77	16.66	3.89
4.	Total income (in Rs.)	6099684	10000980	3901296
5.	Net income (Rs./ha)	33985	54534	20549

Conclusion

The findings of the study is indicated that majority of respondents technological interventions by obtained them from NFSM to wise use of pesticides in chickpea beneficiaries. The studies indicated that perception of farmers regarding NFSM in before NFSM majority of respondent's medium level and after NFSM majority of respondent's medium level followed by difference between perception of farmers regarding NFSM before NFSM and after NFSM medium level.

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