Impact of National Food Security Mission (NFSM) on Income and Productivity in Adilabad District of Telangana

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Short Research Article

ABSTRACT

National Food Security Mission (NFSM) was launched in October 2007 with new targets of additional production of 25 million tons of food grains comprising of 10 million tons rice, 8 million tons of wheat, 4 million tons of pulses and 3 million tons of coarse cereals by the end of 12th Five Year Plan. Redgram is cultivated in 2.77 lakh hectares across Telangana state. It is the major crop for Mahabubnagar, Adilabad, Ranga Reddy, Medak, Nalgonda, Warangal, and Khammam districts. The present study was carried out in the Adilabad district of Telangana with sample of 105 respondents in the year 2020-21 and data was collected with the help of well-structured interview schedule. Before and after change in the income and production of the red gram under NFSM was

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determined. To determine impact on income and production, paired t test was run with the help of SPSS software. The result with the help of paired t-test concluded that change was witnessed in the income and production of the red gram beneficiaries with the intervention of NFSM Scheme.

1. INTRODUCTION

Agriculture and allied activities are the primary source of income for the majority of India's population. Food security is a must for the country's economic and social stability. The food security primarily has three objectives i.e. ensuring production of adequate food supplies, maximizing stability in the flow of supplies and securing access to available supplies on part of those who need them. Access to food has two components, first one is boosting agricultural productivity and the second one is adopting strategies to promote employment, social protection measures and cash transfer to the poor to improve their access to available food. National food security is another important step in a succession of policy-driven social protection measures aimed at supporting well-targeted food security and nutrition activities. The increased agricultural productivity and production will only serve as a safety net for the rapid growth of population. According to the FAO definition agreed at the World Food Summit-1996 and thereafter expanded upon at the 2001 Summit, "food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life". It suggests people will be food secure only if sufficient food is available accessible, and utilized by all [1]. With this purpose a centrally sponsored scheme, "National Food Security Mission" (NFSM) was launched in October 2007. The mission is being continued during 12th five year plan with new targets of additional production of food grains of 25 million tons of food grains comprising of 10 million tons rice, 8 million tons of wheat, 4 million tons of pulses and 3 million tons of coarse cereals by the end of 12th Five Year Plan (www.nfsm.gov.in) with an objective to increase production and productivity of major cereals and pulses. Redgram is cultivated in 2.77 lakh hectares across Telangana state. It is the major crop for Mahbubnagar, Adilabad, Ranga Reddy, Medak, Nalgonda, Warangal and Khammam districts (https://pjtsau.edu.in/crop.html).

The mission adopted twofold strategy to bridge the demand-supply gap. First strategy was to expand area, and the second was to bridge the productivity gap between potential and existing yield of food crops. Expansion of area approach was mainly confined to pulses and wheat only, and rice was mainly targeted for productivity enhancement. The chief measures adopted to augment the productivity included: (i) acceleration of quality seed production; (ii) emphasizing INM and IPM; (iii) promotion of new production technologies; (iv) supply of adequate and timely inputs; (v) popularizing improved farm implements; (vi) restoring soil fertility; and (vii) introduction of pilot projects like community generator and blue bull.

Over the last few years, the area and production of pulses in Telangana region of India has increased tremendously due to inception of Cluster Front Line Demonstrations concept at farmers' field. Field demonstration is a long term educational activity conducted in a systematic manner at farmers' fields to show worth of a new technology on "seeing is believing" idea [2]. A proper understanding of improved or recommended practices is prerequisite for its adoption by the farmers with this the present research was carried out with an objective to determine the 'Impact of National food security mission on income and productivity of redgram in Adilabad district'.

2. METHODOLOGY

The present study was carried out in Adilabad district of Telangana, the district was purposively selected as it has major area of cultivation under redgram and the production is also comparatively high. To study the impact of NFSM, Ex post facto research design was applied. Ex post facto research design is research in which the independent variable or variables have already occurred and in which the researcher starts with the observation of a dependent variable or variables (3). Three blocks namely Jainath, Talamadugu and Narnoor were purposively

selected for study as Cluster demonstration under NFSM on red gram were demonstrated in these blocks. Of these three blocks, one village from each block were selected based on the maximum number of beneficiaries, thus the data were collected from sample size of 105 respondents with the help of per tested interview schedule. A before and after study was carried out to determine the impact of NFSM on increase in income and productivity of redgram and result was analyzed with the help of SPSS 16 software and paired t test was used. The paired t test provides a hypothetical test of the difference between two population means for a pair of random sample whose difference are approximately normally distributed. Paired sample t-test is used in before and after studies or when the samples are matched pairs. Also, the paired samples t-test compares the means of two samples. It computes the difference between the two variables for each case and test to see if the average difference is significantly different from zero. Paired sample are two samples for which each observation in one sample is paired in a meaningful way with a particular observation in a second sample, here two observations are connected in a meaningful way. Pre and post, *i.e.,* before and after situations are studied by using Paired t test. The formula for paired test is as given below:

$$t = \frac{\bar{d}}{\sqrt{s2/n}}$$

Here,

$\bar{d}$= mean difference
s^2= Sample variance
n= Sample size
t= student t quintile with n-1 degree of freedom

3. RESULTS AND DISCUSSION

3.1 Change in Income and Production

The data regarding Table 1 shows that before the intervention of NFSM, the total area under cultivation was 76.3 ha, total production (595.14 q), average productivity (7.8 q/ha) and the average income was Rs.34,000/ha., whereas after the intervention of NFSM, the total area brought under red gram cultivation was 100.4 ha, total production was 944 q, average productivity was 9.4 q/ha and the average income was Rs. 53,000/ha.

The difference between the impact of NFSM in the total area was 24.1 ha, total production was 348.86 q, average productivity was 1.6 q/ha and the average income was Rs.19,000/ha. The probable reason is that more area under red gram cultivation is brought by the farmers by providing more improved varieties and hybrids free of cost, and the latest improved technologies are introduced to the farmers for reducing the cost of cultivation and enhancing the income of the farmers. Thus, NFSM contributes significantly in increasing the production and income of the farmers.

The Table 2 indicates that the "t" stat value is greater than "t" critical value which means that H_0 is rejected in favour of H_1 which states that, there is a significance difference between red gram production and income before and after the intervention of National Food Security Mission (NFSM) in another way it means that, the NFSM scheme has shown a positive impact on red gram production, productivity and income. The findings of the study was in line with Shah [4], Narain *et al.* [5], Babu *et al.* [6], Lakshmi *et al.* [2], Peter [7], Chaitanya *et al.* [8], Singh *et al.* [9], Marlabeedu *et al.* [10] and Gautham and Sujeet [11].

Table 1. Distribution of Respondents According to Their Income and Productivity of Redgram Crop

S. No.	Particulars	Before NFSM	After NFSM	Difference
1	Total Area (in ha)	76.3	100.4	24.1
2	Total Production (in q)	595.1	944	348.9
3	Average Productivity (q/ha)	7.8	9.4	1.6
4	Average Income (Rs. /ha)	34000	53000	19000

Table 2. Impact of Cluster Demonstration on Red Gram Production and Income

S. No.	Particulars	T.V.	T.C.V	C.V.	D.F.	P.V.	S/NS
1	Production	-32.2404	1.65	0.835	104	0.001	0.84**
2	Income	-46.3641	1.65	0.706	104	0.001	0.71**

TV=t value, TCV=t critical value, CV=Correlation value, DF=Degree of freedom, PV=P value, S=significant, NS=Non significant

4. CONCLUSION

The study concluded that with the intervention of the NFSM change in area, income, production and productivity in redgram crop of the farmers has been witnessed compared to before NFSM intervention. The interventions covered under NFSM-Pulses include Cluster Demonstrations on improved package of Practices, Demonstration on cropping system, Cropping system based training of farmers, Seed Distribution of HYVs, Manual Sprayer, Power sprayer, Water carrying pipes, Sprinkler set, Pump set, Seed drill, Ridge furrow planter, Rotavator, Multi crop thresher, Plant protection chemical and bio pesticides, weedicides, gypsum/phospho gypsum/bentonite sulphur, bio-fertilizers, micro nutrients, Local initiatives and Project Management team. This determines that with right intervention of technologies and timely advice increase in area, income and productivity of the farmers can be achieved. Likewise the perception of the farmers has changed towards NFSM and majority had adopted the schemes and brought major area under red gram.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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