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Evaluation of the National Food Security Mission's (NFSM) effect on wheat growers of Jabalpur district Madhya Pradesh

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Abstract

The study was conducted in Jabalpur district of Madhya Pradesh. Jabalpur district is located in the center of the state. The Jabalpur district comprises 7 blocks, out of which only one block, namely Shahpura was selected purposively because this block having maximum area under wheat as compared to other blocks. Shahpura block comprises of 203 villages, out of which six villages has been selected on the basis of maximum number of wheat growers benefited under NFSM programme. From each village 20 wheat growers has been selected by using simple random sampling method. Thus the total sample size was 120 wheat growers for the present investigation. The research design is the most important and crucial aspect of research methodology. It is the entire process of planning and carrying out the research. To seek the answer of the research question, an ex post-facto research design was used in the investigation. The statistical techniques of frequency, percentage, mean and correlation coefficient test were used to analyze the data collected.

Keywords: NFSM, wheat, growers, block, research, programme

1. Introduction

Wheat (*Triticum* spp.) is one of the most important cereal crops in the world and a staple food for a large portion of the global population. It belongs to the Poaceae (grass) family and is cultivated primarily for its grain, which is ground into flour and used for making bread, pasta, cakes, and other food products. Wheat contains about protein 12%, carbohydrate 71.2%, Mineral 1.5% and Fibre 1.2% but is deficient in the essential amino acid lysine. In India, wheat production for the 2024-25 seasons is estimated at a record 117.51 million ton, with an area of 32.76 million hec. and a yield of 3.58 ton./hec. (IPAD 2025). Uttar Pradesh is typically the largest wheat-producing state, followed by Madhya Pradesh, Punjab, Haryana, and Rajasthan.

Madhya Pradesh is a major wheat-producing state in India, known for its high protein wheat varieties like Sharbati and Durum. While the area under wheat cultivation has increased in recent years, wheat production in MP has seen a decline in the past three years. The area under wheat cultivation in Madhya Pradesh has increased by 44% in the past 15 years. In Madhya Pradesh, wheat production for 2023-2024 is estimated at a record 1132.92 Lakh ton, which is higher than the previous year's production. The area under wheat cultivation and its productivity have also seen increases. Specifically, the area increased by 5.46 per cent in 2022-23 compared to the previous year and the productivity was recorded at 32.98 quintals per hectare, slightly higher than the previous year's 32.73 quintals per hectare.

The Government of India launched the National Food Security Mission (NFSM) at the beginning of the 11th Five Year Plan in 2007, aiming to increase the production of rice by 10 million tonnes, wheat by 8 million tonnes and pulses by 2 million tonnes. The mission continued during the 12th Five Year Plan with revised targets of 25 million tonnes of additional food grain production, including 10 million tonnes of rice, 8 million tonnes of wheat, 4 million tonnes of pulses, and 3 million tonnes of coarse cereals. The key components of NFSM during this phase included: NFSM-Rice, NFSM-Wheat, NFSM-Pulses, NFSM-Coarse Cereals and NFSM-Commercial Crops. To boost wheat production and productivity, the National Food Security Mission – Wheat (NFSM-W) was implemented in 12 states: Bihar, Gujarat, Haryana, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Uttar Pradesh, West Bengal, Himachal Pradesh, and Uttarakhand. The primary goal of this initiative was to promote and integrate wheat production and protection technologies among farmers to achieve higher yields. In this mission training as well as required kit of inputs were also provided to farmers for this purpose particularly related to wheat. The kit has several eco-friendly inputs necessary for production and protection of Wheat crop.

The mission has been completed almost six years (2007-08 to 2011-12). Since sufficient time has been passed, in this context, it was felt to conduct impact study in the districts which is covered under NFSM-W to evaluate the performance of NFSM-W in Madhya Pradesh. The present study is an attempt to evaluate the impact assessment of National Food Security Mission (NFSM) of wheat growers of shahpura block of Jabalpur district with the following objectives.

Objectives of the study
1. To analyze the relationship between independent variable with the production of wheat under NFSM.
2. To study the various facilities extended by NFSM to wheat grower and difficulties to overcome them.
3. Constrain faced by the wheat growers under NFSM.

2. Materials and Methods

The study was carried out in the Jabalpur district of Madhya Pradesh, which is centrally located within the state. Geographically, the district lies between 22°49′ to 24°08′ North latitude and 79°21′ to 80°53′ East longitude. It is bordered by Damoh and Narsinghpur districts to the west, Shahdol and Mandla to the east, Katni and Panna to the north, and Seoni and Balaghat to the south. The district primarily falls within the Vindhyan plateau, which slopes towards the south, and the Narmada River separates it from Anuppur district. Jabalpur district consists of seven blocks, out of which Shahpura block was purposefully selected for the study, as it has the largest area under wheat cultivation. Shahpura comprises 203 villages, and six villages were chosen based on the highest number of wheat farmers benefiting from the NFSM program. In each of these selected villages, a list of NFSM wheat growers was prepared with assistance from RAEOs. From each village, 20 farmers were randomly selected using a simple random

sampling technique, resulting in a total sample size of 120 wheat growers for the study. The research design plays a critical role in the research process, involving comprehensive planning and execution. To address the research questions, an ex post-facto research design was adopted. Data were analyzed using statistical tools such as frequency, percentage, mean, and correlation coefficient.

Table 1: Blocks wise distribution of area and productivity of wheat in Jabalpur district (M.P.)

S. No.	Name of blocks	Area (000, ha)	Productivity (Q/ha)	
			Irrigated	Un-irrigated
1	Jabalpur	13	47	30
2.	Panagar	22	45	28
3.	Shahpura	24	45	32
4.	Shihora	16	45	30
5.	Majholi	19	50	30
6.	Patan	23	50	35
7.	Kundam	9	40	18

Source-Assistant Director of Agriculture Kisan Kalyan and Krishi Vikas, Jabalpur

3. Results and Discussion

3.1 Relationship of independent variable with change in wheat production

Table 2: Zero order correlation coefficient between 15 different variables

S. No.	Independent variables	Correlation coefficient (r-values)
1	Age	0.169^{NS}
2	Education	0.431**
3	Family size	-0.136^{NS}
4	Land holding	0.809**
5	Area under wheat	0.839**
6	No. of training received	0.375**
7	No. of visit of extension workers	0.323**
8	Farm power	0.585**
9	Material possession	0.719**
10	Annual income	0.785**
11	Extension participation	0.587**
12	Mass media exposure	-0.095^{NS}
13	Attitude of farmers towards NFSM	0.290**
14	Knowledge of improved wheat production technology	0.355**
15	Adoption of improved wheat production technology	0.288**

**significant at 0.01 per cent of probability level
NS = Non-significant

The zero-order correlation coefficient between 15 different variables and the change in wheat production is presented in Table 2. The data indicate that variables such as age, family size, and mass media exposure had a negative and non-significant correlation with changes in wheat production. In contrast, variables including education, landholding size, area under wheat cultivation, number of training programs attended, frequency of extension worker visits, availability of farm power, material possessions, annual income, participation in extension activities, farmers' attitudes towards the NFSM, knowledge of improved wheat production techniques, and the adoption of such technologies showed a positive and statistically significant correlation at the 1% level of probability with the change in wheat production among farmers. Similar finding were reported by Chaitra *et al.* and Roy *et al.*

3.2 Facilities extended to wheat growers under NFSM

Table 3: Distribution of wheat growers according to facilities provided by the NFSM

S. No.	Facilities	Frequency	Percentage	Rank
1	HYV seeds	107	89.16	I
2	Zinc Sulphate	85	70.83	VI
3	Bio-fertilizer	99	82.50	IV
4	Insecticide	105	87.50	II
5	Gypsum	77	64.16	VII
6	Field demonstration	89	74.16	V
7	Subsidy for agriculture equipment	100	83.33	III

Regarding the facilities expressed by the wheat growers under NFSM shown in Table 3. Out of total 89.16 per cent

agreed for high yielding variety, 70.83 per cent for fertilizer, 82.50 per cent for bio-fertilizer, 87.50 per cent for insecticides, 64.16 per cent for field demonstration, 83.33 per cent for sprinkler set and 74.16 per cent agreed to provided subsidy for agriculture equipment under NFSM.

Similar finding were reported by Naik *et al.*, Sukanya *et al.* and Singh *et al.*

3.3 Constraint faced by the wheat growers under NFSM

Table 4: Distribution of wheat growers according to constraint faced by them

S. No.	Constraint	Frequency	Percentage	Rank
1.	Transportation problem	87	72.50	III
2.	Problem in making Kisan Credit Card (KCC)	100	83.33	I
3.	Less rate of wheat in market	95	76.66	II
4.	lack of proper guidance under NFSM	78	65.00	V
5.	Untimely supply of desired inputs under NFSM	75	62.50	VI
6.	Untimely visit of extension worker	80	66.66	IV
7.	Problem in selling wheat to cooperative society	70	58.33	VII

The main constraint reported by the wheat growers under NFSM are shows in Table 4. Among several constraints, the majority of wheat growers (83.33%) were of the opinion that problem in making Kisan Credit Card (KCC), low rate of wheat in market (76.66%), transportation problem (72.50%), untimely visit of extension worker (66.66%), lack of proper guidance under NFSM (65.00%), untimely supply of desired inputs under NFSM (62.50%) of the wheat growers were of the opinion that inadequate and problems in selling wheat to cooperative society (58.33%). Similar finding were reported by Chaitra *et al.* and Singh *et al.*

4. Conclusion
The study reveals that the change in wheat production is significantly influenced by various socio-economic and technological factors. Variables such as education, land holding, area under wheat crop, number of trainings received, frequency of extension worker visits, farm power, material possession, annual income, extension participation, farmers' attitude toward the National Food Security Mission (NFSM), knowledge of improved wheat production technology, and adoption of these technologies exhibited a positive and statistically significant correlation with wheat production changes at a 1% probability level. On the other hand, changes in wheat production showed a negative and non-significant relationship with age, family size, and mass media exposure. Also, the data suggests that NFSM has been effective in providing critical inputs and support to wheat growers, contributing to improved agricultural practices and productivity, though some areas like field demonstrations could be enhanced for broader impact. While NFSM has provided valuable support, the presence of these constraints indicates the need for improved institutional support, timely delivery of services, better market linkages, and stronger extension services to ensure that the intended benefits of the mission fully reach the farming community.

Competing Interests
Authors have declared that no competing interests existing

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