



IMPACT OF NATIONAL FOOD SECURITY MISSION (NFSM) ON ANNUAL USAGE AND BENEFIT DERIVED FROM FARM EQUIPMENT IN CULTIVATION OF WHEAT IN MADHYA PRADESH

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Abstract- Madhya Pradesh contributes 17.5% of the total wheat production of country. National Food Security Mission (NFSM) launched during 11th Five Year Plan to enhance farm profitability so that the farming community retains its confidence in farming activity. This study confined to NFSM-Wheat for 300 beneficiaries from the two NFSM districts i.e. Harda (highest production) and Balaghat (lowest production) of Madhya Pradesh. The study revealed that the major source of awareness of NFSM among the sample beneficiaries was found to be Agriculture Department (99.7%) followed by T.V/radio (94%), farmers/ friends (93.3%), news paper (82.0%), input suppliers (11.3%), Krishi Vigyan Kendra (10.7%), State Agricultural Universities (6.7%) and Agri-Exhibitions (3.7%). The maximum benefits per HHs was found to be availed through rotavators (Rs. 84,500) followed by seed drills (Rs. 45,530), sprinklers (Rs. 21,809), pump sets (Rs. 21,599) and pipeline (Rs. 20,648), while in other items benefits varies from Rs. 387 to Rs. 3218.7/HH. The average total cost (Rs./HH benefited) was found to be Rs. 2,03,503 and they were benefited by 45.7 per cent subsidy. The imputed value for using farm equipments was found to be more in case of seed drill as compared to others. The maximum number of NFSM HHs (80%) expressed that irrigation water can be saved by using pipelines as it reduces labours and cost of cultivation. The use of sprinkler benefited also driving by saving water, good plant growth, reduction the cost of cultivation and solving the problem of shortage of labour in wheat cultivation.

Keywords- NFSM, Wheat, Awareness, Benefit, Farm Equipment.

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Introduction

The Government of India launched National Food Security Mission (NFSM) in 2007-08 at the beginning of 11th Five Year Plan. The NFSM Programme targeted to escalate production of food by the end of Eleventh Five Year Plan. Generating employment opportunities was also a key objective of NFSM. The NFSM target was to enhance farm profitability so that the farming community retains its confidence in farming activity. The National Food Security Mission is being implemented for wheat in 16 districts of Madhya Pradesh viz. Ashoknagar, Chhatarpur, East Nimar, Guna, Katni, Panna, Raisen, Rajgarh, Rewa, Sagar, Satna, Seoni, Shivpuri, Sidhi, Tikamgarh & Vidisha since its inception in totality as per the norms and guidelines of Government of India with these strategy and goals. The interventions i.e. demonstrations, distribution on subsidy, farm machines, farmers training, Integrated Pest Management, local initiatives, micro nutrients, production subsidy, project management team, publicity, seed minikits, soil amendments, water management and training of extension workers have been considered for dissemination of technologies and farm management practices for farmers.

Madhya Pradesh contributes 17.5% of the total wheat produced in the country. Sharbati and Durum Wheat have given an international identity to Madhya Pradesh. [1]. The state shared the highest increase in production of wheat over the previous year and was ranked in the top wheat producing states in the country. After launching National Food Security Mission (NFSM) during 11th Plan it has paid dividends in the productivity of wheat which was increased by 12% to 1908 Kg/ha. The State has also improved its position as the third largest wheat producing state in the country after Punjab and UP with a record-breaking production of 14.5 million tonnes of wheat in the fiscal year 2011-12 and 16.5 million tonnes in 2012-13.

Farm equipment plays an important role to accelerate the farm economy in rural sector of the country. In the NFSM, government provides subsidy for the purchase of their farm equipment to increase the productivity of crops [2]. Agricultural machineries and implements are an important factor in agriculture production and productivity enhancement. There are direct as well as indirect effects of agricultural machineries and implements on productivity through better use of other inputs, more efficient and timely completion of agricultural operations and increase in cropping intensity. The NFSM is extended to 12th Five Year Plan due to its success in achieving the targeted goal of production enhancement. It is essential to evaluate and measure the extent to which the programme and approach have stood up to the expectations and how the programme has benefited to the farmers.

Objectives

1. To identify the sources of awareness of NFSM-Wheat among Sample households.
2. To evaluate the impact of NFSM-Wheat on annual usage and benefit derived from farm equipments.

Materials and Methods

The present study was carried out by Agro-Economic Research Centre for Madhya Pradesh & Chhattisgarh, Jawaharlal Nehru Agriculture University, Jabalpur during the year 2014-15. A multi-stage sampling design was used for selection of respondents. At the first stage, two NFSM districts viz. Harda and Balaghat, which were reported the highest and the lowest wheat production, respectively were selected for the study [Table-1].

Table-1 District wise selected beneficiaries under NFSM

S. No.	District	Taluka	Village	Sample respondent (Beneficiary)
1	Harda	Khirkiya	Drigaliya	75
			Chaukadi	
			Lohayakhedi	
		Timarni	Pathanwada	75
			Sodalpur	
			Alampur	
	Dhangaon			
2	Balaghat	Waraseoni	Kochiwahi	75
			Budbuda	
			Sarra	
		Balaghat	Parshawada	75
			Bori	
			Katangi	
Total				300

Further two talukas i.e. Khirkia, Timarni from Harda district and Waraseoni, Balaghat from Balaghat were selected for the study. For the selection of beneficiary households in each Taluka, the beneficiary list was obtained from the Department of Agriculture/State Officials at the Taluka level. 75 beneficiaries were randomly selected from each Taluka. Primary household data were taken into consideration and were collected from the sample beneficiary using a pre-tested interview schedule. These data were pertaining to the agricultural year 2013-14.

Results

The findings of benefits availed under the programme by the NFSM beneficiaries through various interventions were (a) sources of awareness among the sample beneficiaries, (b) benefits availed by them and (c) impact of NFSM –Wheat on annual usage and benefits derived from farm equipments.

Sources of Awareness of NFSM

The major source of awareness of NFSM among the sample beneficiaries was found to be Agriculture Department (99.7%) followed by T.V./radio (94%), farmers/friends (93.3%), news paper (82.0%), input suppliers (11.3%), Krishi Vigyan Kendra (10.7%), State Agricultural Universities (6.7%) and Agri-Exhibitions (3.7%) as reported by sample HHs [Table-2]. Since the scheme is being implemented through Department of Farmers Welfare and Agriculture Development (Agriculture Department), the most of the farmers could be able to know about the scheme through this department, while the other major sources were found to be T.V./Radio, Farmers /Friends and news papers.

Table-2 Sources of Awareness of NFSM among the Sample Beneficiaries.

	Sources of Awareness	% of beneficiaries aware about NFSM
1	Agriculture Department	99.7
2	TV / Radio	94.0
3	Farmers/Friends	93.3
4	Newspaper	82.0
5	Krishi Vignana Kendra	10.7
6	Input Suppliers	11.3
7	State Agricultural Universities	6.7
8	Agri Exhibitions	3.7
9	Raitha Samparka Kendra	0.0
10	ZP/TP/GP	0.0

Benefits Availed by Sample Households

The total numbers of HHs benefited were found to be 544 in the area under study [Table-3]. The NFSM HHs who got hundred percent subsidy for production of certified seed (6), seed mini kits of HYV/hybrid Paddy (73), plant protection chemicals (79) and integrated pest management (79) were found to be benefited by Rs. 3219, Rs. 3084, Rs. 465 and Rs. 387 per HH, respectively. About 93 HHs were benefited by Knap sack sprayer and got benefits of Rs. 762/HH using subsidy of 87.5 per cent. For pipelines 69.9 percent subsidy was given which benefited 40 HHs by Rs. 20648/HH.

Table-3 Benefits Availed by Sample Households. (2007-08 to 2013-14)

Sl. No	Benefited Item	No. of beneficiaries benefitted & percentage	Avg. total cost (Rs. /HH benefitted)	Subsidy as a % of total cost
1	Production of seeds- Certified seed	6 (1.1)	3219	100.00
2	Seed minikits of high yielding varieties/hybrid Paddy	73 (13.4)	3084	100.00
3	Cono weeder	1 (0.2)	1500	40.0
4	Seed drills	33 (6.1)	45530	32.7
5	Rotavators	12 (2.2)	84500	39.0
6	Pump sets	54 (9.9)	21599	47.5
7	Knap Sack Sprayers (Manual and Power Operated)	93 (17.1)	762	87.5
8	Sprinkler	74 (13.6)	21809	55.1
9	Plant protection chemicals	79 (14.5)	465	100.0
10	Integrated Pest Management	79 (14.5)	387	100.0
11	Others (Pipeline etc.)	40 (7.4)	20648	69.9
Total		544 (100.0)	203503	45.7

The sprinklers were also distributed among 74 HHs with 55.1 per cent subsidy and availed the benefits of Rs. 21809/HH. The pump sets were also given 54 HHs with 47.5 per cent subsidy benefiting Rs. 21599/HH. Cono weeder was supplied to only one HH, who got the benefit of Rs. 1500 with 40 per cent subsidy. The rotavators were supplied to 12 HHs and seed drill to 33 HHs, who were benefited by Rs. 84500 and Rs. 45513/HH with 39.0 and 32.7 per cent subsidy respectively. Kakkar *et al.* (2014) [3] also reported that more than 37 per cent of the farmers received amount of subsidy in more than sixty days. Lengthy documentation procedure and delay in release of subsidies were the main problems faced by the farmers. To make the subsidies more effective, farmers suggested that criteria for availing subsidies need improvement so that most of the small and marginal farmers get more benefits. The maximum benefits per HHs was availed through rotavators (Rs. 84,500) followed by seed drills (Rs. 45,530), sprinklers (Rs. 21,809), pump sets (Rs. 21,599) and pipeline (Rs. 20,648), while the benefits derived from other items varied from Rs. 387 to Rs. 3219 /HH. The average total cost (Rs./HH benefitted) was found to be Rs. 2,03,503 and they were benefited by 45.7 per cent subsidy.

Impact of NFSM on annual usage and Benefit derived from farm equipment

The equipment from which per HH was benefited during the year for maximum number of days was found to be pipeline (23) followed by pump set and sprinkler (22), rotavator (14), sprayer (12) and seed drill (9) and cono weeder (8). The area covered per HH was found to be maximum in case of rotavator (23.1 acre) followed by seed drill (13.2 acre), sprinkler (6.5 acre), sprayer (6.4 acre), pipeline (5.6 acre), pump set (5.5 acre) and cono weeder (3.5 acre) [Table-4].

The imputed value in terms of Rs. /HH for using these equipments was found to be maximum in case of seed drill (Rs. 6955) followed by rotavator (Rs. 6792), sprinkler (Rs. 3180), pump set (Rs. 3124), pipeline (Rs. 2734), sprayer (Rs. 616) and cono weeder (Rs. 500). The HHs benefited by providing rotavator and seed drill on rent basis and got benefit of Rs. 19,750 and Rs. 10,037 per HH, respectively.

The NFSM HHs was benefited by using various farm equipments, which helped in driving benefits in various ways. The use of sprinkler benefited 56.8, 20.3, 12.2 and 10.8 per cent HHs in driving benefits by saving water, good plant growth, reduction in cost of cultivation and solving the problem of shortage of labour, respectively. The sprayer helped in control of weeds, good plant growth, timely operations and labour shortage as reported by 60.2, 23.7, 11.8 and 4.3 per cent of NFSM HHs, respectively. Pump sets were found to be beneficial in reduction of cost of cultivation, saving water, timely operations as expressed by 63, 20.4 and 16.7 per cent of NFSM HHs, respectively. Through, seed drill 36.4, 30.3, 24.2 and 9.1 per cent of NFSM HHs were benefited by reduction in cost of cultivation, timely operation, good plant growth, and solved the labour shortage, respectively. The maximum number of NFSM HHs (80%) expressed that water can be saved by using pipelines, 17.5 and 2.5 per cent expressed that pipelines are also useful in case of labour shortage and reduces the cost of cultivation, respectively. Rotavator was found useful in terms of good plant growth and control of weeds as

expressed by 58.3 and 41.7 per cent NFSM HHs. All the NFSM HHs reported that cono weeder was useful in case of labour shortage.

Table-4 Annual Usage and Benefits Derived from Farm Equipments under NFSM.

S. No	Name of the implement							
	Benefit derived	Sprinkler	Sprayer	Pump Set	Seed Drill	Pipe Lines	Rotavator	Cono weeder
Annual Usage								
	Numbers of beneficial	74	93	54	33	40	12	1
1	No. of days used per benefitted HH	22	12	22	9	23	14	8
2	Area covered per benefitted HH (acres)	6.5	6.4	5.5	13.2	5.6	23.1	3.5
3	Imputed value own use (Rs. / benefitted HH)	3180	616	3124	6955	2734	6792	500
4	Rented value (Rs. / benefitted HH)	0.0	0.0	0.0	10037	0.0	19750	0.0
Benefits Derived (% of benefitted HH)								
1	Solved labour shortage	10.8	4.3	0.0	9.1	17.5	0.0	100
2	Timely operations	0.0	11.8	16.7	30.3	0.0	0.0	0
3	Saved water	56.8	0.0	20.4	0.0	80.0	0.0	0
4	Weed control	0.0	60.2	0.0	0.0	0.0	41.7	0
5	Good plant growth	20.3	23.7	0.0	24.2	0.0	58.3	0
6	Reduced cost of cultivation	12.2	0.0	63.0	36.4	2.5	0.0	0

Conclusion

The major source of awareness of NFSM among the sample beneficiaries was found to be Agriculture Department followed by T.V/radio, farmers/ friends, news paper, input suppliers, Krishi Vigyan Kendra, State Agricultural Universities and Agri-Exhibitions.

The study showed positive impact of NFSM HHs in Wheat in the area under study. Farm equipment play an important role to accelerate the farm economy in rural sector of the country. In the NFSM, government provides subsidy for purchase of their farm equipment to increase the productivity of crops. An individual HHs received 32% (seed drill) to 87.5% (Knap Sack Sprayers) subsidy in NFSM. The impact of their farm equipment found to be positive as on average HH shared Rs. 500 (Cono weeder) to Rs. 6955 (Seed drill) per annum as imputed value of their farm equipment. The maximum area covered per HH by these equipments was found to be maximum in case of rotavator. The use of equipment benefited by saving water, good plant growth, reduction in cost of cultivation, control of weeds, timely operations and solving the problem of shortage of labour. All the NFSM HHs reported that cono weeder is useful in case of labour shortage.

Conflict of Interest: None declared

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