Innovations

Impact of National Food Security Mission (NFSM) in Improving Agricultural Productivity in Andhra Pradesh (A Case Study of Selected Districts of NFSM Paddy Crop in A.P)

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Abstract: *Food production is the base for food security. The Food and Agricultural Organization (FAO) defines it as: "Food Security as a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life." The study is based on primary data from two districts viz Srikakulam and Ananthapur from both NFSM and non-NFSM beneficiaries in Andhra Pradesh state with standard questionnaire. The study multi-stage sample design was used. The two districts were selected based on highest and lowest production of paddy crop. In the second stage 2 mandals from each district, total 4 mandals selected. Finally 30 NFSM beneficiary and 15 non beneficiary farmers were selected from each mandal, total 45*4=180 samples were selected in two districts in Andhra Pradesh according methodology. The study main objective is mainly explain the effect of NFSM scheme on income of the beneficiary farmers of paddy crop in selected Districts and to know the constraints and factors that influences the adoption of interventions and performance NFSM scheme in Andhra Pradesh. The study is mainly Impact of NFSM Scheme cropping pattern, cost and income returns and facing constraints of both NFSM and Non-NFSM beneficiary paddy cultivated farmers in Andhra Pradesh State.*

Key words: *Food security, climate, irrigation, credit and impact of NFSM*

I. Introduction

Food security is the state of current food availability at various levels in people's homes, food under state control including in Public Distribution System in countries like India and at national levels in food production conditions and food available for distribution at optimal costs, including shipping costs. As for the evidence from the granaries, that were present in ancient China and Egypt, it is easy to decipher that it is not a concept of recent origin and efforts have been made by different generations to different times for food storage and distribution to eliminate food insecurity. These granaries served to provide food in times of famine and such a system ensure that food security is not compromised in times of crisis such as famine, floods and other vagaries of nature. However, it was not until the 1974 World the Food Congress was held in the wake of the massive famine in Bangladesh that devastated many known systems and in the two years before this year that the term 'food security' has become popular and known to everyone. Even then, food security as a term it was only applied at the national level by the ruling governments. When there is enough food to feed all its populations and eat well consumption to meet the nutritional needs of people including all strata the society was considered a food secure country. Amount of food which is stored and distributed should also take into account fluctuations in food production and prices.

Food production is the base for food security. The Food and Agricultural Organization (FAO) defines it as: "Food Security as a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life."

"Food security for a household exists when all its members have it access to sufficient food for an active and healthy life. Individuals who are in safety do not live in hunger or fear of starvation." On the other hand according to the United States Department of Agriculture (USDA), "food insecurity is a situation of limited or uncertain availability of nutritionally adequate and safe food of food or limited or uncertain ability to obtain socially acceptable food acceptable ways." Food security involves a degree of resilience to the future interruption or unavailability of critical food supplies due to various risk factors including drought, traffic problems, fuel shortages and economic instability. The United Nations (UN) has recognized the right

to food. The Declaration of Human Rights of 1948 and has since noted that it is vitally important to enjoyment of all other rights.

II. NFSM in INDIA:

National Food Security Mission (NFSM) is launched by Government of India in 2007. It is a central scheme for five years which will increase production and productivity of wheat, rice and pulses to ensure sustainable food security for all sections of the country's population. The aim is to bridge the gap in the yield of these crops diffusion of improved technologies and farm management practices to the beginning of the 11th five-year plan (2007 to 2012). This is crop development system that aims to restore soil health and achieve additional production, and extension of improved technologies i.e. HYV seeds, micronutrients, soil appendix, integrated pest management, farm machinery and resources conservation technologies together with capacity building of farmers. The main interventions covered by the NFSM include rice demonstrations, wheat and pulses, distribution of improved varieties/hybrid seeds, as required plant and soil protection techniques/energy management, efficient water/application tools, cropping system based training and awarding local initiatives to the best performing districts.

"NFSM-wheat has been implemented in 142 districts of 9 states and the NFSM pulse production program (A3P) was implemented in 468 districts of 16 states in the country. With these strategies and objectives was the NFSM implemented in 561 districts of 27 states in the country (GOI 2013). Together with the NFSM, RKVY and ATMA programs were also launched during the same period. Besides several other state and centrally sponsored ones programs ran concurrently with the NFSM program. With everyone's help the above efforts of the central and state governments, rice production by the end of the 11^{th} five-year plan, increased by 12.1 million tonnes of wheat production by 19.1 million tonnes and the production of pulses by 3 million tons as compared to the production during the base year 2006-07. A total amount during the 11^{th} Five Year Plan, Rs.4500 crores was spent under NFSM according to Government of India data for 2014. (GOI, 2014).

III. Main objectives of the study:

- To present the profile of selected two districts of Andhra Pradesh Socio-economic profile in general agricultural profile in particular.
- To assess the effect of NFSM scheme on income of the beneficiary farmers of paddy crop in selected Districts of Andhra Pradesh.
- To study the constraints and factors that influences the adoption of interventions and performance NFSM scheme.

IV. Methodology:

The study is based on Primary and Secondary data for selected Paddy crop in the state of Andhra Pradesh. A multi-stage sampling design was used to select NFSM beneficiaries and non-beneficiaries of Paddy farmers. The study covers two NFSM districts viz Srikakulam and Ananthapur in Andhra Pradesh state according to highest and lowest paddy production among NFSM districts as per NFSM study methodology. A total of 4 mandals were selected from two districts, in the second stage from each district drawing of one mandal from the nearby district the third stage 30 NFSM-Paddy beneficiaries from each mandal, were selected and 15 non-beneficiaries totaling 90 households in each NFSM district.

A total of 180 households (120 beneficiaries and 60 non-beneficiaries) were selected for the study. To select beneficiary households in each mandal, beneficiary lists were collected from the Mandal Agriculture Offices. After obtaining the list of beneficiaries, households were selected to receive the benefits of various components under the NFSM programme. The Primary data on households was collected mainly for the agricultural year 2018-19.

V. Review of literature:

In the period before the Green Revolution, the growth rate of production of cereals and agricultural commodities as a whole during the decade 1960-61 to 1979 slowed down compared to the period 1949-50 to 1959-60. The gross harvested area increased by 2.1 percent between 1949-50 and 1959-69. While production grew by 3.3 percent in the same period. However, during the period 1960-61 to 1970-71, the gross area under cultivation increased by only 0.6 per cent, while production increased by 2.1 per cent. Similar results were obtained for districts included in the Intensive Agricultural Development Program (Rao, 1975).

The period after the Green Revolution is divided into two phases, 1966-67 to 1970-71 and 1970-71 to 1974-75. In the first phase, the area under HYV crops – wheat, paddy, maize and bajra increased almost eight times. Although paddy yields did not increase as much as wheat, the production of the two crops together helped increase overall food availability. In the

second phase, after a peak of 108 million tons in 1971, production declined in the following two years. All the problems of the pre-green revolution have reappeared. The HYV program reached a stage of stagnation until 1975-76 (Dasgupta, 1977).
Sharma (1986) argues that the variability of pulse yields in non-irrigated areas, pest and insect problems and non-availability of quality seed are the main factors forcing farmers to shift away from pulses once better irrigation facilities become available. The study recommends various interventions with a combination of price and non-price measures such as promotion of short duration summer varieties of moong and cowpea, intercropping in irrigated areas, use of rice fallow for pulses and mixed cropping and intercropping harvest in rainfed areas. The study also highlights the importance of procurement and distribution of pulses by state authorities, strengthening the marketing system and improving the extension system.

Swarna (1989) analyzed growth trends at the state level and shows that pulses face competition from cereals in only five irrigated (or wet) states. In the remaining drier states, where much of the pulse production takes place, pulses do not face competition from cereals. AERC (2001) is an important study and probably the only study based on primary data collected in all pulse growing states. This study highlights the following problem areas in descending order of importance – i) unavailability of high-yielding and short-duration pulses, ii) lack of extension, training and credit facilities iii) lower relative profitability iv) pests and post-harvest losses .
According to Ramachandran (1982): there is a collective of famers, scientists, government and other agencies that are taking full advantage of the green revolution and increasing the production of food grains. Despite the higher agricultural production compared to the population. The overall food deficit has increased significantly. He analyzed FAO data to compare per capita food consumption among countries and concluded that India ranks last in terms of per capita amount consumed and nutritional value. Another problem the country was facing, he said, was food shortages, which were mainly caused by high fluctuations in production levels. The author is of the opinion that substantial increases in population are not a problem if employment is provided to everyone of working age and each active worker is able to produce far more than he consumes. There is an uneven distribution of food between individual groups of the population.

VI. Results and Discussions:

Cultivation patterns in the area depend primarily on the availability of seasonal irrigation. The cropping pattern shown in Table 1 that cereal occupies the largest share of the total area of 80.15 percent in the beneficiary households, while the accounts for 69.99 percent in the non-beneficiary households. It is important to note that among cereals, rice alone accounts for about 77.80 percent and 67.85 per cent of the total cropped area in terms of beneficiaries and non-beneficiaries respectively. This was expected, as the targeted samples were drawn from rice-dominated areas, and this is also the reason for the high proportion of rice among the farmers who benefited from the NFSM program. Noted here that the NFSM review was limited to the rice portion of the present study only.

The next most important crop category was the oil seed crop group, accounting for about 8.90 per cent and 12.93 per cent for favored HH and non-beneficiary HH, respectively. Pulses crop category which reported for about 7.70 percent and 10.75 percent by the beneficiaries and non-beneficiaries, respectively. The share of area under other crops was relatively higher in beneficiary HHs as compared with the non-beneficiary HHs.

1. Costs per acre and returns of Selected NFSM and Non-NFSM Paddy Farmers

The details on approximates of costs and returns (per acre of GCA) among sample households are presented in Table 1 It can be seen from the table that for paddy, a major cereal crop for which the average productivity level was found to be significantly higher among beneficiary households as compared with the non-beneficiary households. Specifically, with respect to maize productivity, beneficiary household's productivity (23.57 qtls/acre) was several times higher than the non-beneficiary household (8 qtls/acre) due the fact that the former category grown maize. The net income per acre for paddy was higher by 45.46 percent among beneficiary household as compared with non-beneficiary household which might be due to the crucial interventions taken up under NFSM programme.
In the case of pulse crops, there was not much difference in the productivity between the beneficiary and non-beneficiary households. With respect to groundnut, the net return per acre realized by beneficiary households was Rs 6500, where as this figure reduced to Rs. 1600 per acre in case of non-beneficiary households. Interestingly, cotton productivity showed lower productivity by 19 percent for beneficiary households (18.35qtls/acre) as compared with non-beneficiary households (22.53 qtls/acre).

Table -1: Crop wise per acre costs and returns

S.No	Crops	NFSM				Non-NFSM			
		Yield per acres (qtls.)	Gross returns/ acre	Total cost/acre	Net returns/acre	Yield per acres (qtls.)	Gross returns/ acre	Total cost/acre	Net returns/acre
1	Cereals								
2	Paddy	25	39000	22500	16500	20	29400	20400	9000
3	Maize	23.57	30214	18129	12086	8	20000	15000	5000
4	Jowar								
5	Ragi	5	13500	8100	5400	4	12533	9867	2667
6	Pulses								
7	Bengal gram								
8	Red gram								
9	Green gram	6.1	24121	14541	9581	3	3600	2000	1600
10	Black gram								
11	Other pulses								
12	Oilseeds								
13	Groundnut	7	14500	8000	6500	5	10500	8000	2500
14	Sunflower								
15	Sesamum								
16	Castor								
17	Other oilseeds								
18	Others								
19	Cotton	18.5	85900	52000	33900	22	92700	60480	32220
20	Sugarcane								
21	Vegetables								
22	Fruits	5.48	76363	45769	30594	4.81	61329	39664	21665

2. **Impact of benefit utilized under NFSM among selected beneficiaries of a sample of paddy farmers**

The impact of NFSM was measured on seven parameters for each benefit category. The impact of benefits used under the NFSM programs is shown in Table 2. The overall impact of the NFSM program on paddy farmers in terms of increased productivity was between 5 to 10 percent as perceived by about 54 percent of the beneficiaries. All recipients of the mini-seed sets, integrated pest management, indicated a 5 to 10 percent increase in their productivity. In addition, seed and minikit recipients believed they could get a higher price for their production because of the benefits of quality seeds. The increase in the cost of their production due to quality improvement was also around 5 to 10 percent, as reported by 44 percent of beneficiaries.

Table -2: Impact of the benefit availed under NFSM among the selected Paddy farmers sample beneficiaries

Sl. No.	Benefit derived/Name of the implement	Impact	Certified Seed	Pump sets	Power weeder	Sprayers	Micro nutrients	INM	IPM	Training	Other benefit
1	% increase in productivity	No change	0.00	6.00	39.00	12.00	0.00	0.00	0.00	50.00	0.00
		1 to 10%	22.00	50.50	38.50	43.50	55.00	0.00	0.00	50.00	0.00
		10 to 15%	73.00	33.50	19.50	39.50	40.00	0.00	100.00	0.00	0.00
		>15%	5.00	10.00	3.00	5.00	5.00	0.00	0.00	0.00	0.00
2	% fall in material cost	No change	2.00	0.00	24.00	10.00	25.00	0.00	100.00	25.00	0.00
		1 to 10%	33.00	0.00	39.50	57.50	50.00	0.00	0.00	70.00	0.00
		10 to 15%	61.00	0.00	34.00	32.50	25.00	0.00	0.00	5.00	0.00
		>15%	4.00	0.00	2.50	0.00	0.00	0.00	0.00	0.00	0.00
3	% fall in water use	No change	15.50	0.00	24.00	1.00	0.00	0.00	0.00	75.00	0.00
		1 to 10%	56.00	0.00	50.50	43.00	0.00	0.00	0.00	25.00	0.00
		10 to 15%	28.50	0.00	23.50	52.50	0.00	0.00	0.00	0.00	0.00
		>15%	0.00	0.00	2.00	3.50	0.00	0.00	0.00	0.00	0.00
4	% fall in labour cost	No change	17.50	6.00	0.00	8.00	34.00	0.00	100.00	39.00	0.00
		1 to 10%	25.00	50.50	0.00	57.00	54.00	0.00	0.00	43.00	0.00
		10 to 15%	54.00	33.50	100.00	35.00	12.00	0.00	0.00	18.00	0.00
		>15%	3.50	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	% reduction in losses after intervention	No change	0.00	6.00	39.50	20.00	15.00	0.00	100.00	19.00	0.00
		1 to 10%	50.50	50.50	47.00	45.00	33.00	0.00	0.00	56.00	0.00
		10 to 15%	44.50	33.50	12.50	34.00	49.00	0.00	0.00	25.00	0.00
		>15%	5.00	10.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00
6	% increase in price of the output because of better quality	No change	1.00	6.00	45.00	31.00	39.00	0.00	0.00	13.00	0.00
		1 to 10%	24.00	50.50	51.50	59.00	44.00	0.00	100.00	64.00	0.00
		10 to 15%	67.50	33.50	3.50	10.00	15.00	0.00	0.00	23.00	0.00
		>15%	7.50	10.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
7	Improvement in soil health (% of HHs who have mentioned "yes")	No change	15.00	0.00	0.00	24.00	0.00	0.00	0.00	50.00	0.00
		1 to 10%	70.00	0.00	0.00	76.00	0.00	0.00	0.00	50.00	0.00
		10 to 15%	13.00	0.00	0.00	0.00	80.00	0.00	100.00	0.00	0.00
		>15%	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00

Source: Field Survey

A decrease in labor costs was one of the most important effects expected from mechanization. Except for machinery/tool beneficiaries, almost all beneficiaries of mechanization expressed the view that they could reduce labor costs

by 5 to 10 percent. About one-third of beneficiaries experienced a 5 to 10 percent reduction in losses as a result of the NFSM intervention. However, losses were not reduced for recipients of IPM, cultivators and multi-crop planters.

About 33 percent of all beneficiaries experienced improvements in soil conditions. Beneficiaries who experienced a positive improvement in soil health were more than 80 percent for micronutrients and lime. All the beneficiaries who used IPM reported that they experienced improvements in soil conditions. The aim of the survey was also to find out whether there was any improvement in human health as a result of these interventions. Since the improvement was not immediate and not readily apparent, the beneficiaries could not assess this point. The overall impact of NFSM was found to be positive on all the above measurement parameters in the range of 5 to 10 percent.

Table 3: Cost of production and yield of paddy per acre: Kharif season during 2018-19

Item	NFSM	Non-NFSM
Cost of Production per acre		
Human labour (Hired) (man days)	4075	5589
Human labour (Family / exchange) (man days)	1508	1463
Bullock labour (pair per day)	22	77
Machine labour (hours)	5437	7981
Seed / nursery/seedling (Kgs/Number)	465	539
Farm yard manure/organic/bio chemical (tonnes)	766	427
Chemical Fertiliser (Kgs)	2850	3472
Pesticides (Kgs/Ltrs)	1599	1778
Irrigation cost including water cess (Rs)	358	389
Harvesting and threshing cost (Rs.)	996	803
Package, Transport and marketing (Rs)	325	259
Total cost (Rs)	18401	22777
Yield value		
Output (Rs)	40847	37439
By-product (Rs)	5032	4040
Total income (Rs)	45879	41479
Net income (Rs)	27478	18702
Cost per quintal (Rs)	663	879
Returns per quintal (Rs)	1471	1444
Profit per quintal (Rs)	808	565

Source: Field work data

Data provided by farmers on irrigation charges were also included for other crops. Thus, the irrigation charge for the paddy field was taken from the total charges. To calculate the electricity charges, the number of hours required to run the engine to pump water to sufficiently irrigate the rice, the energy/electricity consumed by the engine for so many hours and the charge per unit of power. The results indicate that the farmers of the study area cultivated not only Kharif paddy but also Rabi paddy. However, except for a few sample farmers, almost all the 180 sample households cultivated only Kharif paddy. However, costs and returns have been tabulated for Kharif paddy and Rabi paddy separately. Cost per acre and return are shown in Table 3 and Table 4 for Kharif and Rabi respectively. Kharif paddy yield and net yields per acre harvested by model beneficiary farmers were 7 percent and 47 percent higher as compared to non-beneficiary farmers. Conversely, costs per acre for beneficiaries were 18 percent lower compared to non- beneficiaries. Beneficiary farmers have realized paddy production of up to 40 quintals per acre depending on the cultivated area and cultivation method.

On the other hand, the yield of almost all the non-beneficiary farmers revolved around an average yield of around 26 quintals irrespective of the number of acres of paddy fields cultivated. The reasons identified for such a large difference in productivity levels between beneficiaries and non-beneficiaries were: (i) beneficiaries maintained the plant population per acre

by using the optimum amount of quality seed, while non-beneficiaries exceeded the recommended seed level; ii) beneficiary farmers applied higher amount of organic fertilizers (1.28 tonns/acre) for paddy cultivation compared to non-beneficiary farmers (0.47 tons/acre). Although the beneficiaries also used chemical fertilizers, it was less than the beneficiaries. This indicates a conscious use of inputs by HH beneficiaries in protecting soil health by using more organic fertilizers and less chemical fertilizers. Both of the above reasons can even be called an intangible positive impact of the NFSM program on the researched area. Because the training and demonstrations conducted under the NFSM program have convinced the beneficiary farmers of the benefits of proper seeding and organic manure application. The excess amount of seed not only had a negative effect on yield, but also increased the cost of cultivation for non-recipient farmers.

About 91 percent and 94 percent of the total costs were accounted for by labour, other inputs, and machinery in the case of beneficiaries and non-beneficiaries, respectively. The rest was post-harvest costs. Labor accounted for about 30 percent of the total cost of paddy field cultivation by beneficiary and non-beneficiary farmers. This was primarily because beneficiaries paid higher labor costs per person per day than non-beneficiaries. Annual irrigation fees were approximately 1.95 percent and 1.72 percent of total expenditure for beneficiaries and non-beneficiaries, respectively. A cost-return analysis of rice confirmed that hiring machinery such as electric threshers, sprayers and sprayers greatly increased the number of beneficiaries. Especially for non-beneficiaries who cultivated less than 10 acres of rice.

Regarding the cost of cultivation and returns per acre of rice, the following conclusions can be drawn: (i) Beneficiaries spent less and produced and earned more. Thus, the Kharif paddy results gave testimony that the NFSM program had a very noticeable positive impact on the paddy farming community. The impact was manifold: first, the program enlightened beneficiaries through training and demonstrations on ways and means of reducing costs; secondly, the supply of inputs such as quality seeds and farm implements under NFSM has enabled farmers to increase Kharif rice productivity; (ii) Direct seeding (DSS) and SRI methods of rice cultivation were supposed to have lower cultivation costs and higher productivity. However, the analysis did not follow this more significantly; iii) it can be implicitly stated that NFSM has had its impact in reducing the cost of paddy cultivation and increasing the productivity level of the beneficiaries

The table 4 shows that per acre cost and return of Rabi paddy in 2018-19. Only a select few farmers among the beneficiaries and non-beneficiaries have grown paddy in the second season, which is mainly due to limited access to irrigation water.

Table 4: Cost of production and yield of paddy per acre: Rabi season during 2018-19

Item	NFSM	Non-NFSM
Cost of Production per acre		
Human labour (Hired) (man days)	6000	8171
Human labour (Family / exchange) (man days)	10400	1876
Bullock labour (pair per day)	-	-
Machine labour (hours)	5794	6882
Seed / nursery/seedling (Kgs/Number)	720	73
Farm yard manure/organic/bio chemical (tonnes)	1100	324
Chemical Fertiliser (Kgs)	320	751
Pesticides (Kgs/Ltrs)	-	165
Irrigation cost including water cess (Rs)	3394	1265
Harvesting and threshing cost (Rs.)	800	513
Package, Transport and marketing (Rs)	256	141
Total cost (Rs)	28784	20159
Yield value		
Output (Rs)	32000	20659
By-product (Rs)	4500	3595
Total income (Rs)	36500	24254
Net income (Rs)	7716	4095
Cost per quintal (Rs)	1439	1251
Returns per quintal (Rs)	1600	1282
Profit per quintal (Rs)	161	31

Source: Field work data

Summer paddy yields and net yields per acre harvested by model farmers were 24 percent and 88 percent higher, respectively, compared to non- beneficiary farmers. It is interesting to note that the cost per acre for beneficiaries was 40 percent higher compared to non-beneficiaries. Note that the profit per metric cent for recipients was 43 percent lower compared to non-beneficiaries. This is mainly due to the price of the output; the non-beneficiaries received a relatively higher amount than the beneficiaries (table 6.20). It can be concluded that NFSM has concentrated on Kharif paddy and Rabi paddy does not seem to have benefited significantly from the NFSM program in any way.

The table -5 reveals that the factors influencing participation of paddy farmers in NFSM scheme in the study area i.e. both Srikakulam and Ananthapur districts by using logistic regression analysis. Out of the ten independent variables, six independent variables are turned out to be statistically significant at different probability levels. The livelihood ratio test statistic was estimated to be 114 in the fitted logistic regression equation which reveals that 114 out of 180 respondents were likely to participate in NFSM in the study area with respect to select independent variables being taken into consideration.

The coefficient 9 of independent variables like operational holdings (X_3), family size (X_4) and farm asset value (X_{10}) are turned out to be statistically significant at 1% probability level. The odds ratio of operational holdings (X_3) indicates that a one per cent change in operational landholding leads to there may be 41.1 per cent likely to decrease of participation of respondents in NFSM. The odds ratio of Family size (X_4) indicates that a one person increase in family size leads to there may be 2.2 times likely to participate in NFSM and Vice-versa.

Table-5: Logistic Regression Analysis of Factors Influencing Participation Of Paddy Farmers In NFSM (Dependent Variable: 1 For NFSM Beneficiaries: Otherwise 0)

Independent Variable	Coefficient	Standard Error	Z-Value	Odds Ratio
Constant	-1.019	2.174	-0.47	
Age (Years) X1	.011	.015	0.72	1.01929
No of years of schooling X2	-0.022	0.065	0.35	1.023237
Operational holdings X3	-0.889*	0.130	-6.79	0.4109035
Family size X4	0.780*	0.227	3.42	2.181901
Caste (SC&ST) X5	0.057	0.520	0.11	1.058744
Caste OBC X6	0.711***	0.409	1.74	2.036367
Farm Income X7	0.000*	6.460	7.79	1.00005
Ratio of NIA to NSA X8	-1.373	1.961	-0.70	0.2532504
Credit availed per Acre X9	.000**	7.630	2.55	1.000019
Farm Asset value X10	-.000*	2.560	-4.66	0.999988
No. of Observations =180 LR Chi2 (10) = 215.32 Prob>Chi2 = 0.0000 Pseudo R2 =0.485				

Note: ** indicates significant at 1 per cent level*
*** indicates significant at 5 per cent level*
**** indicates significant at 10 per cent level*

With regard to odds ratio of farm income (X_7) indicates that a one per cent change in farm income leads to there may be per cent likely to participate in NFSM. With regard to odds ratio of Farm Asset Value (X_{10}) indicates that a one per cent change in the value of farm asset leads to there may be 99 per cent likely to participate in NFSM.

The important variable credit availed per acre (X_9) is also turned out to be statistically significant at 5% probability level, the odds ratio of this variable indicates that a one per cent change in credit availed per acre leads to there may be 1.1 per cent likely to participate in NFSM. The coefficient of variable caste OBC (X_6) is also statistically significant at 10% probability level. The odds ratio indicates that the respondent belongs to OBC leads to there may be 2.04 times likely to participate in NFSM.

Policy Implications from The Study:

1. The NFSM regime should ensure timely supply of sufficient inputs to farmers.
2. To incorporate institutional credit to provide quick loans to farmers under the NFSM programme.
3. Conduct various programs including training programmes, Gram Sabha, group meetings and agricultural programs at village and mandal level. Sourcing should be done through local language electronic and print media.
4. The needy farmers should consider under the NFSM scheme irrespective of political and caste considerations without much delay.

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