

Impact of S.F.D.A. on the Adoption of Crop Technology by the Participant Small Farmers of South Arcot District

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A study on the impact of S.F.D.A. on the adoption of crop technology by the participant small farmers of South Arcot district of Tamil Nadu revealed that the participation in S.F.D.A. as borrower for sinking irrigation well or deepening the existing well had not resulted in the better adoption of improved cultivation practices. Lack of knowledge was one of the major reasons for the non-adoption of improved cultivation practices. Illiteracy was a barrier in maintaining farm records. The S.F.D.A. should make special efforts in educating small farmers on crop technology. Since majority of them are illiterates the extension methods should necessarily include more of personal contact through farm and home visits. Promoting functional literacy will enable the small farmers to have farm appraisal by maintaining farm records.

Small Farmers Development Agency (S.F.D.A.), South Arcot district, is a scheme launched during 1971 by the Government of India in collaboration with the Tamil Nadu Government. One of the major problems of small farmers was lack of assured irrigation facilities. Therefore the scheme launched a credit programme for the small farmers (the farmers owning three to five acres of dry land or 1.5 to 2.5 acres of irrigated land) to construct new irrigation well or to deepen the existing old well. The credit programme was packed by educational programmes to help the small farmers adopt improved cultivation practices. This evaluative study was undertaken to find out the impact of S.F.D.A. programmes on the adoption of crop technology by the well loan participant small farmers.

MATERIAL AND METHODS

The SFDA scheme was implemented only in 12 out of 34 Blocks during 1971. Of the 12 Blocks, Nellikuppam Block was purposively chosen since it had considerable number of well loan beneficiaries (>50). All the villages in that block, where loans for constructing new well or deepening the old well were advanced to the small farmers upto March 1973 were listed separately. The villages having less than five participants were deleted. The participants and the nonparticipants in the remaining villages were written alphabetically; from the list, 20 farmers were randomly selected. A matching sample of 20 non-participant small farmers were randomly selected from the same set of villages where participant had been chosen. To identify

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the non-participant small farmers, the following set of criteria was used : He should own 1.5 to 2.5 acres of irrigated land or three to five acres of dry land, he should not have participated in any S.F.D.A. programme and he should have constructed a new irrigation well or deepened the existing well during 1970 to 1973.

An interview schedule for data collection was developed including the items relating to crop technology that were recommended by the S.F.D.A. after having discussed with the District Agricultural Officer (S.F.D.A.), and the Deputy Agricultural Officers. The data were collected by personal interview technique with the help of pre-tested interview schedule in Tamil, during August 1974 on extent of high yielding varieties used, the fertilizer used, the plant protection measures taken and the farm management records maintained. Scores were allotted to the items as shown below :

ITEMS	SCORE
H.Y.V. seed—not used for any crop grown	0
—used for some of the crops grown	1
—used for all the crops grown	2
Fertilizer —not used for any crop grown	0
—used for some of the crops grown	1
—used for all the crops grown	2
Plant protection measure— not adopted	
—for any crop	0
—adopted for some of the crops grown	1
—adopted for all the crops grown	2

No farm management record maintained	0
Few important records maintained	1
All the important records maintained (Inventory, Production, Income, and Expenditure records)	2

Thus, the maximum possible score was eight for the adoption items with respect to crop technology.

The respondent's adoption quotient was calculated by using the formula

$$\text{Adoption quotient} = \frac{\text{Actual score obtained}}{\text{Maximum score possible}} \times 100$$

The score for each respondent was obtained for adoption of improved cultivation practices. Based on the adoption quotient scores obtained by the respondents, the adoption levels were grouped into low, medium, and high using the sample (n = 40) mean (13.39) and standard deviation (43.13).

Adoption levels	Criteria considered	Adoption quotient scores
Low	Below $\bar{X} - 1\sigma$	Below 29.74
Medium	$\bar{X} - 1\sigma$ to $\bar{X} + 1\sigma$	29.74-56.52
High	Above $\bar{X} + 1\sigma$	Above 56.52

Chi-square test was applied to 2 x C contingency table to find out if the two variables are independent or associated using the formula as suggested by Sundararaj *et al.* (1972) :

$$X^2 = \frac{\sum_{j=1}^c \frac{f^2_{.j}}{c_j} - \frac{r^2_{.1}}{N}}{\left\{ \frac{r_1}{N} \right\} \left\{ \frac{r_2}{N} \right\}}$$

RESULTS AND DISCUSSION

To find out the influence of S.F.D.A. programmes on the adoption, the data obtained from 20 well loan participants and 20 non-participants were compared and analysed (Table). Chi-square test

TABLE. General adoption level of participants and non-participants on new technology.

Category	Level of adoption with respect to crop technology						Chi-square findings
	LOW		MEDIUM		HIGH		
	No.	%	No.	%	No.	%	
Well loan : Participants (n=20)	6	30	11	55	3	15	X ² =1.32 (d.f.2)N.S.
Non-parti- pants(n=20)	3	15	13	65	4	20	
Total	9	23	24	60	7	17	

did not show any association between the participation in S.F.D.A. and the adoption of crop technology. The participants did not differ from the non-participants in the adoption level of crop technology. Thus, the data revealed that the participation in S.F.D.A. as borrower for sinking irrigation well or deepening the existing well had not resulted in the better adoption of improved cultivation practices.

Further analysis of the data on the individual items revealed that majority

of the participants adopted recommended high yielding varieties for sum of the crops grown (80 per cent), fertilizer for some of the crops grown (70 per cent), and plant protection measures for some of the crops grown(65 per cent). It was also found that among the fertilizer adopted participants, only 10 per cent of them followed recommended dose and that too for only to one of their crops.

Most of the non-participants adopted high yielding varieties for some of the crops grown (80 per cent), fertilizer for all the crops grown (60 per cent), and the plant protection measures for some of the crops grown (75 per cent). Most of the participants and the non-participants did not use farm management records.

The reasons expressed by the non-adopters, both the participants and the non-participants, for the non-adoption of practices were lack of information on high yielding varieties (65%) non-availability of H. Y. V. seeds (25 per cent), requirement of high cash expenditure (10 per cent), and the involvement of risk (8 per cent). Lack of money (28 per cent), non-availability of fertilizers (25 per cent), lack of knowledge about the fertilisers use (8 per cent), and high cost of fertilizers (5 per cent) were the reasons for not using fertilizers to their crops. Insignificant attack of pests and diseases (55 per cent), the notion that plant protection measures do not give more profits, lack of knowledge about the use of plant protection chemicals (13 per cent), and hazards to human beings (5 per cent), were indicated as the reasons for the non-adop-

tion of plant protection measures. Lack of knowledge about the use of farm management records (77 per cent), lack of education (35 per cent) and lack of skill in the use of records (28 per cent) were the reasons for the non-adoption of farm management records.

It can be seen from the above findings that the lack of knowledge is the primary reason for the non-adoption of many recommended practices. It is, therefore, suggested that the S.F.D.A. should intensify the educational programmes on crop technology. From the survey, it was also found that most of the small farmers were illiterates (67 per cent). In view of this low educational level, the extension methods should necessarily include more of personal contact through farm and home

visits by extension workers. Promoting functional literacy among the small farmers will enable them to have better farm appraisal by maintaining farm management records.

They should also be given short term credit in time to grow high yielding varieties with package of practices.

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