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excess may be held till the price is increased to a favourable level. Another interesting feature that may be noted in this plan is that in going from the last but one phase of the programme to the last phase, it can be seen that the disposal activity February-April capital replaced the disposal activity wet land. This means that instead of keeping 3.20 acres of land as idle, it would fetch more (about Rs. 124) to utilize all the land and keep the February-April capital idle.

### *Conclusions*

In the first plan, when only the crops are considered, it is found that the 10 acres of wet land is divided into 7.11 acres for paddy and 2.89 acres for sugarcane (jaggery) and 10 acres of dry land for tobacco.

In the second plan, when the non-farm business activity is also integrated with the crop plan, it is found that reducing 0.48 acres of sugarcane in favour of paddy would make the non-farm activity expand to 3.66 times the existing level, increasing the net income by Rs. 582.

In the third plan, keeping the non-farm business activity in the plan and using the incomes generated in the middle of the plan to crops still continuing, it is found that the acreage under sugarcane (jaggery) can be increased to 3.39 acres, reducing simultaneously the acreage under paddy to 6.61 acres and non-farm activity to 2.88 times the existing level but increasing the net income further by Rs. 588. In the last stage it is seen that keeping capital idle, instead of land is more profitable. This seems fully valid because all the income generated in the middle may not be used for the plan as some quantity of paddy may be kept for home consumption and in that case the surplus capital will be reduced to insignificance.

D. RADHAKRISHNA\*

### **FARMER CHARACTERISTICS ASSOCIATED WITH THE ADOPTION AND DIFFUSION OF IMPROVED FARM PRACTICES**

Intensive efforts are made to motivate the farmers to increase the production by adopting improved farm practices since the inception of the "Grow More Food Campaign" during the Second World War. Despite these efforts and the theoretical and practical justifications for improved farm practices it has been observed by extension workers that these practices are not followed by all farmers.

This note makes an attempt to explore (1) the relationship of selected personal and socio-economic characteristics of farmers to the adoption of improved farm practices; and (2) the extent to which these farmers are reached by various communication media for adoption of improved farm practices.

### *Method of Study*

Data for this study were secured by personal interview method from a total of 106 farmers of Bhadravati National Extension Service Block in the Chanda district in Maharashtra State during the summer of 1958. This random sample

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of farmers was selected from three village level workers' circles—Chora, Bhamdeli and Ghodpeth. The Bhadravati Block was inaugurated on the 2nd October, 1953 and is a relatively backward area. The main crops grown are paddy, jowar, cotton and wheat.

The criterion for selecting new farm practices was that the practice was recommended by NES and applicable to all farms except those using green manure. The practices selected were: improved implements, improved seed, use of insecticides and fungicides, inoculation of cattle, bunding of fields and adoption of cattle breeding practices. It was, however, found that no farmer has adopted seven or more practices.

### Results

*The Function of Status of the Farmer :* To study the relationship between certain characteristics of farmers and the adoption of improved farm practices various hypotheses were formulated based on past researches in U.S.A. A review of past researches reveals that the adoption of improved farm practices is influenced by the status of the farmer. The status factors considered in this study were age, education, social status as indicated by caste and economic status as indicated by farm size operated by the farmer.

The following hypotheses were tested using the chi-square test. (i) Young farmers are likely to adopt more improved farm practices ; (ii) the more the education an individual has, the more likely he is to adopt new farm practices ; (iii) higher the social status an individual has, the more likely he is to adopt greater number of improved farm practices ; (iv) larger the size of land owned by an individual, the more likely he is to adopt greater number of improved farm practices.

Table I presents the results of the analysis of data (See Appendix I).

TABLE I—COEFFICIENT OF CORRELATION BETWEEN SOCIO-ECONOMIC VARIABLES AND ADOPTION OF IMPROVED FARM PRACTICES

Characteristics	X <sup>2</sup>	Degree of Freedom	Level of Significance
1. Age .. .. .	9.65	12	Not significant at .05
2. Education .. .. .	25.63	8	Significant at .01
3. Social status (castewise) ..	9.31	6	Not significant at .05
4. Size-group of Farm ..	20.36	16	Not significant at .05

It may be noted from the table that none of the socio-economic characteristics of farmers except the level of education are significantly related to the adoption of improved farm practices. Education is an important factor for the adoption of recommended farm practices ; the X<sup>2</sup> of education and the adoption of improved farm practices was significant at .01 level of probability with 8 degrees of

freedom and showed a positive association between the two variables. An analysis of the level of education and the number of farm practices adopted by the selected farmers revealed that more than one-fifth of the farmers was illiterate and more than half of them had not adopted a single farm practice. More than one-third adopted 2 to 4 practices and one-twelfth adopted 7-8 practices. Farmers with primary and middle school education tended to adopt half of the recommended practices and those with high school and college education were likely to adopt greater number of new practices.

A perusal of the frequency tables in Appendix I may indicate association between age, social status as indicated by caste and economic status as indicated by size-group of farms of the respondents and adoption of recommended farm practices. However these relationships are likely to be more accidental than otherwise because our analysis of  $X^2$  does not substantiate the existence of significant relations between the adoption of recommended farm practices and the above factors.

#### *Sources of Information*

An analysis of the sources of information regarding new techniques availed of by farmers would show that those who adopt more of new techniques use a number of sources. The analysis would further show that the farmers with progressive outlook regarding adoption of improved techniques use more of impersonal and official sources, others rely on personal acquaintances as sources of information and the village level worker. This may be illustrated as under :

Farmers who adopted not a single practice had scarcely contacted the sources of farm information. All of them reported having contact with the personal sources of information ; but none of them received information from the printed page. Among the personal sources, village level workers and other farmers were mostly consulted by these farmers.

The village level worker was also the most useful source of information for the high level adopters. This is due to the fact that he is easily approachable in a village and always ready to render help with all means at his command. High level adopters were better in contact with the Agriculture Extension Officer than the low level adopters. They had also discussed the suitability of the practice with their friends and *Patil* of their villages. Only one farmer in the low-adopter group had given the demonstration as the source of his information. A few farmers get the farm information from the magazines, newspapers and books. These farmers are of high socio-economic status. Moreover, journals and books giving farm information in simple local language are rare.

Since the  $X^2$  test is not applied to the data relating to the sources of information and adoption, the conclusions reported above are broad indications. Future studies can refine the measures used here in order to arrive at a better predictive device.

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## APPENDIX I

TABLE I—PERCENTAGE OF RESPONDENTS CLASSIFIED BY AGE AND NUMBER OF IMPROVED FARM PRACTICES ADOPTED

Age-Group				No. of farm practices			Total Respondents
				0—1	2—4	5—6	
Below 20	years	..	..	3	—	—	1
21-30	"	..	..	12	18	23	17
31-40	"	..	..	35	42	41	40
41-50	"	..	..	18	14	23	17
51-60	"	..	..	21	20	4	17
61-70	"	..	..	8	6	9	7
71 and over	"	..	..	3	—	—	1
Total				100	100	100	100

TABLE II—PERCENTAGE OF RESPONDENTS CLASSIFIED BY EDUCATION AND NUMBER OF IMPROVED FARM PRACTICES ADOPTED

Level of Education				No. of farm practices			Total Respondents
				0—1	2—4	5—6	
				N-34	N-50	N-22	N-106
Illiterate	..	..	..	44	14	9	23
Primary	..	..	..	50	52	32	47
Middle School	..	..	..	6	20	32	18
High School	..	..	..	—	14	18	10
College	..	..	..	—	—	9	2
Total				100	100	100	100

TABLE III—PERCENTAGE OF RESPONDENTS CLASSIFIED BY CASTES AND THE NUMBER OF IMPROVED FARM PRACTICES ADOPTED

Castes				No. of farm practices			Total Respondents
				0—1	2—4	5—6	
				N-34	N-50	N-22	N-106
Upper castes	..	..	..	70	86	100	84
Artisan	..	..	..	9	2	—	4
Low castes	..	..	..	15	6	—	7
Scheduled Castes and Tribes	..	..	..	6	6	—	5
Total				100	100	100	100

TABLE IV—PERCENTAGE OF RESPONDENTS CLASSIFIED BY THE SIZE-GROUP OF FARMS AND THE NUMBER OF IMPROVED FARM PRACTICES ADOPTED

Size-Group of Farms				No. of farm practices			Total Respondents
				0—1	2—4	5—6	
				N-34	N-50	N-22	N-106
Below 5 acres	..	..	..	12	4	—	5
6-10	"	..	..	14	8	4	10
11-15	"	..	..	12	12	13	12
16-20	"	..	..	12	4	9	8
21-25	"	..	..	9	12	9	10
26-50	"	..	..	41	32	28	34
51-75	"	..	..	—	10	32	11
76-100	"	..	..	—	10	—	5
101 and over	"	..	..	—	8	5	5
Total				100	100	100	100