EXTENSION CONTACTS IN RELATION TO ADOPTION OF AGRICULTURAL PRACTICES AND SOCIO-ECONOMIC STATUS OF FARMERS.

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Introduction

The extension workers are engaged in bringing about improvements in the economic and social standards of the people by providing them with knowledge of practical value. Among the many methods employed by the Extension agency in achieving these objectives, extension contacts of various types are very important. While, it is admitted on all hands that the extension contacts greatly accelerate the adoption of agricultural practices, empirical evidence to indicate the exact extent of this influence is very scarce. In the present study, the influence of contacts of various extension workers with the farmers of Ludhiana Block, on the level of adoption of practices has been studied. The relationship existing between frequency of extension contacts and the Educational and Economic status of farmers has also been investigated.

Methodology

The data was collected from two hundred farmers of Ludhiana block who were selected through stratified random sampling. For the purpose of knowing the effect of extension contacts on the level of adoption, five agricultural practices namely, wheat C-273, use of fertilizers, mechanical threshing of wheat, green manuring, and solar heat treatment of wheat were chosen.

The extension contacts included in th investigation are the visits of, village lev workers, agricultural Extension Officers, Blo Development Officers, and other Extensio workers, to the farmers and vice versa. The farmers' participation in activities arranged b Extension agency viz. training camps, trainin courses, tours, meetings, field trips, Mela (Fairs), exhibitions also included the contact studied. A period of six months precedin this study was kept in view for ascertaining the frequency of Extension Contacts from the respondents. The relationship of Educatior and Economic status (based on size of farm and Gross income) with that of Extensior Contacts was found by collecting the relevant information from the respondents. The data were collected on a specially structured interview schedule.

Objectives

The two-fold objectives of this study are :—

1. To determine the relationship betwee frequency of Extension Contacts ar adoption of the chosen agricultur practices.
2. To find out the relationship betwe the Extension Contacts and Educ tional and Economic status of t farmers.

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Review of Literature

Coleman (1951) observed a direct relationship between Extension Contacts and the level f adoption of practices. He also found that ıe educated persons are more often reached y Extension people than the uneducated ırmers. In another study, Coleman (1955) oted that farmers with large holdings were ıost often contacted and they were also found o adopt more practices than operators with mall holdings. He further stated that, "the extent and nature of contacts within the community is important in the diffusion of ideas." Studies conducted by a large number of investigators like Gross (1949), Lionberger (1952), and Bose (1961), support this conclusion that contacts with formal and informal agencies are significantly related to the adoption of practices.

Results

The results in respect of the three facets of this study are presented hereafter under the following headings:—

(i) Extension contacts and adoption of Practices.

(ii) Extension contacts and education of respondents.

(iii) Extension contacts and economic status of respondents.

Extension Contacts and Adoption of Farm Practices

The frequency of Extension contacts as it affects the level of adoption of practices would be seen in the figures in the following table.

TABLE-I

Extension contacts and Adoption of farm practices

A significant relationship between frequency of Extension contacts with that of average index of adoption is readily evident from the figures in the above table. The average index of adoption of the persons with a low frequency of contacts stands at 2.41 but it increases consistently to 3.23 and 4.44 as the frequency of contacts rises to medium and high respec-

TABLE 1

Extension contacts and Adoption of farm practices

Frequency of Extension Contacts	*CATAGORIES OF ADOPTERS*								*Average index of adoption*	*Level of significance.*
	Low 0-2 Scores		*Medium 3 Scores*		*High (above 3)*		*Total*			
	No.	%	*No.*	%	*No,*	%	*No.*	%		
Low (0—15 Scores)	39	57.35	21	30.88	8	11.76	68	100	2.41	at 5%
Medium (16—30 Scores)	20	18.69	39	36.44	48	44.87	107	100	3.23	at 5%
High (Above 30 Scores)	—	—	3	12.00	22	88.00	25	100	4.44	at 1%
Total.		.50	63	31.50	78	39.50	200	100		

Chi. Squ. Value 62.42 @ 4 d. f.

tively. The differences in the average index of adoption of farmers reporting low and high contacts with Extension agency were found to be significant even at 0.01% level. Such differences between farmers having low and medium contacts are significant at 0.05% level only. And so are differences between those having medium and high contacts. Thus, it is apparent that the average adoption index increases in direct proportion to the frequency of contacts.

It is interesting to note that not a single respondent having high contacts with Extension agency fell in the category of low adopters. Conversely it is also noteworthy that hardly any high adoptors have low Extension contacts. Thus, it can be concluded that, other things being constant, the higher the contacts a person has with the Extension agency, more are the number of improved practices followed by him.

Extension contacts and Education of Respondents

The data in respect of the educational level of a farmer and the frequency of Extension contacts are set out in Table-2.

TABLE 2

Extension Contact and Farmers' Education

Educational Level	EXTENSION CONTACTS								Average index of Extension contacts	Level of significance
	Low		Medium		High		Total			
	No.	%	No.	%	No.	%	No.	%		
Low (0-1 Score)	56	45.78	58	47.93	7	6.29	121	100	7.21	—
Medium (2-3 Scores)	8	17.77	28	62.22	9	20.01	45	100	10.92	at 5%
High (Above 3 Scores)	4	11.76	21	61.76	9	26.48	34	100	13.57	Not significant
Total	68	34.00	107	53.50	25	12.50	200	100		at 1%

Chi. Sq. Value=21.93@ 4 d.f.

Extension contacts and farmers' Education

From the above table, it seems clear that as the educational level rises, frequency o Extension contacts has a tendency to increas The average index of Extension contacts f farmers of low level of Education is 7.21. Th index rises to 10.92 for farmers with mediu level of Education and further goes up to 13. when the level of education moves upward.

The differences are significant at 0.01% and 0.05% in the case of low and high ; an low and medium educational level respect tively. However no significant differences were recorded among persons of medium an high educational level with respect to average index of Extension contacts. It shows that the better educated farmers are considerably much ahead of the poorly educated farmers in developing and maintaining contacts with the Extension agency. It appears probable that the Extension workers are concentrating their activities on farmers with higher educational achievement, because these people have better receptivity to adoption of innovations.

Extension contacts and economic status of respondents

The data in table 3 depict the trend o

TABLE 3

Extension contacts and farmers' Economic statns

Economic Status	EXTENSION CONTACTS								Average index of Extension contacts	Level of significanc
	Low		Medium		High		Total			
	No,	%	No.	%	No.	%	No.	%		
ow (0-10 Scores)	40	66.66	20	33.33	—	—	60	100	5.07	at 5%
edium (11-30 Scores)	26	24.74	67	62.03	15	13.32	108	100	11.23	Not Significant
igh (above 30 Score)	2	5.71	20	57.12	10	37.17	32	100	15.19	at 1%
Total	68	34.00	107	53.50	25	12.50	200	100		

Chi, Sq. Value 30.37 @ 4 d.f.

contacts as influenced by the Economic status of the farmers.

TABLE-3

Extension contacts and farmers' Economic status

A close perusal of the figures in table 3 eems to indicate that with an increase in the economic status of farmers, the frequency of xtension contacts also increases. The average ndex of extension contacts increases from .07 to 11.23 and 15.19 as the economic status f the farmers rises from low to medium and igh respectively. It is note-worthy that in his study no farmer with low economic status ad high extension contacts. The differences the average Index of Extension contacts etween farmers of low and high economic atus categories are significant at 0.01% level. etween low and medium categories, these ifferences are significant at 0.05% only while he differences are statistically not significant etween farmers of medium and high economic status.

onclusions.

The above findings seem to show that the gher contacts are instrumental in increasing doption. Extension contacts are known to be the result of the reciprocal initiative of the farmers and the extension workers. It can be stated that adoption of improved agricultural practices is considerably dependent on the contacts of a farmer with the extension agency whether at his own initiative or through the efforts of extension worker.

While collating the educational and economic status of the farmers with the frequency of Extension contacts, the study establishes quite conclusively that it is the persons with higher educational and economic status, who are receiving greater attention from the agency. This finding can be disquieting because it raises many fundamental and basic questions. Is it that the less educated and poorer farmers are denied the opportunity of enough Extension contact because of the difficulty involved in breaking their initial resistance ? Or is it that the extension workers are trying to produce physical achievements by concentrating their efforts on the well placed and educated farmers who are likely to be more responsive ?

Since the great majority of the farmers

have low education and poor economic standards, it is obvious that this maior segment of population is remaining bereft of the facilities available through the Extension services. Such a state of affairs is not only out of keeping with an egalitarian society, but it also shows up a serious defect in the functioning of the Extension Services.

Summary

In this paper an attempt has been made to study the relationship between the frequency of Extension contacts and level of adoption on the one hand and the relationship among the frequency of extension contacts and the educational and economic status of the farmers on the other. This is expected to be of value to the extension agency and research workers interested in programmes of rural development.

Data for the study were obtained through a personal interview with 200 farmers in 1963 as a part of the study entitled "A study of some important factors affecting the adoption of a few selected agricultural practices by the cultivators of Ludhiana (India) Community Development Block." The main inferences from this study are that frequency of contacts with Extension agency is significantly related to the adoption of Agricultural practices. Further, the Extension agency has concentrated its contacts with farmers having high educational and economic status. On the other hand, the farmers with low education and poor economical levels respectively are less frequently contacted by the Extension Agency.

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THE PILOT AREA APPROACH IN THE NETHERLANDS

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In the period 1953-1956 an experiment as a new extension procedure, intended to be ed as an integral part of rural development ans, was carried out in the Netherlands rough 2 pilot villages. A joint farm and ome approach was introduced in 2 hamlets omprising about 30 neighbouring farms each, here the group approach in extension work a temporarily intensive nature was carried t along systematic lines by extension prog-mme planning based on a previous survey nd finalized by an evaluation of the results btained. The experiment served in the mean-me as a demonstration, attracting some ten housand visitors from the Netherlands and broad.

Since 1956 this extension procedure is being pplied on a large scale for rural areas in the rocess of development, in so-called "pilot-eas." In 1963 these numbered nearly 100, vering about one quarter of the agricultural reage and comprising approximately one ird of the agricultural holdings in the untry as a whole. The great regional fferences in production costs of milk—the in produce for small farms—were the origi-l motive for starting pilot areas.

tegories :—The pilot areas are meant to celerate rural development, improvement of ernal production and living conditions in developing countryside through systema-intensive extension work in the regions con-ned. They may be distinguished by the following characteristics :—

a. less advanced rural regions, where, as is expected, extension work will permit a considerable improvement ;

b. rural regions, where a rather fast and far reaching improvement of production and living conditions will have to take place by land consolidation. On these the programmes have to synchronize kind with intensity of extension work. About three-quarters of the pilot areas belong to this category ;

c. rural regions, where not only improvements of the rural structure is involved, but the total socio-economic structure of the region may also have to be changed by the establishment of industrialization centres. This category presents the most complex problems especially because more ministries are engaged in the overall development plan. The rural pilot area plan as such can only form a part of and will have to be subordinated to the overall development plan for the region.

Choice of the areas : The number of the pilot areas is determined by the amount of money made available by the government. The alloca tion is carried out by the national agricultural extension council in consultation with the provincial councils. A preliminary survey as to the relative backwardness of the rural regions was made by the socigrafic branch of

rector General Extension Affairs, Netherlands, the Hague.

the agricultural economics research institute in co-operation with the agricultural extension service. Furthermore consideration is given to regions where consolidation schemes will be carried out and for which a long term plan had been set up. These regions cover about one fifth of the total agricultural area.

It is difficult in practice to achieve an equilibrium between technical, economic and social standards in order to get indications for priority to be given to the various regions, apart from the fact that for reason of state policy an even distribution over the country as a whole has to be regarded. Finally the capacity of the existing regional extension services to handle the additional extension work properly must be taken into consideration.

Size of the areas : There is a wide variation in size of the pilot areas, ranging from somewhat more than 100 farms covering 1500 hectares to 4000 farms covering 25,000 hectares. Experience has taught that the ideal size would be one with 200 to 300 farms with one additional extension-officer in order to ensure a close co-operation between the extension service, the pilot area committee and the population within the area. In cases where a larger area is necessary—as by the consolidation scheme or that required for the establishment of industrialization centres—sub-areas should be formed with a co-ordinating committee for the area as a whole.

The planning procedure : The plans for the pilot areas are made within the frame of broad general outlines issued by the national agricultural extension council, which together with the provincial councils supervise the programmes. A national sub-committee for rural home economics is assisting these councils in regard to the home economics part.

The general outlines were changed and im proved twice within a period of eight year to fall in line with the experience gained. Th may be regarded as a good indication for ex tension work, which has to remain a dynam enterprise with flexibility in outlook and readiness to take into account the fast str tural changes going on, especially in the ar concerned.

The plan itself has to be set up primari by the pilot area committee to be selecte amongst the rural population, both male an female, in consultation with the respectiv rural organizations, the extension office acting as advisory members of the committe It may be regarded essential to emphasize th aspect as it is meant to stimulate :

a. the self-reliance of the population agains the tendency of professional rural develop ment and even of the extension office who direct the plan. The profession extension personnel will have to confin themselves to providing basic informatio as to the factual situation, formulatin the priorities chosen by the people an drawing up the annual plan of work. Th alpha and omega of real progress lies aft all in the effective co-operation with t people and in the stimulation of their se reliance.

b. the achievement of one integrated pla associating to the maximum extent, ag culture and rural home economics.

The selection and training of "lo leaders" in the pilot areas—within and outs the committee—need thorough considerati **The period** : The total pilot period may divided into :—

a. one or more years' preparatory per during which a survey has to be car

out providing a base for a long term plan to be built up. The extension service is engaged to a great extent in this survey, which if handled properly may, in the meantime, arouse the necessary public interest and that of the rural population for the plan. Practical courses in agriculture (including farm management) and rural home economics, along with extension work as to social aspects are particularly effective in this period.

four years' main period of intensive extension work in agriculture and rural home economics. When land consolidation is involved, this period starts with the allotment of the new farming and housing units ;

final period of one to two years at the most to finalize the plan in such a way that the population will be able to help itself without further assistance from outside sources. The raising of funds amongst members of the pilot area to ensure additional extension work after the period, if this might be required, would have to be stimulated. This has already been realised in a few areas.

ative costs : The total amount of money ocated to additional extension work in the ot areas equals annually about ½% of the ss value of agricultural output in the restive regions. This means that the inten- of extension work in the pilot areas is ut twice that in the other rural areas. his connection it may be mentioned that local agricultural extension officer in the herlands covers on the average 400 farms.

The home economics part as percentage of al costs of additional extension work is inasing steadily from nearly 10% in 1956 the t year, to about 30% after seven years of operation, the average pilot area period.

For the pilot area as a whole, comprising more than 50,000 farms with an average acreage of 9 hectares, about 150 additional agricultural officers and 100 home economics extension officers are employed temporarily.

Apart from agricultural and rural home economics, inter-related social aspects of rural life are also considered more systematically in the extension plan and work, though still to a limited extent in financial terms as this aspect of extension work requires only a small per cent of the total money devoted to the pilot areas.

Some results : The short period of operation will hardly permit a scientifically justified evaluation. The national and provincial secretaries of the agricultural extension councils are assembling the necessary data in this regard. Nevertheless some preliminary results may be mentioned.

In one of the pilot areas, a backward grassland district, the production costs per kg. of milk (the regional disparity as to this indicator was the starting point for the pilot areas in 1956) were reduced relatively, by two cents in five years, which compared favourably with another more advanced grassland district. This would lead to the conclusion that an input of about 25 guilders/ha within a period of some years in additional extension work as applied in that pilot area had yielded an output of about 100 guilders annually, which means a ratio of 1 : 4 through this kind of intellectual investment.

The increase of labour productivity on small mixed farms in several pilot areas was 15—20% higher than that in other areas with about the same external production conditions. This effect was achieved within a period of

about 7 years, that is to say the average pilot area period. But apart from these results measured in economic terms, the change in attitude of the farming population in the pilot areas—one of the main aims of extension work—is certainly one of the most important results. By the pilot area approach the original reluctance of the population in some areas in regard to land consolidation was transformed into whole hearted approval and support. The farmers' attitude—and that of their wives—as to rural home economics are gradually changing also as indicated by the increasing percentage of money allotted by the pilot area committees to home economics extension in the successive years. The outlook of farm families in regard to migration of labour from the land is broadened too. Timely counselling and guidance as to future jobs for rural youth supported by exhibitions is increasing. The extension services themselves are being improved by the experiences in the pilot areas.

Instruction as such is gradually transformed into an educational process of group dynamics, in which the former "clients" of the agricultural advisory service are more and more regarded as "co-operators". The contribution of local leaders to the development plan is stimulated purposely.

Subsidies on separate technical farm improvements especially to small holders—were decreasing from more than 50% of the total additional costs of extension work for the pilot areas in 1956, the starting year, to a little bit more than 10% since 1962. More thought is given to effective group methods e.g. demonstrations as is rightly done by the home economics extension service. This extension procedure was also due to a relatively limited number of full time professional extension officers the latter could emplo
Farm economics bookkeeping introduced
the pilot areas as a base for more efficie
farm management, is also to be regarded
an important and often the limiting fac
for greater productivity. Efficient co-ordi
tion between the services for land and wa
use and the extension services is put into
effect in the pilot areas.

Comprehensive extension program
planning as initiated in the pilot areas has
only improved gradually, but also it
served as a stimulating example and will c
tainly be extended beyond the areas as
efficient basic procedure in agricultural ext
sion work for the country as a whole.
1961 a first experimental start in this reg
was made under the auspices of the natio
and provincial agricultural extension counc
in which the governmental agricultural ext
sion services together with the farmers a
farm labourers' organisations are represente

The inclusion of home economics as
integral extension programme is making pr
ress. The rural home economics extensi
division has gained a great deal of experie
through the pilot areas preceded by the f
full example in the pilot villages. Base
this experience, they are expanding gradu
through intensive individual methods
extensive home-visits. Extension experie
are gained by the home economists who
primarily trained as teachers. In-service t
ing of home economics extension office
gaining in importance with the extension
of rural womens' organisations. Assis
is given here by the foundation for h
economics research. Much informal assist
is given through contacts with the agricult
extension services in the pilot areas, as t
services have at their disposal a longer ex

nce in more or less systematic expansion
ork.

Though a joint farm and home approach
as not yet been achieved, in a few areas bud-
ting of the household along with budgeting
the farming enterprise is initiated. Finally
e may claim that systematic extension work
to social aspects confronting agricultural
oductivity and rural life was initiated on a
ore elaborate scale in the pilot areas.

The promising results obtained within a
w years with relatively little financial ex-
nditure are encouraging, especialling taking
to account the facts that the Netherlands has a governmental agricultural advisory service with primary emphasis on technical matters and a still relatively less intensive rural home economics extension services split up organizationally amongst three rural women's organizations without formal links among them. This proves that the concept, the way of approach and the attitude of the authorities to rural development that is to say, basing the improvement scheme to a great extent on the principle underlying extension education : "helping the rural people to help themselves", may be regarded as the most decisive factors for ultimate success.

"A code of conduct, a kind of human beings; two things. But the code or system of values dominates the culture and so controls the type of behaviour of the people, makes the type of human being and corresponds to character in the individual"

R. REDFIELD