SOME IMPLICATIONS FROM DIFFUSION RESEARCH FOR THE ADOPTION OF FARM PRACTICES IN INDIA*

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TWO crucial problems in India today are getting agricultural production up and human reproduction down. This article is devoted to implications from diffusion research that relate to the adoption of farm practices. First, there must be a body of carefully tested practices to recommend. This is no simple matter because many practices in farming which may be applicable have not been tested under Indian conditions. Thus, the economic consequences of their use under varying field conditions either singly or in combination with other practices are often not known as in use of chemical fertilizers on specific crops under variant soil and climatic conditions. There is also the problem of fitting farm practices into a farm plan to increase agricultural production. This involves concepts of planning and management which may not characterize the thinking of the Indian cultivator.

Secondly, systems for supplying potential adopters with information, supplies and services must be provided and in operation before adoptions are possible. Also it is important to recognize that information services and supplies must be psychologically accessable as well as physically available.

Since most efforts to change farm practices are instituted by the various governental levels, a problem of bridging the gap between the people and the government is posed. At the most elemental level this involves the village level worker and the cultivator. The problem is one of getting local acceptance of government sponsored programmes and practices. Sociologists have referred to this process as co-optation.[1-2]

One co-optation problem is communication. This is probably more true in India than in countries like the United States where change agents come from backgrounds similar to the ones in which they will eventually work. By living under similar conditions they acquire an understanding and habits of speaking which enable them to communicate readily with their clientele and to gain their confidence. Also, in countries with open class systems, as in the United States, status differences between farmers are usually not sufficient to impose serious barriers to interpersonal communication. Thus, when change agents communicate disproportionately with upper status farmers the knowledge and skills imparted tend to diffuse down to others lower on the status scale. This may not be true in an Indian Village where social strata are much more rigid. Also where change agents come from different social backgrounds than those with whom they work, they are likely to be plagued by communication problems which may be very difficult to detect and which can be corrected only with special skill and effort. Failure to facilitate communication among the intended clientele can pose a serious handicap to the acceptance of new ideas and practices. Even where farmers are frequently exposed

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to many information sources, interpersonal exchange of information, and advice of trusted others are important sources of learning. If advantage cannot be taken of this interaction effect, acceptance of practices is almost certain to be slow.

A closely related co-optation problem is involvement of local people in the promotional effort. Some ten years ago it was estimated that the professional extension staff of about 12,000 people in the United States was assisted by over 1 million unpaid voluntary leaders[3]. If they had been paid at the rate of unskilled labour the amount would have exceeded the entire extension budget. This is surely one of the secrets of their success.

Involvement of people is important for several reasons. First they help change agents and increase their accomplishments. Second, people learn by doing. Also, through interaction people provide legitimation and social pressures which impel those who participate to accept changes that they become committed to by virtue of their collective group action. Another point in favour of involving people is that many have time they can spare for group efforts to promote change. This is certainly true of Indian cultivators.

A third kind of problem in bridging the gap between people and the government is ideological in nature. Ideological problems result from differences between individual and government goals. For example, a government programme may emphasize the production of food grains but it may be more profitable to grow sugarcane or cotton. In this case, what will the change agent recommend? Also, if the district office has a supply of American hybrid seed corn on hand that cultivators don't want for good reason, should the village level worker urge them to take it? As matters are viewed from the cultivators' point of view, many conflicts of interest are likely to emerge. Whether these are resolved in favour of the government or the cultivator will certainly influence the successes or failures of change agents. There are indications that identification with local cultivators increases their ability to induce change.[4] However, this may not be the best way to get promoted. Thus, rewards within the extension system has a very important bearing on the amount of effort change agents are likely to expend and how.

A special food study team of Indian and foreign agricultural specialists listed a number of conditions for getting food production up and thus also the adoption of new farm practices.[5] These included :

(1) Adequate credit for financing improvements in farming.

(2) Locally available and adequate supplies for high level agricultural production such as fertilizers, pesticides, improved seeds, and agricultural implements.

(3) Intensive irrigation and drainage programmes.

(4) Full, fair and stable market prices for the surplus grains produced.

(5) Technical advice and assistance on special problems encountered in the management and operation of farms.

(6) Expert assistance in farm planning and management.

(7) Administrative machinery that will provide needed information, supplies and services and take care of the excess labour that exists or may occur as a result of the programme.

(8) Mobilize village, block and district resources for increasing agricultural production.

Obviously some of the foregoing conditions are beyond the control of both change agents and cultivators. Nevertheless, change agents can help cultivators work around or through the difficulties which may otherwise seem insurmountable. With these limiting conditions in mind, some implications from diffusion research findings in agriculture and related fields seem warranted. Some of these are suggested and discussed in the pages which follow.

1. Uunderrtand the cultivator's situation

This is an important first step. It is very important to recognize that many things impinge on individuals which greatly influence what they can or cannot do. In the first place an individual has a cultural heritage. From this he inherits positions in life. What he can and cannot do is partly a function of these positions. Having relatives and friends, he cannot do exactly as he pleases. He may have to obtain permission from an elderly relative before he can act. He may be able to assume only limited risks because of family obligations, i.e., providing food and clothing, getting a daughter married, or meeting a ceremonial obligation.

His acreage may be too small to make some changes profitable or even possible. He may not have the tools and equipment needed and may not be able to get them. For some things the co-operation of other cultivators is necessary as far example irrigation and drainage projects.

Needed supplies may not be available or the facilities for getting them. Also, an individual may not know how to do what he is convinced he ought to do. Markets may be so uncertain or the means of disposing of surpluses so difficult that extra production is not regarded as worth while.

Thus sound advice about adopting new farm practices must be based on a thorough knowledge and understanding of the farm and the family situation of the cultivator.

2. Help villagers see that things can be different

People who have lived for centuries with little prospect of improving their life chances are not likely to suddenly feel that drastic changes are possible and that they can personally do anything about it. Part of the problem is to develop an expectancy for and a proneness to change. Villagers must come to recognize that they are living in a changing world; that things will not remain as they are, and that people as individuals can do something about it. This is something of a philosophy or way of thinking that does not relate to specific practices but is a prerequisite to quick consideration and acceptance of many types of changes.

This, of course, is not something that can be done quickly by the means readily available to change agents, but it is an end to which they can contribute. Anything that increases contacts of cultivators with people in other villages, towns or cities where changes are taking place or with new ideas from whatever source should help. Those who can read ought to have simple reading materials which tell them that important changes which affect them are happening and that people everywhere are trying to change conditions that they don't like.

Radio news from nearby areas and distant places is certain to have an impact; also news from local and city newspapers. This is likely even if only few people can read. Those who can are able to communicate what they learn to others who can't. This tends to start needed interpersonal communicative exchange. Ideas gathered and things learned from fairs, movies, exhibitions, and elsewhere will certainly contribute to an awareness of change and a growing change expectancy.

While agriculture extension officers and village level workers can't assume total responsibility for this, they can often facilitate contacts of villagers with new ideas by telling them what others are doing and by encouraging them to talk to people who are trying new things.

3. Help create a receptivity to change and social pressures in favour of it

People tend to do what close associates expect them to do. If the local feeling is that cultivators ought to be alert to new developments in farming and to try them quickly, individuals are more likely to do likewise than otherwise. Anything that can be done to create such a generalized feeling of change expectancy will likely enhance farm practice adoptions efforts.

4. Know what cultivators want

A cultivator must have a reason for making proposed changes. He must see an end in sight. These ends must be important enough to persue and near enough to appear possible. If people don't already have reasons for adopting particular practices, change agents may help create them. Although creation of dissatisfaction with the present situation may be helpful, this would seem inadvisable in the absense of the necessary means for alleviating conditions which create the difficulties.

5. Show cultivators how to get what they want by doing what the change agent proposes

Once it is determined what cultivators want, it may be necessary to help them see how adoption of new farm practices will help them achieve their desired goals. It is probably not safe to take these relations for granted Perhaps there are times when the benefits from proposed changes in farming appear so remote that they don't seem attainable. Alternative use of resources that offer quicker and apparently more certain personal satisfactions may be more attractive. This is very likely if cultivators are not able to see that they will be much better off in the long run by making present sacrifices. Planting an orchard or developing an irrigation drainage system for the farm may fall in the deffered benefits category.

6. Know and use existing decision making habits

People have habitual ways af arriving at decisions. It is ordinarily easier to spead up these processes than it is to short circuit them. What then, is the nature of these processes?

First arriving at decisions takes time. One study showed that United States farmers knew of hybrid seed corn for an average of 5 years before they did anything about it[6]. Sometimes it takes longer and sometimes not this long, but people seldom try new things as soon as they hear about them.

Decision making viewed as a process implies that they are the result of a series of experiences and influences operating through time. In some recent researches five stages in this process have been posed, namely awarehess, interest, evaluation, trial and adoption[7]. Although this model has limitations, it has permitted a better understanding of the process and influence operating in individual adoptions.

Awareness: At the awareness stage a person first learns about a new idea or practice. Take the example of a cultivator who has just heard about hybrid maize. He may have learned no more than there is such a thing.

Interest: If he is interested he will seek more detailed information about it. He will want to know how it is different from desi maize,

how much it will produce, what the grain is like, how it tastes, how well it will sell in the market, whether the cattle will eat the fodder, etc. This has been called the interest or information stage.

Evaluation: If the cultivator likes what he hears and sees, he will begin to seriously evaluate this innovation. At this point, he really has two decisions to make. Is this idea of using hybrid maize a good one and second is it good for me. He will probably carefully weigh the pros and cons of using it. Such things as yields, cultural requirements, cost and availability of seed, quality of grain, and salability will doubtless be considered. If other cultivators have been growing it, he will almost certainly talk to them and may be watch their results for a year or two before he tries it. If the pros outweigh the cons and he can arrange to get the seed, he may try growing some of it. Although evaluation is not totally confined to this stage, it is paramount.

Trial: A common procedure is to try a little first and more later if the trial is satisfactory. Also, the cultivator's information problem is quite different at this stage. Where when and how problems predominate. He needs to know where to get the seed, how thick and how deep to plant it, when to plant it, and perhaps even how to plant it. If he is thinking correctly about the needs for growing hybrid maize, he will want to know how much and what kind of fertilizer to apply, how to put it on, when it should be applied; also about needed changes in cultural practices.

Adoption: Finally, if the trial works out all right, i.e., if the yields are good, the costs are not too high, if the market is good, if there is no objection from the women who use it for food and if no special difficulties arise in growing the maize, he may accept it for sustained use. This has been reffered to as the adoption stage. Continued acceptance will depend on personal satisfaction with the result obtained. Information needs and the best means of supplying them vary by stages. The mass media have been very useful in informing cultivators about new ideas and practices and in getting them interested in them, even though only a few people can read them. Those who can are likely to communicate what they read to others. Radio where available, can be useful as a means of informing farmears about new practices; also exhibits.

However at the evaluation stage, fellow cultivators and trusted other personal sources are most likely to rate first in importance. at this stage, pro and con information and advice are needed; thus two way communication with trusted other persons. Only a few progressive minded cultivators are likely to be willing to depend on professional sources of information for legitimation purposes.[8]

At the trial stage where application questions arise, fellow farmers with the requisite experience are likely to be in greatest demand, particularly for late adopters. For early adopters and for entirely new practices outside assistance is obviously required. Change agents can help see that the informational needs of the early adopters are met. Attention to obtaining needed supplies is also important at this stage.

At the adoption stage the primary educational need is for reinforcement. The problem is to keep those who have decided to use a practice from changing their views before something better is available. Helping cultivators asses their own results ahd those of others should be helpful in this regard; also knowledge that other trusted individuals are doing the same thing.

7. Tell cultivators about what others are doing

Although mass media are useful devices for informing people about new ideas and practices and creating an interest in them, these are not well developed in India. Therefore, agents would do well to frequently mention new practices being introduced or used by others. Most people must be exposed to a new idea several times before it registers or before they do anything about it.

8. Encourage cultivators to talk to others about their experiences with new farm practices

Perhaps people talking to people more han anything else is responsible for rapid doption of new ideas and practices. Thus, it is important to encourage people to talk about the new things they have tried and such local demonstrations as may be in process. Those not using a new practice should be encouraged to talk to those who are.

9. Help innovators be successful

When new programmes are introduced, some cultivators come forward faster than others. These are sometimes called innovators. Where change is viewed with skepticism, they are likely to be viewed with suspicion particularly by late adopters. Although they may be watched but not followed, they perform useful functions for later adopters by assuming risks that they are not willing to take and by demonstrating the local applicability of new practices.

10. Convince local influentials early

Some people are more sought as sources of farm information than others. Actually, a few people may be consulted by many cultivators[9]. These are invariably people who are respected for their good judgment and integrity. If local norms dictate that cultivators should be cautious about adopting new farm practices, influentials will almost certainly reflect this view. This means that they are slower to become convinced than innovators. Learning to know who these people are and convincing them early should speed adoptions. They in turn are likely to convince people that outside change agents would influence little. When influentials start using a new practice others are likely to follow.

11. Use group meetings with discretion

Proper use of group discussion and decision techniques can facilitate adoptions. This involves a procedure where pertinent matters relating to new ideas or practices are discussed by the people who are expected to adopt them and where the group is finally led to a decision in favour of their use. This is different from a meeting where someone makes a talk or shows a film. Group discussion-decision reqires careful advance preparation to involve the people in the discussion with the view of finally leading them to a favourable decision. Group discussion makes it possible for individuals to relate the new idea or practices to their own situation and to get the opinions of others who are in about the same situation as they. This seems to be a normal part of arriving at decisions requiring thought and deliberation. Also group opinions formulated and expressed in the group meeting act as a compelling influence on individuals to conform. Experiments have shown that this method is far superior to straight lectures as a means of getting people to adopt new practices[10]. However, it is important that the group decision is in the right direction. Perhaps finding and convincing influentials in advance is good insurance.

12. Use existing group and recognize their leaders

Social groups are common in all socities. These include those of a locality, kinship and special interest nature. All provide ready

made structures and channels of communication with which to work. Their leaders can be helpful in planning, selling ideas and providing services connected with agriculture programmes. In fact it is not safe to ignore social groups and their leaders. It is equally disasterous to become aligned with the wrong ones where conflict situations exist. This means it is important to know who belongs to what groups.

A programme that recognizes, uses and reflects credit on group leaders is more likely to succeed than one that doesn't. Also, this is a good way to help insure continued operation of the programme after outside agents cease their effort.

13. See that supply problems are taken care of

This cannot be stressed too much. Supply problems for cultivators are likely to be difficult at best especially where they are based on credit arrangements. If these matters are not properly taken care of, many changes that otherwise would occur will not. Since some of the new things will require special "how to do it" problems simple instructions should be issued at the source of supply; also personal consultation may be necessary.

14. Cultivators respond to change agents as well as to practices

Among some people advice is not accepted until the person is accepted. This is likely to be characteristic of many cultivators. As with farm practices there is no clear cut way of getting change agents accepted. However there are some things that will help.

Surely, possession of adequate knowledge is one thing. In a sense change agents have to pass intelligence tests. If they fail, they lose influence. If they pass, their potential influence is enhanced. A recommendation that is obviously wrong or one that proves to be very questionable will surely hurt an agent's reputation. It is well to remember that most improved practices are not equally good for everybody and may be completely wron for some. Cultivators probably are quick t recognize this.

Respect for the ideas and beliefs of loca people and an attempt to understand why the do things the way they do should also help i gaining acceptance. This requires listening a least part of the time. If change agents ca understand and appreciate thinking and view of those they would teach this shows throug and will help them become accepted.

Although the foregoing suggestions fo getting new practices accepted are inferenc drawn from research done mainly outsid India, they can generally be regarded as goo working hypotheses for action programm and empirical testing under Indian conditions

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