

EFFECTIVE COMMUNICATION OF NEW IDEAS TO FARMERS

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One of the main tasks of an agricultural advisory officer is to teach the farmers to apply the findings of agricultural research. But what about the agricultural advisory officer himself? Should he also apply the findings of scientific research to improve his own methods? In my opinion he could not do this a generation ago, because there were hardly any research findings available on which good extension teaching methods could be based. Nowadays, however, a rapidly increasing body of research is available from which effective extension methods can be developed. Therefore, I will try to give you some idea of these research findings.

Not much has yet been published in Ireland in this field. Therefore, I will have to rely mainly on research done in the U.S., where research in this field has grown very rapidly since Ryan and Gross' famous hybrid seed corn study over 20 years ago,¹ in several European countries, in India, Pakistan and some Latin American countries². There is a remarkable similarity between the research findings obtained in various parts of the world. Therefore, I am confident that many of these findings will also be applicable to the Irish situation, but this will probably not be true for all of them. Mr. Keenan will say more about this point on the basis of his own research and his experience.

Adoption process

Agricultural research workers and some intelligent farmers are rapidly developing more and more new farm practices, but the Dutch experience tells us that it often takes quite a time until these practices are really adopted on all farms where they are applicable. If we like to increase the speed with which new practices are adopted we have first to analyse the process by which farmers adopt them. It seldom happens that a farmer adopts a new practice immediately he hears about it. Usually he waits some time to see whether the new practice is really an improvement for his farm. This means that he will use

¹ B. Ryan and N. Gross, *The Diffusion of Hybrid Seed Corn in Two Iowa Communities*, *Rural Sociology* 8 (1943) 15.24.

² A good summary of this research is given in: E. M. Rogers' *The Diffusion of Innovations*. New York, Free Press, 1962, 376 p.

different information sources to become aware for the first time about the existence of a new farm practice and to make the final decision whether or not to adopt this practice. This can be illustrated by Table I, which is based on a study in various parts of the Netherlands.

TABLE 1.

The percentage of farmers who consider different sources of information as the most important: (1) to hear about the existence of a new farm practice for the first time, and (2) to decide whether or not to adopt the practice)³

Source of information	to hear	to decide
Farm papers, radio and other mass media ...	70%	4%
Mass media in combination with some other source of information ...	5%	4
Demonstration, experimental plots, meetings etc. ...	6%	12%
Local extension officer ...	3%	20%
Other farmers ...	11%	43%
Other farmers in combination with some time source of information ...	4	8%
Salesmen ...	3%	4%
Own experience ...	0%	3%
Other combination of source of information	2%	3%
No answer ...	0.	4%

This table shows a striking difference between the two columns: 75% of the farmers mention the mass media as their most important source of hearing about new practices for the first time, but at the decision-making stage of the adoption process this source of information is absolutely unimportant. At this stage, however, 75% of the farmers mention personal contacts as their major source of information.

This result and similar research findings in other countries indicate that there is not one best communication method. A good extension programme should rather use a series of different extension methods. Firstly, some mass media should be used to arouse awareness of, and interest in, the new practice and afterwards more personal contacts with influential farmers, group discussions and demonstration should take place in order to convince the farmers that they should adopt new ideas.

³ Source: A. W. van den Ban, *Goer en Landbouwoorlichting: De communicatie van nieuwe landbouwmethoden*. Assen, Van Gorcum, 1963, p. 98.

⁴ Coded as other combination.

Individual differences

You will understand that not all farmers adopt new practices with the same speed. A considerable amount of research has been done to discover which kind of farmers are the first to introduce new practices in a community and which kind are the last to follow their example. Table 1 led us to expect that innovators are people who read the farm papers carefully, have many contacts with advisory officers and sometimes even direct contacts with scientists and with farmers in other districts. This is indeed the case. They are also the better educated farmers, the farmers with the large holdings, who can take some risk and the farmers who are highly influenced by the urban culture. In general, the innovators are modern men who are not only interested in what happens within the gates of their own farm, but in what happens in the world too. This makes them interested in change, often not only in farm management, but also in many other respects. Some studies found, for instance, that the innovators and early adopters of new farm practices are more favourable towards change in their church than the laggards and late adopters are.

Also other aspects of the way of thinking of the farmers are important for their adoption of new farm practices. Traditional farmers often place a high value on work; a person who is willing to work hard has a high status in their society, but work is in their opinion only manual work, mental work is not real work. Such a traditional farmer would consider it as a sign of laziness if a farmer spends an afternoon to study the farm paper. For this reason they do not place a high value on education which gives their sons or daughters working on the farm book knowledge, but does not teach them to work. Modern farmers on the other hand realise that good farm management requires mental work and a good education. They see their farm as a business which has continuously to be adapted to change in price relationships and in technical developments. Therefore they continuously try to gather the information which is required for good managerial decisions, whereas the traditional farmers see their farm as a way of life which can be maintained in more or less the same way as their fathers were farming on it.

They also make calculations about their farms in ways very different from the modern agricultural economist. As costs they see their cash expenditures, but not the costs of family labour, depreciations or feed produced on their own farm. Such a farmer can say: "Now the egg prices are very low so I feed only half as much grain to my hens as previously and give them some of my own potatoes in addition. Otherwise it would not pay." In the same way their farmers only calculate their cash receipts as income and will not include, for example, the increase

in the value of their cattle herd. Previously when our farms were mainly subsistence farms this way was an intelligent way of calculating. At that time there was no alternative use for the family labour or for the feeds produced on the farm. Investments in machinery were small and these machines could be used for many years. Now, however, our farms are working for the world economy but many farmers still maintain more or less the old way of thinking about farm management. This often makes it difficult for them to understand the advice given by extension officers based on modern economic analyses which include the calculated costs for family labour, depreciations etc.

Difficulties can arise especially when the advisory officer suggests the making of investments for which money has to be borrowed. To the adviser it is often quite clear that this can increase farm income. The investments make it possible to increase the size of the dairy herd or the poultry flock and thus achieve a higher production with the same labour force. Such investment will increase farm income while the money borrowed can be repaid over 10 or 20 years. The farmer, however, sees that he is going to make a loss, because in the first year, the expenditure will be more than receipts. Furthermore, he may have succeeded after a hard struggle to get rid of the debts with which he had to start after his father died. He does not like to fight this struggle anew and cannot believe that it is possible to work continuously with credit as most industrialists do.

In cases like this the adviser will have to start where the farmer is with his way of thinking and try to create a situation in which the farmer discovers that other ways of thinking are possible.

Community differences

There are not only differences between individuals in the adoption of new farm practices, but also between communities. These differences are quite clear between, for instance, the Danish and most Indian villages, but also within a country there are often somewhat similar differences. These differences are related to the whole structure and culture of the communities. Very important in this respect is the leadership structure of the community. You saw from Table I that many farmers do not adopt new practices before they have discussed them with other farmers. One should expect, therefore, that in communities where the farmers sought for advice—the informal leaders—have confidence in the advisory officers and have many outside contacts, that farmers in such communities will be quick to adopt new practices. This has indeed been found in several studies, whereas in traditional communities the informal leaders have not much more contact with the advisory service than

their followers have. Similar differences have been found in the age of the leaders; a recent Colombian study found that in modern communities the informal leaders are several years younger than their followers whereas in traditional communities they are older.

There are also indications of a difference in the way people influence each other in traditional and modern communities. In the traditional Dutch communities everybody is expected to talk to all their fellow villagers when they meet, except when they have a special feud. A local person is expected to drop into all homes of his village when he likes, without knocking on the door or ringing the bell. In other words the families are open to other people from the village, whereas it is very difficult for an outsider to gain the confidence of the village community. In the modern villages on the other hand, everybody is expected to select a few friends whom he likes in the same way as is usual in the city, where we often visit our neighbours much less frequently than people who live 1 or 5 miles away. Even if we visit these friends we will usually announce our visit by ringing the bell. Under these conditions people are much more open towards their friends than the farmers in traditional villages are towards all people who might drop into their home. In these villages one is not accustomed to express personal emotions as love or anger openly even among family members, because a stranger might always drop in. This means that in the traditional villages the influence is exerted by the village community as a whole, whereas in a modern community the group of friends to whom one belongs is much more influential. Within one modern village, there can be several groups of friends with quite different attitudes towards the adoption of new farm practices. In these communities farmers' associations and co-operatives play an active role, whereas in the traditional village it is not acceptable that a group of farmers separates itself from the rest of the community by establishing an association or co-operative.

Naturally there is no community where the influence of the different members is completely stable. However, change in this respect is much slower in traditional communities than in modern communities. In traditional communities the influence of each member is based to a large extent on his family background, whereas in modern communities his personal qualities are more important. Quite often in traditional communities the farmers feel more or less suppressed by their landlords, money lenders or government officials. They believe that it is not their task to take initiative, but that only the 'gentlemen' have the right to do so. In modern communities the farmers are much more independent and self assured. They often have,

also, more confidence that the outside powers will not try to act against their interests.

This makes the task of an extension officer in a modern community much easier than in a traditional community. In a modern community the farmers who seek contact with the advisory service are often the influential farmers in the community. If a young man without much influence seeks contact with the advisory service we may hope that he will rise to a position of influence rather quickly when he runs his farm well and does not boast about it. In traditional communities there is often the tendency for the farmers who seek contact with the advisory service not to have much influence in their community, whereas the influential farmers have little interest in co-operating with the extension service.

Nowadays in many parts of the world, and I certainly expect in Ireland, the traditional communities are changing rapidly to modern communities, which makes the situation for extension officers easier. Quite often the farmers are interested in some changes, but these might be different changes to what the advisory officers consider most important. In many parts of the Netherlands with predominantly family farms, farm income is mainly influenced by labour productivity. But when one asks the farmers how they decide whether a farmer is a good farmer or not, they mention good crops and good cattle, but very seldom a high labour productivity. This is in agreement with the fact that these farmers do not see their family labour as a cost element, as discussed previously. If the advisory service would start in a case like this with attempts to increase the labour productivity, they will probably not be able to interest the influential farmers. These farmers are influential because they are able and willing to help their colleagues to increase their yields per acre and per animal, but their interest in increasing the labour productivity might be quite low. In a case like this, it seems advisable to me to start with the problems the farmers feel they have, e.g. plant diseases or the use of fertilizers. This makes it possible to gain the confidence of the influential farmers. As soon as they have confidence in their advisory officers it becomes possible to bring them to a situation where they discover themselves that labour productivity might be important.

In some parts of the Netherlands study groups of about 12 farmers to study the local farm income situation have been set up. The members often discover that the income per person is low on many farms and this makes them interested in the question what can be done to improve this situation. The farmers themselves suggest several solutions and the advisory officers help them to budget the results of these solutions. In

this way they often discover that it is necessary and possible to increase the labour productivity.

Group methods

One of the reasons that this method is rather effective is that it is a group method. There is a considerable amount of empirical evidence that group discussions can have more influence on a change in a behaviour than either lectures or individual advice have. One of these studies was made in an American hospital, where many children were born. It was usual there to tell the young mothers before they left, that they should give their babies cod liver oil and orange juice¹⁵. The investigators tried a group method instead of the usual individual advice. They waited until a group of 6 mothers were ready to leave the hospital and asked them what one should feed a baby. At the end of the discussion the dietician gave the reasons for feeding cod liver oil and orange juice and the group decided that they should give these products to their babies. After four weeks all mothers who participated in this group discussion gave orange juice and 90% mothers gave cod liver oil, whereas only 55% of the mothers who received individual instruction fed these foodstuffs, despite the fact that the individual instruction had taken much more time by the dietician. The reason for this greater effect of group discussion is a difference in the psychological situation. In the group one discusses a problem that all members face and then one member (the dietician) helps somewhat more than the others to find the solution for this problem. In such a situation it is rather easy to accept this solution, certainly if the other group members also say that they will accept it. With individual advice, however, one quite easily gets a situation in which the dietician tells the mother what to do and therefore tells her that she does not know this herself. That makes it more difficult to accept the superior knowledge of the dietician.

The effectiveness of group methods in advisory work depends to a large extent on the quality of the discussion leader. He can stimulate the participants to realise their problems and to find a solution for them, but he can also quite easily cut off this growth process e.g. by drawing a conclusion before the time is ripe for it. Discussion leadership is partly an inborn quality, but a good deal of it can be learned by observing and analyzing discussions. Therefore the Dutch extension service starts to train their staff in discussion leadership by utilizing methods developed for personnel development in industry.

¹⁵ K. Lewin, Group decision and social change, in E. E. Maccoby, Th. M. Newcomb and E. L. Hartley, Readings in Social Psychology, New York, Holt 3rd ed., pp. 197-211.

Similar methods have been developed for training advisory officers in individual advisory methods. Personally I am often inclined, when I see something that could be improved, to say immediately how this should be done. However, this is quite often not the way in which people learn much. First an openness for new ideas should be developed by causing some doubt about the present method. Part of this openness can be developed by the mass media, but in addition it is often necessary to stimulate the people to think about their situation and their methods. Quite often you can do this by listening carefully to what the farmer tells about his problem and repeating what he has said. By giving him in this way a mirror in which he can see his own problem, the farmer is often stimulated to think it through as far he can, until he realises that he has a problem for which he needs more information in order to solve it. If you come at this moment with your suggestions and not directly at the moment you see that there is a problem, as I and many others are inclined to do, you will often be most effective. The effect of your work does not depend on what you tell the farmers, but on what they learn from you. Here again training courses can be given to increase the sensitivity of the advisory officers for the reactions of the farmers in the interaction process.

Mass methods

For the use of both group methods and individual advice a preparation by the mass media can be useful. A discussion is much easier if the farmers already know something about new possibilities, but as Table 1 shows clearly the mass media alone are not able to realise important changes in behaviour¹⁶. You may wonder why this is the case. Let me try to illustrate this with a practical example. As you know several articles have been published which say that smoking increases the chance of getting lung cancer. Despite these articles there are still always people, like me, who smoke. This is not usually because they like to die from cancer, but those of you who have ever tried to stop smoking know that this is not easy. This puts the smokers in a difficult position. There are several ways out, however. One way is not to read these articles and a research study has indeed shown that the heavy smokers have less often read articles about the relationship between smoking and getting lung cancer than non smokers. This solution is not as difficult as it might seem, because nobody is able to read everything that is published, therefore most people select the more pleasant things to read. Despite this, there are smokers who have read these articles, but they can try to explain these

¹⁶ Further evidence for this statement is given in: J. T. Klapper, *The Effects of Mass Communications*. Free Press of Glencoe, 111, 1960.

articles in such a way that these do not apply to their situation. I do this myself by saying that the articles might be true for some people who smoke three packages of cigarettes a day, but not for people like me who smoke only three cigarettes a day and therefore I can quietly go on with smoking as I have always done. There is still another possibility for smokers who have read these articles: they can forget about it. Quite probably the smokers will do so more often than the non-smokers. Similar processes of selective attention, selective perception and acceptance and selective forgetting limit the effects of all mass media attempts to change the behaviour of the farmers.

Naturally the effectiveness of the mass media also depends on the choice of the medium and on the way in which they are used. Research studies in many parts of the world show clearly that farm papers can be important for the better educated farmers, whereas radio and television have more influence on the less educated ones. As a rule it is quite difficult to reach this last group in any other way. Often they do not attend meetings, visit demonstrations or shows, participate in excursions, etc. Therefore I believe that serious attention should be given to the possibilities of using radio and television as advisory methods. Perhaps these methods are most effective when they can serve as a basis for group discussion in the villages.¹⁷

With regard to the way in which the mass media are used we get the impression in the Netherlands that many authors write more for their colleagues than for the normal farmers. The farmers are mainly interested in articles giving information they can directly use on their own farm, but the articles in farm papers often have a more theoretical viewpoint. They have much more the character of a research report than of an interview with a modern farmer on his experiences with new methods. The language in which they are written is also too difficult for many farmers.

Pilot farms

Pilot farms are another method of convincing the farmers of the value of new practices. When you see in Table 1 that most farmers do not adopt a new practice before they have seen how it works on a farm, you might expect that pilot farms are a very effective extension method. However, experience tells us that it is much easier to organise an excursion to a pilot farm far away than in the village itself. Apparently there is some resistance in accepting the example of the pilot farmer within one's own village. A recent German study made a good

¹⁷ See e.g. J. C. Marthur and P. Nourath, *An Indian experiment in farm radio Forums*. Paris UNESCO, 1959.

analysis of this resistance)¹⁸. If the pilot farmer gets better results than the other farmers, these others can believe: "We could get the same results, if we went to the same trouble, but at present we do not and therefore our results are less good than on the pilot farm." You understand that this is easy to accept, especially if the pilot farmer is not one of the high status farmers in the village. As a rule the good farmers have a high status in the village. Therefore, if the advisory service selects a young man of rather low status as a pilot farmer, it is difficult for the other farmers in the village to accept him as a good farmer who can be an example for them. They will look for another reason for his success. Sometimes, the advisory service makes this quite easy by giving a subsidy to the pilot farmer. Then the other farmers can say: "If you are subsidized you can improve your farm, but we do not get a subsidy and therefore we will have to continue in the old way." Sometimes a pilot farmer is chosen who is richer than the average farmer, and this gives the other farmers another possibility for not following his example. If the farmers are really looking for such a reason, they usually will find one. Probably you will not consider it as a sound reason, but this does not mean that it is not a sound reason, for the farmers.

The German study shows that farmers look especially for reasons not to accept the example of the pilot farmer, if a farmer of a rather low status is selected as a pilot farmer. Advisory officers are often inclined to select as pilot farmers, farmers who are willing and able to demonstrate new techniques. Often these are not the most influential farmers in the village, and then their demonstrations will only have a limited effect. It might take more time and effort to convince an influential farmer that he should demonstrate new techniques, but often this is a worthwhile investment because other farmers are willing to follow his example. It also seems that by giving a farmer the title "pilot farmer" one decreases the effectiveness of his example, because this makes him different from the other farmers. The example of the introduction of a new practice is most effective if it is given under circumstances which are as similar as possible to the circumstances of the farmers who are expected to follow this example.

Summary:

A conclusion from this paper is that there does not exist one best advisory method. A good advisory programme should rather use different advisory methods. The mass media are very useful to create an interest in new ideas, but they do not

¹⁸ G. Bareiss, E. Hruschka and H. Rheinwald, *Probleme des Beispielbetriebes*. Stuttgart, Ulmer, 1962.

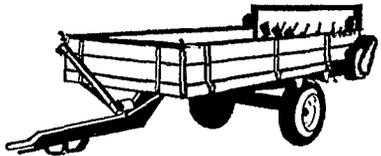
convince the farmers that they should adopt them. Probably, lectures at large meetings have a similar effect. Some progressive farmers are mainly convinced of the use of new practices by their advisory officers, but for the vast majority of the Dutch farmers their colleagues are much more important. This is one of the reasons why group discussions in which advisory officers and farmers participate can have a large influence on a change in farm management if they are well directed. As a rule those advisory methods are most effective which do not tell the farmers what to do, but help them to discover this themselves.

It is much easier for the advisory service to introduce new ideas with modern farmers who live in a modern society than with traditional farmers in a traditional society. In the long run the advisory service will be most effective if it does not only try to introduce new techniques, but in the first place tries to educate the farmers and modernize the society in which they live. However, quite often the advisory officers are better trained in technical knowledge about new techniques than in the processes of educating people and modernizing rural societies.

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