

A REVIEW OF INVESTIGATIONS IN ADVISORY METHODS II — IN THE NETHERLANDS*

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One of the main tasks of an advisory officer is to teach the farmers to apply the research findings in their work. But what about the work of the advisory officer himself? Should he act in the same way as he teaches the farmer to do? Should he use the findings of research on advisory methods? I think we will agree that if it is possible to improve advisory work by research on advisory methods, it should be done. When there are not yet any research findings in this field, but it would be possible to get them, we should consider the possibility of starting this kind of research. There are, I think, two basic questions we have to discuss today: (1) Have sociology and psychology already reached a stage in which it is possible to do any fruitful research in this field? and (2) Is there already any research on advisory methods that could be useful to you? In order to answer these questions I will in the first place show you some research findings in the Netherlands. However, science does not know any boundaries, therefore, I will also deal with scientific developments in other countries.

Before I start discussing what has been done in the Netherlands in this field of research, I will first say something about the situation in which this research has been done. The average farm size in the Netherlands is much smaller than in your country, only about 30 acres. Therefore, there are not many farm workers; more than three-quarters of all the work in agriculture is done by the farmer himself and his family. Only 12 per cent of our labour force is employed in agriculture. Even under these conditions it is possible to have larger agricultural exports than imports, which shows that the Netherlands must have reached a rather high level of farming. Like in other countries this level is still increasing; during recent years the productivity per man has increased at a rate of 5 per cent a year, not slower than in other branches of the Dutch economy.

One of the reasons for the high level of productivity in Dutch agriculture is the system of vocational agricultural education, agricultural research and agricultural advisory work on which the Dutch government now spends about 2 per cent of the gross agricultural production. More than half of the Dutch farmers have once attended a course or a school in vocational agriculture, and there is, at the local, regional and national level together, one agricultural adviser for about 175 farms.

Under these conditions the first research on advisory methods started in 1952, when a student in rural sociology wrote a master's thesis on this subject. Now there are 5 rural sociologists engaged in this kind of research, but three of them only on a part-time basis. The full-time researchers are A. J. Wichers and A. W. van den Ban, both of the Department of Rural Sociology of the Agricultural University, Wageningen; the part-time researchers are M. A. J. van der Sandt, Division of Survey Research, Agricultural Economics Research Institute, The Hague, A. Houttuyn Pieper, Rural Development Board, Harderwijk and Th. J. Rinsma, Rural Development Board, Tiel. It is planned that W. H. Douma will soon start at the Dept. of Rural Sociology with research on the communication processes between the agricultural research institutes and the local advisers.

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So far there has not been any psychological research in this field, but I hope it will start next year. You will understand that such a rapid increase of research in a new field would be impossible unless some of the leaders of the advisory service were interested, because they expect that this research will increase the efficiency of their service in the future. They know that there are many farmers in the Netherlands who could increase their incomes by following the advice of the agricultural advisory services more quickly.

Stages in the adoption process

The Dutch researchers have not yet studied the way in which the advisory service uses advisory methods, but only how the farmers are reached by these methods. When a farmer adopts a new practice this usually does not happen overnight; it often takes several years from the moment he first learns about it, until he adopts the practice definitely. Quite often when he first hears about a new idea he is not interested in such a strange practice, especially when it is quite different from what he has followed for years. After some time, however, he starts to get interested and to collect some more information, which makes it possible for him to decide whether this practice would be of any use on his farm or not. When he decides that it might be useful, he will, if possible, first try it out on a small scale, and when the results of this experiment are favourable he will continue to use it on a full scale. Note that this adoption process might be stopped in every one of these 5 stages; with some practices the farmer will never really get interested, other practices he will not adopt because they did not work when he tried them out, perhaps because he made a mistake with this trial¹.

It is of importance that the information sources used by the farmers are not the same in all stages of the adoption process. The first awareness of a new practice usually comes from the mass media, mainly the farming press and radio. But these mass media are in the Netherlands quite unimportant when the decision has to be made to adopt or not to adopt a certain practice. At that time it is far more important what other farmers say about their experiences, and also, especially for progressive farmers, what the advisory officer says. This means that if you wish to help your farmers with this adoption process you have to plan an advisory programme carefully, in which different teaching methods are used successively in order to provide the farmer with the learning experiences he needs in each stage of the adoption process. You can first use the mass media in order to arouse interest in a new practice. This interest can be further developed with the group techniques and farm visits used afterwards. In this stage the use of mass media can be continued in order to give information about the practical application of the practice to those farmers already converted to its adoption by other methods. It is by no means easy to carry out such a programme because you have to know exactly which stage of the adoption process the farmers you want to reach are in.

Traditional farmers

Naturally, some farmers pass through this process much more quickly than others. When you, as advisers, would like to increase the speed of the adoption process, you will first have to understand why there are differences among the farmers in their rate of adopting new practices. In order to answer this question we shall first discuss why it is difficult to change people in general. The behaviour of people is based on the opinions they have. These opinions are not separate segments of the human mind, but form an interrelated whole. Therefore, when you wish to change a farm practice, especially if it is a major one, the farmer will have to change many of his

opinions. On many farms in the Netherlands for instance it would be possible to increase the income of the farmers by intensification; more poultry, pigs or horticulture, for example. Such intensification, however, calls for a lot of capital, which many farmers could borrow if they liked, but often do not want to. Why not? Quite probably the reason is partly to be found in the traditions of the subsistence farming of former centuries, which are even today still influencing the way of thinking of many farmers. In a subsistence economy money cannot be invested in order to increase income. Here every expense is a loss, which induces the farmers to keep their expenses at the lowest possible level and to be self-sufficient wherever possible. Often much more labour is needed when you make something yourself than when it is made by a specialized firm. This, however, is not a serious consideration for many subsistence farmers, because they do not see any alternative way to use the labour of their family. They know that they have to work long hours in order to make a living. This is reflected in the norms of the community; often a farmer, who reads a book or visits a meeting in the day-time is considered a lazy fellow. This way of thinking was quite justifiable, when farming was part of a subsistence economy.

But even at this moment, when the Dutch farmers are working for a world market, many of them have retained some elements of this old way of thinking. Today such conceptions retard the adaptation of the farm to changing circumstances. It is difficult to change, however, because it is not only an interrelated whole within a person, but also with the norms of the whole rural community. These norms for instance place a high value on hard work; work, by the way, which in the opinion of these villagers means manual labour, not managing their farms.

When a farmer is given to the traditional way of thinking it is far more difficult for him to adopt new practices than when he is a modern business manager. Mr. Moore has told you already that the agricultural advisers often expect the farmers to be business managers and, therefore, advocate new practices which are profitable if you calculate your profit as a business manager, but not at all if the traditional way of calculating is used. When a traditional farmer seeks advice from an agricultural adviser, he feels more or less obliged to follow this advice even when he is not convinced that it is correct. Naturally this is unpleasant; therefore, many traditional farmers are not interested in the use of advisory methods that give information contrary to their own views. It is quite clear from research that these traditional farmers who, objectively speaking, could greatly benefit by your work, in practice make much less use of all advisory methods than do modern farmers.

One of the most important ways to increase effectiveness of advisory methods in the Netherlands is, therefore, to change the traditional outlook of many farmers into the way of thinking of a modern business manager. Naturally this is a lengthy educational process, which cannot be done by the advisory service alone. However, part of it can, by educating the farmers not to follow blindly their advisers, but to think for themselves about the solution of their problems and the management of their farms as a whole. Undoubtedly this is a far more difficult educational problem than merely telling the farmers to spray with this pesticide or apply so much of that fertilizer. In the long run, however, I am sure that it will be much more effective.

Understanding this traditional way of thinking of many farmers is without a doubt very important for the Dutch agricultural advisory service, even though Dutch farmers are certainly not conservative as compared

with farmers of most other countries^{2 3 4}. However, I shall now have to turn my attention to the separate advisory methods.

Mass Media

Mass media draw the attention of the farmers to new practices, but they do not often convince the farmers of the value of these practices. One of the reasons is that most farmers do not have so much confidence in scientific research that they dare to apply the results of experiments on their own farm before they have been tried out by practical farmers. Another reason is that there is so much published about farming that nobody is able to give attention to all of it. Everybody has to be selective. In which way do people select the mass media to which they pay attention?⁵

There has been published a number of articles which tell us that heavy smokers have more chance to get cancer than people who do not smoke. Now a heavy smoker can do one of several things. He can become convinced that this information is correct and stop smoking; but, you know, this is not easy. When he would continue to smoke in this case, he is in the unpleasant situation to increase knowingly his chance to get cancer. You will understand that the easiest and most pleasant solution would be simply not to read these articles. Research has shown indeed that the articles are read more frequently by non-smokers than by heavy smokers. However, some heavy smokers have read these articles, and it is clear that it is much more important for them than for the non-smokers that not every heavy smoker will get cancer. Therefore they give much attention to this kind of information. Furthermore nobody can remember all he has read and you will agree that it is more important for the heavy smokers than for the non-smokers to forget the possibility of a relationship between smoking and cancer. Therefore this is what will happen.

These three processes: selective exposure, selective perception and selective retention, are major reasons why it is difficult to change opinions and behaviour with mass media, especially when your audience is not from the outset interested in making a change. Personal influence is often more effective in this way, because the exposure to personal influence is often less selective. When you meet a friend, you do not often know in advance what he will start talking about, do you? Also selective perception of personal influence is less probable. When somebody misinterprets what you are saying to him, because he only perceives those parts of your communication that are in agreement with his previous opinion, you will usually grasp his misunderstanding and try to correct him. With a mass medium you cannot have such a discussion.

The effect of mass media does not only depend on their contents, but also on the way they are used. There is a nice little study on the use of different kinds of leaflets. Leaflets could be printed in colours or in black and white, or mimeographed. It was not hard to find out the most expensive way, but it could only be guessed what was the effectiveness of these three different kinds of leaflets. Therefore, to a random sample of 50 farmers colour printed leaflets on an acute plant disease were mailed; another group received black and white printed and a third group mimeographed leaflets. All leaflets had exactly the same contents. A week afterwards a group of 20 students went out to ask all these farmers, whether they could remember having received a leaflet, what they remembered of the contents and whether they had sprayed their strawberries as advised in the leaflet. There appeared to be no difference at all in the effect of cheap mimeographed and expensive colour-printed leaflets⁶. This is only one experiment,

so I do not want to say that you will find the same result under all conditions.

The Dutch agricultural advisory service uses one mass medium that is very well liked by the farmers. When a local adviser sees that many of his farmers are faced with the same urgent problem, he will often send them a mimeographed letter about it. If it takes less than 5 minutes to read this letter, nearly every farmer will read it and the vast majority will be grateful for this practical information. Therefore, this is an excellent way to arouse interest in the agricultural advisory service. However, in some districts it is not sent to all farmers, but only to the members of the advisory club. There is little need to try to arouse their interest, for the simple reason that they are already interested in the advisory work. Every advisory method has its own place in the advisory programme but it is not always easy, though very important, to select the right place.

Farm visits

The most important advisory method used in the Netherlands is the farm visit of the local adviser, sometimes at the request of the farmer, sometimes on the initiative of the adviser. Many farmers would prefer that the adviser would visit them more frequently without having to request him to. Usually the local adviser is a farmer's son from a neighbouring district with a somewhat better education, at a farm institute, than most farmers have. He is living in one of the villages of his district and may become an influential person there. One of the strong points of this system is, in my opinion, that there is not a great difference in status between the local adviser and the farmers.

This does not mean that it is always easy for an adviser to reach his objectives during a farm visit. A farmer in a rather conservative district expressed the problems of the advisers excellently: 'He comes as a young lad to a strange village and there has to tell the old experienced farmers which mistakes they make, in such a way that they correct these mistakes'. It is clear that it is very easy for an adviser to bring the farmer to a defensive position, which makes it practically impossible for him to change the farmer's behaviour'. In the past year psychologists have started training courses, to teach the advisers how to handle this problem⁸. In one of these courses role playing was used as a teaching method; an experienced adviser acted as a conservative farmer and one of his colleagues tried to convince him of the value of a new farm practice, but he by no means succeeded. Then a psychologist tried to convince this 'farmer'; she did not know anything about agriculture, but even then she was able to make him change his opinion, merely by not provoking a defensive attitude. Naturally a good adviser needs a sound training in subject matter, but, in order to get this knowledge on subject matter across to the farmers, he will need training in human relations as well. Part of this training can be based on research outside the agricultural advisory service, but for a really good training programme we also need research within the agricultural advisory service.

In order to explain the difference between the approach of the psychologist and the approach to which many advisers are inclined, we first have to distinguish some stages of a discussion in which a solution is found for a problem:

1. the partners agree on the problem;
2. an analysis of the causes of this problem;
3. testing several possible solutions for this problem and selecting the best solution;

4. carrying out this solution;
5. evaluating whether the problem has indeed been solved.

Usually an adviser will encounter much the same problems on many farms, so he can pass stages 1 and 2 quite quickly and will be inclined to start immediately on stage 3 or even on 4. The psychologist, however, is aware of the fact that the farmer may have a different problem in mind than the adviser has, or if he has the same problem in mind he may see the causes of the problem differently. Therefore he starts listening to the farmer and does not give his information until the farmer expresses his need for it. At that moment the farmer will not be on the defensive against an attempt to help him. But when he is not yet ready for this information, the farmer will consider the observations of the adviser as an attempt to influence him, and will often try to resist this influence.

This idea, that information should not be given before the farmers need it, is, by the way, a major reason why the Dutch agricultural advisory service started a few years ago to plan their programmes in co-operation with representatives of the farmers themselves. This makes it possible to concentrate the programme plan on the problems the farmers feel they have. Perhaps these are in the eyes of the advisers not the major problems of the farmers in their district, but there is little point in the advisory service trying to solve a problem for the farmers, that the farmers themselves do not feel as really important. They can only try to make the farmers aware of these problems in order to make it possible to seek a solution in the future.

It is impossible for a *local* adviser to visit regularly all of the 400 farmers in his district. Therefore, he has to be selective in his visits and can only hope that what he tells one farmer will be passed on to the others. In practice most local advisers in the Netherlands do not as a rule select the farmers they will visit on the basis of the influence they have in their neighbourhood, but because of the interest they show in agricultural advisory work. The progressive farmers are visited far more often than the traditional farmers; consequently the least efficiently managed farms receive the fewest visits. You may think that this is wrong, but before we are able to make such a judgment, we have to know how influential are different groups of farmers. Therefore research has tried to measure the influence different farmers have in their community in two distinct ways. In the first place a group of judges was asked to rate the influence of each farmer in his community, when farmers were talking together about farming. In the second place every farmer in these communities was asked to mention two farmers he would probably ask for advice when he was not sure whether a new practice would be worth while, to mention two farmers he considered good farmers, and two farmers to whom he talked most often. This makes it possible to count how often every farmer is mentioned by his neighbours. Many farmers are not mentioned at all and some are mentioned quite often. The farmers who are often mentioned in connection with one question are usually the same as those who are mentioned in connection with the other two questions and who are rated as influential farmers.

In each of the 5 communities where this kind of study has been made, the influential farmers had much contact with the agricultural advisory service and had adopted many new farm practices. This means that there exists a trickle-down process which greatly facilitates the work of the agricultural advisers. When an adviser tells something to a progressive farmer, he may assume in the Netherlands that it will be passed on to the less progressive farmers. However, there are some indications that this is only a slow process. In the first place most farmers mention friends, who have somewhat more contact with the advisory service than they themselves

have, though not much more. A very progressive farmer will only rarely call on a traditional farmer. Furthermore the relationship between influence, and contact with the advisory service is much stronger in a progressive community than in a rather conservative community. (In one study $r=0.68$, resp. $r=0.31$). I would not be astonished if in another study of a very traditional community we should find no relationship at all. Therefore, one cannot count on the trickle-down process, especially in those circumstances where it is needed most. In general it seems wise for the Dutch agricultural advisory service to spend more time with progressive farmers than with traditional farmers, although they may be overdoing it. Naturally there are many progressive farmers who are not very influential.

One method of using this idea of the influential farmers is to work with pilot farms, where the farmers are co-operating closely with the advisory service, and show on their farms what progress can be made. When it is known that most farmers will not adopt new practices before they have seen them on a farm in their neighbourhood, this would seem to be a very effective advisory method. Sometimes, however, it is not so effective; partly because in many parts of the Netherlands it is not usual to invite the other farmers in the village to a visit to the pilot farm, as is done in Northern Ireland, but probably there are also other reasons. In one village for instance the pilot farmer was mentioned by 23 per cent of the farmers as one of the two best farmers of the village. This looks like an ideal choice, but only 10 per cent of the farmers said they had visited the pilot farm during the past year. One reason was its geographical location, but more important probably was that the pilot farmer is a son of a well-to-do farmer with few children. So the reaction is quite often: 'Sure, he can improve his farm in that way, but we, ordinary farmers, will never be able to follow him'. These reactions are no exceptions, because the farmers can have either of two opinions about a good pilot farm. They can admit that this farm is progressing far more quickly than their own, because its management is better, or they can dig up some reasons why they cannot manage their own farm as well as the pilot farm. It is clear that the latter solution is the most pleasant for their self-esteem and, therefore, it is found quite often. Perhaps it would be better not to give a farm the name of pilot farm, but only to improve its management. Giving it the name of 'pilot farm' makes it distinct from the other farms, which may make it less influential.

Group methods

While we are talking about influential farmers, you may like to consider how much influence they have. At this moment it is still very hard to measure, but there are indications that farmers have a considerable influence on their friends. One indication is that there usually is some similarity between the way a farmer manages his farm and the way his friends do. The strongest example we found was in the case of the brand of milking machine in one community. Of the pairs of friends both of which had a milking machine 62 per cent had the same brand, although you could expect this by chance to be only 15 per cent. Now it is very hard to say whether one brand of milking machine is better than another, so the decision to buy a certain brand of milking machine has to be made in a very ambiguous situation. Laboratory experiments have shown that people in an ambiguous situation are usually strongly influenced by their friends⁹. But how often does a farmer have to make a decision in an ambiguous situation? When, for instance, he is considering buying a combine harvester, the profit will come partly from the possibility of harvesting, with his own combine, his grain crop in a wet year in the few dry days there are. But how many

agricultural economists are there who dare say how many pounds this possibility is worth?

Not only the friends of a farmer usually have a strong influence on the management of his farm, but also the village community as a whole. In order to study this we have asked whether most people in the village think favourably about a farmer who is always among the first to try out something new. In one village this was for the vast majority of the people a reason for a favourable opinion, and in another village for an unfavourable opinion. Naturally in the latter village it is far more difficult for a farmer to try out a new practice, especially when he is not quite sure that it will work, for hardly anybody likes it when all his neighbours think unfavourably of him. Indeed, the farmers in the village which approved of innovators had adopted far more new farm practices advocated by the advisory service, than those in the other village.

When the groups to which a farmer belongs have so much influence on his adoption of new farm practices, it would seem to be advisable for the advisory service to make use of the groups. Earlier we gave another indication in this direction. We said that most farmers will not adopt the new practices you advise before they have discussed their merits with their friends and neighbours. The adviser can leave these discussions to the farmers themselves, or he can try to join them in order to influence these discussions by some questions and remarks. It seems probable that the latter method would be the most effective. During several years this method has been used in the Netherlands; the advisers not only make farm visits and give lectures, but also discuss farming problems with groups of about 10 farmers in the home of one of them or in the local pub. This made it possible to get some indications as to the effectiveness of these discussion groups. We asked the farmers whether lectures or group discussions would have the most influence on their decision to adopt a new practice. 66 per cent considered discussions the most influential and only 10 per cent the lectures, whereas the others did not see much difference¹⁰. You can always doubt whether the farmers really know how they are influenced to adopt new farm practices, but the hypothesis of the large influence of group discussions can be tested experimentally, and this has been done quite often in the U.S.A. These experiments have not only shown that a well-trained discussion leader can achieve more change in behaviour and attitude with discussions than with lectures, but also that group discussions are more effective than advice given to separate individuals. Because human behaviour is strongly influenced by group norms, it is easier to change a group as a whole than to make a person deviate from the norms of his group.

This does not mean that it is always easy or even possible to change group norms. It is only possible when the new norms can meet the needs of the group members better than did the old ones. However, a well-trained discussion leader will better be able to make people aware of the need for new group norms under new conditions than would an untrained discussion leader. Therefore, the Dutch agricultural advisory service has recently started some training courses for discussion leaders, which I think can have an important influence on the effectiveness of this service¹¹.

Conclusions

. This idea, that the group to which a farmer belongs has a major influence on his behaviour, is starting to cause an important change in the Dutch agricultural advisory service. Before the war this service mainly gave advice about individual farm practices: fertilizing, plant diseases, and so on. After the war they continued to do so, but under the influence of the rapidly

increasing farm management research it was combined with advice on the farm organization. In recent years the advisory programme is expanding to groups of farmers, villages or even whole regions, because one sees that it is hard to change a farmer without changing the groups to which he belongs as well. You have seen that the adoption of new farm practices is related to the whole way of thinking of the farmers. This way of thinking a farmer does not get only by his birth, for it is highly influenced by the thinking of other people in the community where he is reared. Therefore an effective advisory programme should be directed to the community as a whole. Changes in agricultural technology are usually related to changes in other spheres of life. So also the objectives of the advisory programme are changing. Formerly this objective was to improve the management of Dutch farms; now educating the farmers is increasing in importance. The basic idea is that a modern farm manager will continuously seek to improve his farm, whereas a traditional farmer will continue to manage his farm in the way his father did, whenever possible.

I have given a broad view on the use of advisory methods, because it is our opinion that you can only solve the many detailed problems involved in the use of separate advisory methods, when you first have an idea of the adoption process as a whole. Also, I have given more attention to the traditional farmers, who are hard to reach, than to the modern farmers we find also in our country. However, I am aware of the fact that I did not solve most of the questions to which you would like to have an answer. This is only partly due to the restricted time available for a lecture, or to the fact that the circumstances in England are different from those in the Netherlands. Many research problems on the effectiveness of advisory methods are still unsolved. In 10 years time undoubtedly several of these problems will have been solved because the sociology and psychology sciences have reached a stage in which it is possible to do some fruitful research in this field. However, a researcher will never be able to resolve all your questions, because every situation and every farmer is different. Therefore, for every case you will have to find a new solution, and you will never be able to do so by just following a standard recipe. This makes your job both a challenging and an interesting one. Perhaps, however, you can use some general principles on the effect of advisory methods on the adoption of new farm practices to find the right solution in every case.

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