

Research in the field of advisory work¹

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Summary

Agricultural advisers all over the world have long been helping farmers to apply appropriate research findings. It is only in recent years, however, that scientific study of the best way to give this help has been undertaken. The purpose of the present report is to summarize this relatively new field of enquiry. The paper is based chiefly on research done in the Netherlands, but reference is also made to work carried out in other countries. It is thus hoped to set the specific Dutch efforts in a more general framework.

Two major problem areas are primarily discussed in this context:

1. The willingness and ability to utilize agricultural advice and innovations clearly depends, in a large measure, on the possession of a suitable frame of mind, namely one characterized by modern, open-minded and business attitudes towards the farm and the whole life. Such qualities, however, are usually absent in the more traditional farmer's way of thinking, and therefore it is precisely those individuals most in need of advisory work, who make the least use of it. If this difficulty is to be overcome, the traditional way of thinking must be understood, the way in which it differs from the adviser's own approach to farm management must be perceived and an attempt must be made to interpret the latter in terms of the former;

2. Effective transmission of research findings to the farmer requires knowledge as to which media and settings of communication are best suited for this purpose. In this connection it seems that farmers are usually first made aware of the existence of new farm practices by the mass media, but their decision to adopt or not to adopt these practices is determined rather by personal influence. It is also suggested that the use of personal contacts in the later stages of the adoption process can be made most effective through the non-directive approach and the employment of group discussions.

In this respect a significant difference between the progressive and the traditional communities has been noted. In the former, the farmers who are most influential among their colleagues usually also have many contacts and points in common with the advisory service and are thus able to mediate properly in the communicative process. In the less modern villages, on the other hand, opinion leaders are not progress oriented, and thus it may prove more difficult to use them as mediators in advisory work. For this very reason, however, the non-directive approach appears here to be of even greater importance and effect, as ordinary extension methods are likely only further to arouse the traditional farmer's resistance to change.

1. Introduction

One of the main tasks of an advisory officer is to teach the farmer to apply the findings of agricultural research in his work. But what about the advisory officer himself? Should he not also adopt the approach he tries to develop in the farmer,

¹ Revision of a paper read to the Advisory Methods Section of the Agricultural Education Association, London 8th December 1960. Several people have made valuable suggestions for this article; especially the very careful editing by *D. Weintraub* from the Hebrew University has been helpful.

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namely the utilization of scientific research? Or, in other words, should he not apply the findings of appropriate studies to his own advisory methods? One probably will generally agree that this should be done if it would thus be possible to improve advisory work. Therefore, the two questions this paper will discuss are:

1. Have sociology and psychology already reached a stage in which it is possible to do any fruitful research in this area?
2. Are there already any research findings that can actually be applied by the advisory service in its work? In answering these questions, reference will be made chiefly to research done in the Netherlands without neglecting, however, work from other countries. A few words on the framework within which this research is carried out here seem thus indicated.

The first of the Dutch studies on this subject was a master's thesis in rural sociology, done in 1952 by a student in the Agricultural University of Wageningen.² Now there are five rural sociologists engaged in this kind of investigation (though three of them on a part-time basis only).³ So far there has not been any psychological research directly concerned with agricultural advisory problems, but I hope it will start in 1961. Understandable enough, such a rapid increase of scientific work in a new field would be impossible without the active interest and support of some key-figures in the advisory service itself. These leaders have realised that though the Dutch farmers are by no means less progressive and advanced than those in other Western countries, a still closer co-operation with the advisers' would further increase their income and the continuous improvement in the efficiency of its work has consequently been the advisory service's target.

Let us now consider the actual contents of this research.

2. Stages in the adoption process

A farmer does not usually adopt a new practice overnight; it often takes several years from the moment he first hears about it, until he adopts it completely. Quite often he distrusts the strange new idea at first, especially when it is significantly different from the practices he had followed for years. Later, however, he becomes interested and collects more information, which makes it possible for him to evaluate the usefulness of this practice on his farm. If he decides that it might indeed be of benefit, he will, if possible, first try it out on a small scale; and only when the results of the experiment on his own farm are favourable, he will start using it more fully. This adoption process might be stopped in any of the stages mentioned in some practices the farmer will never become really interested; and others he will finally reject, either because they actually did not work even though he tried them out properly, or perhaps because he made a mistake in the trial.⁴

² Summarized in: *A. W. van den Ban*, Who are influenced by the agricultural extension service? *Landbbk. Tijdschr.* 65 (1953) 317—327 (in Dutch, English summary).

³ 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. Houuttuyn 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 research institutes and the local advisers.

⁴ See: *J. M. Bohlen* and *G. M. Beal*, The diffusion process. Iowa State College, Special Report No. 18, 1957.

An important point to note is 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 the radio. In the Netherlands, however, the influence of these media on the decision whether to adopt a certain practice is insignificant. At this point it is far more important for the farmer to hear what other farmers say about their experiences, and also — especially for the progressive farmers — the comments of the advisory officer. Thus, the adviser who wishes to help his farmer with this adoption process has to plan his advisory program most carefully and use different teaching methods at different times and in different situations, for only thus will he provide the farmer with the successive learning experiences he needs in each stage.

3. Traditional farmers

Naturally some farmers go through the adoption process more quickly than others do. Partly this will be caused naturally by individual differences, such as ability, but there are also other reasons. If a farmer adopts an agricultural innovation, especially if it is a major one, this often involves quite a change in his way of thinking; not only about this practice but also about many other things.

Opinions and attitudes of a person form an interrelated whole. Therefore, if a farmer changes his opinion about an important new practice, he also has to change many other opinions. This is especially true for the traditional peasants, who have many opinions and attitudes, that are in disagreement with the business outlook of the farm manager modern farming presupposes.

On numerous farms in the Netherlands, for instance, it would be possible to increase the income by intensified production in various agricultural branches, such as poultry, pigs, horticulture and others. Such an intensification calls, of course, for a lot of capital, which the farmers often do not have but which they could borrow if they liked to. Often, however, they do not want to do so. Why not? Quite probably the reason is at least partly to be found in the experiences of subsistence farming of former centuries, which still constitute a part of many farmers' mental make-up, and continue to influence their entire way of thinking. In a preponderantly subsistence economy the farmer clearly could not invest money except for buying more land in order to increase his income. If he does not sell his farm products, investments will not increase the profit of his enterprise, but only the level of household consumption or the amount of leisure. This obviously induced the farmer to cut expenses to the minimum and to provide for himself whenever possible. Furthermore, this practice was adopted usually also in respect to those few commodities which could even then be bought from specialised firms.

This obviously represented a theoretical loss, since home production often required comparatively more labour, but such a consideration was not important in an economy of this type, because no alternative way to use the family man-power existed. Significant elements of this pattern persist in many communities to the present day, long after the Dutch farmers have ceased to operate in a subsistence economy and have begun to produce for a world market.

The structure of these old attitudes, moreover, is still not only an interrelated whole within a person, but also integrated with the norms of the whole rural community. Hard work and long hours for all the members of the household are thus here considered as values in themselves, with the likely consequence of condemning leisure,

and labour and time-saving services: a farmer who reads a book or attends a meeting in the day-time is indeed often considered just a lazy fellow. In the same way, high value is attached to the economic autarchy of the farm, which might impede transition to more specialized farming and intensive capital investment with the aid of loans. And last but not least, farming as a way of life is regarded as being based on actual manual labour, rather than on the application of managerial skills.

Obviously, conceptions of this nature retard the adaptation of the farm to the changing circumstances: when a farmer is given to this traditional way of thinking, it is far more difficult for him to accept new practices than it is for a person who views his farm largely as a modern business enterprise. However, the agricultural advisers do quite often expect all the farmers to think and act as business managers and advocate new practices which are profitable if the farmers in fact calculate their profits in a business way, but not when they use the traditional economic concepts.

Now if a traditional farmer himself sought help from an agricultural adviser, he would feel more or less obliged to follow it even if he were not convinced that it was correct. Naturally this is rather unpleasant; and for this reason many traditional farmers do not ask the advisers for information and suggestions that might be contrary to their own views. It is quite clear from the research done that these traditional farmers who, from the rational point of view could greatly benefit by the adviser's work, in practice make much less use of this work than modern farmers do.

One of the most important ways of increasing the effectiveness of advisory methods in the Netherlands is, therefore, to transform 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 accomplished by the advisory service alone. However, this service can make its contribution by educating the farmers not to follow blindly its advisers, but to think out for themselves the solution to 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: "spray with this pesticide or apply so much 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 more fully is no doubt very important for the Dutch agricultural advisory service. This, however, is clearly beyond the scope of this brief survey⁵, and we must now turn our attention to the problem of the different advisory methods.

often convince them 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 too much is published about farming for

4. Mass media

Mass media draw the attention of the farmers to new practices, but they do not

⁵ See for this traditional way of thinking:

R. Redfield, *Peasant society and culture*. University of Chicago Press, 1956.

A. W. van den Ban, Some characteristics of progressive farmers in the Netherlands. *Rural Sociology*, 22 (1957) 205—212.

S. P. Bose, Calcutta, India. Forthcoming article.

A. J. Wichers, Vroeger en nu in het economisch denken op het platteland (Past and present in the economic reasoning of rural people). (in Dutch). *De Economist*. Forthcoming.

any one person to be able to read. Everybody has to be selective. In what way do people select the mass media and the specific items to which they pay attention? ⁶ Let us take an example from the field of smoking. A number of articles have been published recently which tell us that heavy smokers are more likely to get lung 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 this is not easy. Should he, however, continue to smoke, he puts himself in the unpleasant situation of consciously increasing his chances to get cancer. The easiest and most pleasant solution would be simply not to read these articles. Research has indeed shown that they are read more frequently by non-smokers than by heavy smokers. However, some heavy smokers have read the articles; for them it is much more important than for the non-smokers to be told that the relationship of smoking and cancer is not absolute. That is to say, that not every heavy smoker will get lung cancer and that this disease can also, though to a lesser extent, attack those who do not smoke at all. Therefore the heavy smokers will give more attention to these elements in the articles. Some will even go so far as to reject completely any relationship between smoking and the chance of getting cancer. Furthermore, nobody can remember all he had read, and therefore forgetting is yet another possibility to solve the dilemma. Again, it is more important for the heavy smokers than for the non-smokers; so among the first group we shall find most people out of whose memory this knowledge largely disappears. ⁷

These four processes: selective exposure, selective perception, selective acceptance and selective retention, are the major reasons why it is difficult for mass media to change opinions and behaviour, especially when the 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 usually less selective. When one meets a friend, one often does not know in advance what he will start talking about. Selective perception of personal influence is also less probable. When somebody misinterpretes what you are saying to him, in that he perceives only those parts of your communication which are in agreement with his previous opinions, you will usually grasp his misunderstanding and try to correct him; with a mass medium the communicator is not in a position to do so. In the same way personal contact makes out-right rejection more difficult, both because the refutations can be immediately and specifically parried by the communicator and because of personal trust reposed in him, when this is in fact the case.

The effect of mass media depends not only on their contents, but also on the way they are used. There is, for example, an interesting small study on the use of different kinds of leaflets. ⁸ One can print leaflets in colours, in black and white, or just mimeograph them. It is, of course, quite easy to find out which type is the most expensive one, and which the most economic, but without proper research, their relative effectiveness can only be guessed at. The study in question therefore selected a

⁶ See: *J. T. Klapper*, *The effects of mass media of communication*. The Free Press of Glencoe, Ill., 1960.

⁷ A practical summary of research on these and other psychological processes is: *H. I. Abelson*, *Persuasion, How opinions and attitudes are changed*. Springer Publishing Co., New York, 1959.

⁸ *J. W. Schellekens* and *A. J. Wichers*. *De Vormgeving van voorlichtingsdrukkerij (The effectiveness of three kinds of advisory leaflets)* (in Dutch). *Bull.* No. 19, Department of Rural Sociology, Agr. University, Wageningen.

group of 150 farmers and mailed to them a leaflet on an acute strawberry disease, each random sample of fifty receiving a different type of leaflet. A week afterwards a group of 20 students went out to ask all these farmers:

1. whether they remembered receiving a leaflet,
2. what they remembered of its contents, and
3. whether they had in fact sprayed their strawberries as advised in the leaflet.

There appeared to be no difference at all, on any of these points, in the effect of the economical mimeographed leaflets and the expensive colour-printed ones. It is, of course, impossible to draw general conclusions from a single experiment. Therefore it will have to be repeated under different conditions in order to be more fully validated. In spite of this limitation, however, this study indicates how research can give advisers the information they need for the decisions they have to make.

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 do so, and the vast majority will be grateful for this practical information. Therefore, this mass medium is an excellent way to arouse interest in the agricultural advisory service. However, in some districts it is not sent to all the farmers but only to the members of the advisory club; it are precisely these people whose interest need not be awakened, for the simple reason that they are already interested in the advisory work. This example clearly illustrates the fact that every method of communication has its own place in the advisory program, and that it is very important — though not always easy — to use it in the right way.

5. Farm visits

The most important advisory method used in the Netherlands is the farm visit paid by the local adviser, sometimes on his own initiative, and sometimes at the request of the farmer. Many farmers would like the adviser to visit them more frequently without having to request him. This local adviser is usually a farmer's son from a neighbouring district with a somewhat better education than most farmers have, though not a university training. He lives in one of the villages of his district and may become an influential person there. In my opinion, one of the strong points of this system is the relatively small 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 has to tell the old experienced farmers there what mistakes they make in such a way that they will correct them." Clearly, it is very easy for an adviser to put the farmer on the defensive, which makes it practically impossible for him to change the farmer's behaviour. In the past year psychologists have started training courses designed to teach the advisers how to handle this problem.⁹ 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 — unsuccessfully — to convince

⁹ Their solution is based on Carl Rogers' Counseling therapy; see: *E. Goubitz, Gespreksvoering. Nederl. Tijdschr. voor de Psychologie en haar grensgebieden*. 14 (1959) 485—503.

him of the value of a new farm practice. Then a psychologist took over; she knew nothing about agriculture, but even so she was able to make the "farmer" change his mind, merely by not provoking a defensive attitude in him. Naturally a good adviser should know what to teach, but he should also know how to teach. The latter knowledge can be taught, in part, on the basis of research outside the agricultural advisory service; however, a really good training program for advisory officers requires research within the service itself as well.

In order to explain the difference between the approach of the psychologist and that to which many advisers are inclined, we first have to distinguish the stages in a procedure designed to find the solution to a problem:

1. definition of the problem to be solved;
2. analysis of the causes of the problem;
3. testing several possible solutions and selecting the best one;
4. carrying out this solution;
5. evaluating whether the problem has indeed been solved.

Usually, an adviser will encounter similar problems on many farms, and he may be inclined to pass stages 1 and 2 quickly and start immediately on stage 3 or even 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 refers to the same problem — he may see its causes differently. Therefore he first listens to the farmer and does not give his information until the farmer has expressed his need for it. At that moment the farmer will not defend himself against an attempt to help him. However, should the information be offered before he is ready for it, the farmer may feel it to be an attempt to influence him and will often try to resist this influence.

Such a non-directive approach to advisory work is probably most important and especially effective in traditional communities. There has as yet been no specific study designed to compare systematically the effect of this method among the progressive and the traditional farmers. However, the likelihood of the adviser and the farmer having different problems in mind is much greater in the non-modern village, for reasons which we have shown in the preceding section.

This idea, that information and suggestions should not be given before the farmers feel they need it, is, by the way, a major reason why the Dutch agricultural advisory service started, a few years ago, to plan its programs in cooperation with representatives of the farmers themselves. This makes it possible to concentrate on the problems the farmers themselves are conscious of having. These may not be, in the advisers' opinion, the major problems of the farmers in their districts; but it is of no use for the advisory service to try solving a problem which, to the farmers, does not seem to be a really important one.

6. Influential farmers

It is, of course, impossible for a local adviser to visit regularly all of the approximately 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 probably do not select the farmers they 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 thus visited far more often than the traditional ones; consequently, the least efficiently

managed farms receive the fewest visits. This might seem to be the wrong way, but before such a judgement can be made we have to know the degree in influence wielded by different groups of farmers. A research project has therefore been undertaken to try to measure the influence of different farmers in their districts. First, a group of "judges" well acquainted with their communities was asked to rate the influence of each farmer in informal talks about farming, taking place in the community. Second, every farmer in these villages was asked to mention:

1. two farmers to whom he would probably turn for advice when in doubt about the value of a new practice,
2. two farmers he considered good ones,
3. two farmers to whom he talked most often.

This made it possible to count how often every farmer was mentioned by his neighbours in respect to the different questions raised. It was thus found that many were not mentioned at all, while others were mentioned quite often; and that those who were often mentioned regarding one point, were usually also singled out in respect to the others. That is to say, the farmers also were considered good and who had the greatest number of contacts with their neighbours, were also rated as the most influential ones.

Now in each of the 5 communities in which this kind of study was made, the influential farmers also had frequent contacts with the agricultural advisory service, and were adopting many new farm practices. This means that there exists a trickle down process, in which communication is diffused from the adviser to the opinion leader and from him to the community in general; and this greatly facilitates the advisory work. In the Netherlands, indeed, when an adviser tells a progressive farmer something, he may assume that it will be passed on to the less progressive ones.

However, there are indications that this process is slow, as well as very uneven. In the first place, not all progressive farmers are also very influential and do not thus help in the communicative process. Secondly, such communication is usually carried out on similar or adjacent levels, but not between extreme ones: in this way most farmers mentioned friends who were as close as or only somewhat closer than themselves to the advisory service, and it was found that a traditional farmer would only rarely call on a progressive farmer. Finally, the relationship between influence and contact with the advisory service was found to be much stronger in the progressive community than in the conservative one. It is quite possible that in an extremely traditional village no relationship at all would be established. Therefore, an adviser often cannot count on the trickle-down process especially in those circumstances in which he needs it most: with traditional farmers and/or very traditional communities. Nevertheless, it seems in general wise that the Dutch agricultural advisers spend more time with the progressive farmers than with the traditional ones, although this practice may sometimes be overdone.

One method of using the idea of the influential farmers is to work with pilot farms, whose cultivators cooperate closely with the advisory service, and show what progress can be made. Most farmers will not adopt new practices before they have seen them on a farm in their neighbourhood; and this would, therefore, seem to be a very effective advisory method. Sometimes, however, this is not so, partly perhaps, because in many parts of the Netherlands the advisers do not actually invite the other farmers in the community to visit the pilot farm. At the same time, there probably are also other reasons. In one village, for instance, the pilot farmer was mentioned by 23 % of the interviewees as one of the two best farmers in it. At first glance, his choice

for demonstration purposes would thus seem an ideal one; however, only 10 % of the farmers said they had visited his farm during the past year. This was in part due to its geographical location; but more important still was probably the fact that the pilot farmer was the son of a well-to-do family with few children. The reaction was thus quite often: "Sure, he can improve his farm in that way, but we, ordinary farmers, will never be able to follow him". Reactions of this kind are no exception, because the farmers can have either one of two opinions about a good pilot farm: they can simply admit that it is progressing far more quickly than their own owing to better management; or they can dig up reasons to explain why their farms cannot be managed as well. It is clear that the latter attitude is more flattering to their self-esteem. Perhaps it would be better not to use the term "pilot farm" at all; by putting on this label it is made even more different from the other farms, no matter how carefully selected, and its influence may thus actually diminish.

7. Group methods

It is clear that some farmers have more influence than others, but it is hard to measure how much influence they really wield and why. There are, however, indications that patterns of friendship are of considerable importance in this respect. One such indication is that there usually is some similarity between the way a farmer manages his farm and the way his friends do. The most conspicuous example we found was in the case of the brand of milking machines in one community. It is obviously very hard to say whether one brand of milking machine is better than another, and the decision which to buy has to be made in a very ambiguous situation. Now laboratory experiments have shown that people in such a situation are usually influenced by their friends.¹⁰ This has indeed been the case in the village described: of the pairs of friends both of which had a milking machine 62 % had the same brand, while the probability of this happening by pure chance is only 15 %. Moreover, such an unclear situation is by no means infrequent in agriculture. For instance, when a farmer considers the purchase of a combined harvester, the return on the investment will come, partly, from the possibility of harvesting his grain crop, in a wet year, in the few dry days there are. But how many agricultural economists will risk estimating how many guilders this possibility is worth, and decisively advise the farmer in this respect?

Not only the farmer's friends but also the village community as a whole usually have a strong influence on the management of his farm. In order to study this effect, a comparison was made between two villages as to their opinion of innovating farmers, namely those always among the first to try out something new. For the vast majority of people in one village this was a reason to have a favourable opinion; in another, to have an unfavourable one. Naturally, in the second community it would be far more difficult for a farmer to try out a new practice, especially if he is not quite sure that it will work: few people like all their neighbours to think ill of them. Indeed, many more innovations were adopted in the well-disposed village than in the adversely oriented one. Partly these differences between villages in the adoption of farm practices can be explained by differences in the education of the farmers, farm

¹⁰ e.g. M. Sheriff, Group influences on the formation of norms and attitudes. In: E. E. Maccoby, Th. W. Newcomb and E. L. Hartley, Readings in Social Psychology. Third ed., Henry Holt, New York (1958) 219—232.

size etc. Usually, however, these factors cannot explain the whole difference, but the effect of the village community has also to be taken in account.¹¹

Since the groups to which a farmer belongs have so much influence on the adoption of new farm practices, it would seem desirable for the advisory service to use these groups. Earlier we gave another indication in this direction. We said that most farmers will not adopt the new practices the advisory service advocates 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 or direct them by questions and remarks. It seems probable that the latter method would be more effective. For several years this method has indeed 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 has made it possible to ask the farmers whether lectures or group discussions have a greater influence on their decision to adopt a new practice. 66 % of those asked considered discussions more influential; only 10 % emphasized the lectures; while the others did not see much difference between the two. It is, of course, not certain whether the farmers can themselves estimate properly the influence exercised on them by different advisory methods; but the hypothesis of the strong impact of group discussions can be tested by experiments as well. This has indeed been repeatedly done in the U.S.A.; these experiments have not only shown that a well-trained discussion leader can achieve greater change in behaviour and attitude by means of discussions than is possible 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 to deviate from the norms of his group.

This does not mean that it is always easy or possible to change group norms. When the majority of the group rejects the new norm, group discussions are probably even less effective than lectures or farm visits. This might happen since it is possible to change group norms by discussions only when the new norms can meet the needs of the members better than did the old ones. However, a well-trained discussion leader will be better able to make people aware of the need for new group norms under new conditions than an untrained one. Therefore, the Dutch agricultural advisory service has recently started some training courses for discussion leaders, which, I think, can greatly increase the effectiveness of this service.¹²

The idea that the group to which a farmer belongs is a major influence on his behaviour has indeed initiated an important change in the Dutch agricultural advisory service.¹³ Before the war this service mainly gave individual advice about specific farm practices: fertilizing, plant diseases, and so on. After the war it continued to

¹¹ e.g. *A. W. van den Ban*, Locality group differences in the adoption of new farm practices. *Rural Sociology*. 25 (1960) 308—320.

¹² These courses are based on group dynamics theory; see *D. Cartwright* and *A. Zander*, Group dynamics, research and theory. 2nd ed. Row, Peterson and Co, White Plains, N.Y., 1960.

¹³ See: *J. P. A. van den Ban*, Nieuwe werksituatie bij de voorlichting (New circumstances for the advisory service). *Landbouwk. Tijdschr.* 72 (1960) 714—723 (in Dutch).

One can also get an idea of the increasing impact of research in the Dutch agricultural advisory service by comparing an 8 years' old textbook with a recent one: *J. M. A. Penders*, ed. Methods of agricultural extension. Wageningen (1953) and *J. M. Schijen*, ed., *Agrarische voorlichting* (Agricultural advisory work) Den Haag, 1961 (in Dutch).

do so, but under the influence of the rapidly increasing farm management research this combined with advice on farm organization. Then in recent years the advisory program has expanded again to include groups of farmers, villages or even whole regions, because of the realization that it is difficult to change our individual farmer without at the same time changing also the group to which he belongs.

8. Conclusion

We have seen that many important findings of agricultural research are not as yet generally applied by the farmers, and that, consequently, the advisory methods are in need of further improvement. I hope to have also shown that sociological and psychological research can already offer significant help in this direction. Undoubtedly, these disciplines cannot yet solve all the problems advisers encounter. However, there are sound reasons to believe that the increase in the kind of research described will enable us to contribute more in the future. It will never be possible, of course, to offer the adviser a standard recipe, because every farmer and every situation he encounters are different. But it is precisely this which makes advisory work both interesting and challenging.

LITERATURE

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