

EXTENSION RESEARCH NEEDS IN DEVELOPING COUNTRIES

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The main emphasis in this article is on what kind of research is needed to improve agricultural extension in developing countries. Research can also be done with another aim: to increase our understanding without bothering whether or not this understanding leads to improved action. I am convinced that this last kind of research can be quite valuable in the long run, but today the main focus is on research which tries to improve the effectiveness of extension work in the short run.

This research can be done in two ways:

1. It can try to make a certain extension campaign more effective, or
2. It can try to develop generalisations which can be used in planning extension programmes and to train extension agents.

In developing countries the resources to do extension research are limited, because of lack of skilled manpower and money. Therefore, often the second kind of research will deserve most attention. The first kind of research will have to be restricted to some campaigns which are of crucial importance for agricultural development.

In agriculture, we are convinced that it pays to invest over 1% of the gross sales in research. In agricultural extension many large investors, such as the World Bank, are not yet convinced that it also pays to invest 1% of the extension budget in research on extension. Probably a gradual raise in the research funds is desirable to train first capable researchers. With the limited possibilities we have to do research, it is important to focus this research on the most urgent problems in agricultural extension. We will have to examine today, how, we can make these decisions and which decisions we should make. I realise that some of these suggestions might be based on insufficient knowledge of the research which has been done already.

Decisions:

It is proposed to analyse which decisions have to be taken in agricultural extension and to discuss which of these can and should be improved by increased knowledge from research. A disadvantage of this approach is that the different decisions are often interrelated and these interrelationships do not become quite clear in this way.

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An alternative would have been to analyse what are the major problems of agricultural extension in developing countries, whether research can contribute to the solution of these problems and what kind of research would be needed for that purpose. The reason that I have not chosen this alternative is that it is rather subjective, although this kind of thinking will influence my discussion.

It is clear that there are problems in extension which will not be solved by research findings. Extension agents might be expected to support campaigns of politicians instead of teaching farmers improved farm practices. This will not change if research shows that it has an adverse effect on the confidence of the farmers in their extension agents.

I consider the following as the major decisions in agricultural extension :

1. Which *goals* is the extension service trying to achieve?
2. Which *target groups* does the service try to reach?
3. Which *content* does the service teach?
4. Which combination of extension *methods* does one use?
5. How is the extension work *organised*?
6. How can one *plan* an extension *programme* effectively?
7. Which system of *monitoring and evaluation* is used?
8. How information on the *impact* of extension work used to improve this work?

I will discuss briefly what kind of research might help to improve these decisions.

Goals :

Probably most decisions regarding goals of extension programmes are based on commonsense and politics rather than on research. One reason is that value judgements are always involved in these decisions, but research could help by indicating which consequences can be expected from different alternatives. This is done to some extent by systematic thinking about these alternatives (van den Ban and Hawkins), but empirical research is scarce partly because it is difficult, but perhaps also because not everybody likes it that his ideas are challenged by facts.

An important decision is — should extension agents tell their target groups what they should do or enable them to make their own choices? Research might show us in which situations extension agents and in which farmers have most of the relevant information to make these choices. If farmers are asked to make this choice themselves, but lack this information they can lose self-confidence, if they realize afterwards that they have made the wrong choice. We would also have to know more about the consequences of participation in rural development. Oakley (1987) has decreased confusion by analyzing the different meanings of 'participation'. Castillo (1983) has shown that this participation can be used by local leaders to serve their interests at the

expense of the interests of other villagers. It would be important to know whether and how this can be prevented.

The goals of the extension programme ought to be subgoals of the agricultural development programme, which uses together with extension also other policy instruments to achieve its goals. These different policy instruments should be well coordinated in order to reinforce each other. Can policy research improve this coordination process over what a capable policy maker can do?

Target Groups

On target groups a lot of research has been done, which shows that the old idea that extension is increasing income differences by helping mainly the more well to do farmers is often not correct (Lipton, 1985). This kind of research is important for the selection of the contact farmers. No extension agency is able to pay personal visits all farmers regularly. The solution is often to visit mainly the contact farmers in the expectation that they will pass on the extension advice to other farmers. The rules for the selection of the contact farmers usually include that they are able and willing to follow extension recommendations, which makes them rather atypical farmers. Unfortunately we know very little of the impact contact farmers have on other farmers. Probably this influence depends a lot on the culture and social structure of their society and on the visibility of the extension recommendations. It is not possible to generalise from a few case studies to the rest of the developing world, but at this moment is not well known which cultural factors influence their impact.

An alternative to contact farmers is to approach farmers as a group (Russell, 1986). In theory this sounds a good idea, but empirical research on the impact is quite scarce. We know that there are often feuds within a village. How can we prevent that they have an adverse effect on the result of this group approach?

In order to launch a more effective communication campaigns in marketing a lot of research is done to understand the target group better. Some of this kind of research is also done for extension programmes. The major question seems to be: How and how far can we generalize from the few studies which can be done?

Contents

A difficulty with many extension programmes has been that they were based on research findings, which should be disseminated to farmers according to the researchers and not on the information which is needed to solve the farmers problems. This is changing now under influence of the Farming Systems Research. Many farmers use more than half of their production to feed their own family. This implies that this Farming Systems Research should include research on human nutrition to know how we can improve the quality of the food that is available for the family.

Until now most extension programmes have been focusing on technical agriculture, plant nutrition and protection etc. The development of farmers' organisations is at least as important as the development of agriculture. It would be

useful to do more research on the factors which influence the success of farmers' organisations and cooperatives and on the training farmers and their leaders need to make these organisations successful. This again depends on the culture and the structure of the society, e.g., on the tendency of politicians to use successful organisations for political purposes.

Some topics of extension become increasingly important for agricultural development :

1. *Integrated pest management* : The adverse effects pesticides can have in peasant agriculture are well known. Their use can be greatly reduced through integrated pest management. This requires, however, well trained farmers and extension agents. Studies how this training can be organised effectively on a national scale would be most welcome.

2. *Irrigation* : The acreage of irrigated agriculture is increasing rapidly, but many irrigation projects are not very successful. They could become more successful, if farmers learned how to use the irrigation water effectively, conflicts on the distribution of irrigation water could be solved and farmers' organisations took over some of the roles of the government in the maintenance of the irrigation system and the control on the proper use of the irrigation water. Here again case studies could help on the role extension education can play in solving this problem.

3. *Soil erosion control* : In many countries soil erosion is endangering the future of agriculture. Conflicts of interests between various groups in the population and conflicts between short term and long term goals cause serious difficulties in preventing soil erosion. Extension is often expected to solve these problems, but it is not known how extension can perform this role effectively. Case studies could help to discover solutions.

Methods :

We have to make decisions on the choice of extension methods and on the way in which we will use these methods. For both kinds of decisions our knowledge is rather limited, partly because we do not know how far we can generalize from research done in industrialised countries.

Research in media saturated industrialised societies shows that mass media have only a limited effect on behaviour, but does this also hold true in media hungry developing countries? What is the difference in impact in a country like Thailand with over 500 commercial radio stations and a country of the same size with only a few government controlled radio stations like Turkey? Research on these problems is not easy, but could be valuable for our decision making.

Westerners often recommend to use in developing countries a more non-directive approach than extension agents from these countries themselves are inclined to use (Warner and Bower, 1982). Also farmers there are often asking for directive

advise. I am not aware of empirical research which proofs that our recommendations are correct, although on theoretical grounds I do still make them (van den Ban, 1987).

Probably audio-visual aids and media can play a very important role in agricultural extension in developing countries. One reason is the rapid development of video technology. However, people with a low level of education often have difficulties to interpret these media correctly. Unfortunately there is very little research which helps us to make a proper use of these media.

Organisation:

In many countries, I have visited, I would have been glad, if, agricultural extension and its linkage with research was organised more effectively. This is, however, a sensitive area, where critique from foreigners or even from the national universities is often not appreciated. This limits the impact research can have on improving this organisation.

For helping to improve extension organisation it is important to have a good understanding of the reward system. If people in the organisation do not do what they are supposed to do, this is probably because they are not rewarded to do so. If a researcher does not do the research which is needed to develop extension recommendations this is probably because he is rewarded to do a different kind of research.

In many countries the cooperation between different agencies involved in agricultural development is weak. To find ways to improve this cooperation it is important to have a good understanding of the reward system. Such an understanding can also help to develop ways to improve the support the field level extension agents receives from the district or national level in their organisation.

In most developing countries the linkage between extension and agricultural research is weak, especially the willingness of the researchers to learn through extension agents from farmers. A careful analysis of how this linkage operates can help to improve it. However, information from research will have hardly any impact on some organisational structures influencing extension-research linkage. If this research on this linkage would show e.g. that the research programmes in the agricultural faculties cannot be influenced by the Ministry of Agriculture, because these faculties belong to the Ministry of Education, one cannot expect that this information will change this structure. This weak linkage between research and extension is one of the reasons why village extension agents often feel that they do not get enough support from their organisation to be able to do what they are expected to do. This as well as lack of administrative support, e.g. paying travel allowances without a long delay, decreases their motivation to work hard in the interest of the farmers. A study how these kind of factors influence the motivation of the extension agents can be useful.

In industrialised countries the leadership style in organisations has become less authoritarian during the past 50 years. We believe that such a development is also desirable for extension organizations in developing countries, but where is the evidence that we are correct? This leadership style should be related to the directiveness in the relationship between the extension agents and the farmer. For technical messages a more directive approach is usually desirable than for messages on farm management or on organisation of farmers. A crucial factor is here probably: To what extent are field level extension agents capable and motivated to make decisions which promote the agricultural development of their area? This is influenced by their level of education. The optimal style of leadership is also influenced by the expectations extension staff has of the behaviour of their superiors (van den Ban and Hawkins). This depends on the culture of the country. For these three reasons the optimal style of leadership in a developing country will usually be different from an industrialised country. With the present level of research the choice of the leadership style in an extension organisation has only a weak base.

Programme Planning :

Nearly all textbooks on Extension Education have a chapter on programme planning (e.g. Green a.o., 1980), but the evidence that the recommendations they make results in more effective programmes is quite weak. The recommendations are much more based on thinking than on empirical research. It would be quite useful to have some case studies on the way extension programmes are actually planned or perhaps develop without much systematic planning, on how this planning is influenced by training courses in programme planning and what difficulties are experienced in trying to follow the recommendations from the training courses.

Evaluation and Monitoring :

We have to decide how much of the budget of the extension organisation will be used for evaluation and monitoring, who will do this evaluation and monitoring, using which methods and how the findings will be used to improve extension. Can research help us to make these decisions? Probably to some extent. Twenty five years ago Straus (1962) has made an excellent review of the literature to decide who should do what kind of evaluation. An updating of this review would be useful. In agricultural research a good deal of the progress is a result of developing better research methods and instruments e.g. electronic microscopes. In the social sciences we ought also to invest in improving our research methods, including the methods for evaluation and monitoring. It would also be useful to apply the methods used to study the utilisation of research findings on the utilisation of our own research.

Consequences :

Does agricultural extension have the desired consequences? In order to answer this question it is necessary to know which consequences it has. Useful research has been done e.g. by Evenson (1986) on the consequences of agricultural research and extension on economic growth. This shows that they often give a higher internal rate return than most other government investments. This does not show that it gives

higher rewards to politicians, who have to decide on these investments. Let us assume e.g. that a certain amount of money can either be invested in a new road in a district or in a training programme for extension agents in the whole country and that the last kind of investment gives a return which is five times higher than the first. Will it also give more votes the politician who makes this decision? I doubt, because the villagers will be quite well aware that this road improves their situation, but few farmers will realize that the training programme has this effect. We can also assume that extension stimulates the modernization of agriculture. A lot of research has been done on the consequences of this modernization (Lipton, 1985). This kind of research is useful if one tries to make rational decisions on the level of investment in agricultural extension and for the choice of target groups and contents.

Priorities :

It is clear from the foregoing paragraphs, I have mentioned more topics which I consider important for extension research than we can study with the available resources. Probably several of you will mention additional topics which are also important. We have to set priorities. These priorities will be different for the European Extension Centres, for Department of Extension Education at Universities in developing countries and for Ministries of Agriculture in these countries, because they have different needs, capabilities and possibilities to do research. Many governments will e.g. be hesitant to allow foreigners to analyse the reward system in their extension organisation. The priorities will also be different for different developing countries, because of their differences in bottlenecks to effective agricultural extension.

The following criteria should, in my opinion, influence priorities for extension research :

- a) The importance of the problem which is studied for increasing the effectiveness of extension work. In other words, if we can solve this problem will extension work be much more effective.
- b. The probability that research will help to find a solution for the problem.
- c. The probability that the research findings will be used to improve the decisions in the extension organisation.
- d. The impact the research will have on the felt need for extension research among extension administrators. Using these criteria I give priority for research to :
 1. An analysis of the linkaga between research and extension. This is often an important bottleneck in extension ; the probability that research finds ways to improve this linkage is rather high, as is the probability that the recommendations from this research will be accepted, except perhaps the recommendation to researchers to listen more to extension agents and farmers.
 2. The role contact farmers can play in the diffusion of research findings. This seems to be a serious bottleneck in the T and V System. With the large amounts of money invested in this system it is necessary to try to overcome this bottleneck.

3. The way in which extension can play an effective role in integrated pest management, irrigation management and soil erosion control. Among agricultural development administrators there is often a felt need for this kind of research and it seems that research can really contribute to the solution of their problems.

4. An analysis of the reward system for extension agents. It is of crucial importance that this reward system stimulates them to contribute as much as possible to the realisation of the extension programme.

5. The role extension can play in increasing the influence farmers have on decisions influencing their situation. This might increase the understanding social realities have on this kind of extension work and decrease the influence of Western ideologies.

It is expected that several of you would choose different priorities. It will be fruitful to discuss these differences of opinion. I certainly do not say that all other extension research topics are unimportant.

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