

## **The Challenge of Agricultural Extension in the 1980's**

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The destiny of the rural people in Low Income Countries will be influenced considerably by the way in which rural extension will fulfil its task in the next decade. This can even have considerable influence on the food supply for the urban population.

For the developed countries it will not be too difficult to produce or to buy enough food. But in the developing countries where now, according to estimates of the FAO, already 15% of the population is seriously undernourished, we expect a population increase of nearly 50% in the next two decades. Food production will have to increase more than that to abolish this undernourishment and because fortunately the level of living in a number of countries is increasing and therefore the demand for food will increase. The possibility to expand the acreage of land under cultivation is much smaller than in the past. Most of the increase in food production will have to come from an increase in yield per hectare. This cannot be realised without an effective extension service.

In discussing the task for the rural extension officers more in detail I will speak

about extension as an instrument of government policy, as a way to help rural people to make their decisions and as a way to increase the capabilities to manage their farms. Then I will raise the question whether extension should be a top down or a bottom up process and which resources are or can be made available for all these tasks. It is clear that the task of rural extension services will be different in different countries, because the situation is different and because the people have different goals and values. I will have to neglect most of these differences.

### **1. Extension as an instrument of government policy**

The agricultural and rural development policies have goals which the governments try to achieve with different instruments. One of these instruments is the extension service. The cost of this instrument are usually much less than the cost of a price policy or of land development projects such as irrigation. However, if the extension services are organized effectively, I do not believe that they contribute less to achievement of the goals of the

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government agricultural policy than many other instruments. Important goals are :

1. Increase in agricultural *production* to feed the growing population and to contribute to economic growth. In England wheat yields per hectare increased at a rate of about 4 kg a year from 1880 to 1950, since that time at a rate of 80 kg a year. In other Western European countries and in the U.S.A. and with other grains we see similar developments. There is little doubt that agricultural extension in combination with agricultural research and the agricultural schools have had a considerable impact on this tremendous increase in productivity. In developing countries grain yields are now rising at a rate of about 13 kg per hectare per year. That is about three times as rapid as before the war in Europe, but there is still considerable scope for improvement. This rapid increase in the productivity of agriculture in Western Europe and the U.S.A. is one of the reasons for the decreasing imports of agricultural products in these countries. Their surpluses are an important problem for agricultural policy, which make some people wonder whether it is useful to stimulate the increase in agricultural productivity through agricultural extension. The need to increase productivity is most serious in several African countries, where in the past decade agricultural production per capita has decreased seriously.

Through his book 'Getting agriculture moving' Mosher has convinced me that agricultural extension can contribute to this increase in productivity only if agricultural research findings are available which have been well tested in the local situation,

if the prices and the land tenure situation make it profitable for the farmers to use these findings and the necessary supplies are available locally.

2. Increase in *farm incomes* should be a goal of government policies, because otherwise one cannot expect that the farmers are interested to cooperate with the government to increase food production. Also governments see it as their task to fight poverty and the majority of the poor people can be found among the farmers and other rural people, although they might be less visible and vocal than the poor people in the cities.

One can try to achieve such an increase in income by an increase in the productivity on the farms. In Europe a difficulty is that this might increase the agricultural surpluses.

3. In the Netherlands many people know that it would be good for the developing countries if the *income differences* in these countries would become smaller. We do not like to talk so much about the growing income difference between the Netherland and many developing countries.

For the welfare of the people and probably also for the political stability of the country it would be important that the income of poor people in developing countries increases. One can try to achieve this by an increase in the productivity and the income of all people or by a decrease in the income difference. This last way might result in more resistance from the powerful groups in the society, especially if their

income would decrease. In the Netherlands we have seen a steady decrease in the income differences for the past century. There has not been much active resistance against this process, partly because it could be achieved without much decrease in income for the former high income groups.

Are there possibilities for rural extension services to contribute to a decrease in income differences? There is no doubt that there are cases where these services have contributed to an increase in income differences, because the more well to-do and better educated farmers are more interested or better able to adopt new farm practices or to use cheap credit and other government services. There have even been cases where the mechanization of the larger farms has pushed small tenants out of agriculture into poverty. There are also cases where innovations which increase the yield per hectare, have been adopted just as rapidly by the small farmers as by the big farmers. In India and a few other countries there are special programmes to help these small farmers.

In the Netherlands we have seen in the past generation that many small farmers have profited more than the bigger farmers from new opportunities in horticulture and animal husbandry, which were created by increase in the average income of the people and therefore an increase in the demand for these expensive products. One may wonder whether a similar development is possible in developing countries near their rapidly growing big cities.

It is no exception for women and

especially widows to be in the group which is most in need of help. If we like to help this group we could wonder whether it would not be necessary to appoint more female extension officers. There are not yet many countries like Papua New Guinea, that in its advertisements for extension officers ask especially for women. These women also deserve our attention, because of the important role they often play in food production, especially in Africa.

4. As a last goal of government policy in agriculture I will mention the increase or maintenance of *employment* in agriculture. This is often necessary because of the population increase and the lack of employment outside agriculture. In addition, in many countries one worries about the consequences of the rapid growth of the cities.

We see in all countries that an increase in the per capita income is correlated to a decrease in the proportion of the labour force working in agriculture. The decrease of the number of people working in agriculture has often been stimulated by the agricultural extension services. This will contribute to economic development in a situation of full employment. In a country with a high level of unemployment, however, this will increase the number of unemployed workers.

In many developing countries it is difficult for people leaving agriculture to find a job elsewhere. At the same time there are forces pushing people out of agriculture, such as rural-urban income differences, the hard work a farmer has to

do and the glossy picture of urban life given by the movies and other mass media. Can the rural extension services do something to decrease these forces ?

5. In my view the extension service has also an important task in *communicating* information on the situation of the rural people to *policy makers*. Good extension officers are better informed about this situation, the problems these people face, their reactions to different government policies than any other government officer. This information is essential for policy making and for research planning. We all know that these policies are sometimes based on incorrect information about the rural people and their situation and the research is too often insufficiently geared to the problems rural people face and the resources they have. Therefore the civil servants involved in making policies for rural development and the research planners should be an important target group for the extension services.

## 2. Help in decision making

Rural extension can be viewed also as a way to help rural people to make their decisions in a rational way. This way of decision making implies that the people see the alternatives available to them, gather as good information as possible from research and from practical experience on the consequences of these alternatives and compare these consequences with their goals and values. These goals and values can be different from my goals and values. In that case it will be rational for them to take

other decisions than I would have done, had I been in their place.

In the next decade many rural people will face more difficult decisions than in the past. In the first place new innovations become available for them from research. Experience in the past has taught that some of these innovations can be quite profitable for them, but others are not because they involve too much risk or are not well suited to the resources available to many farmers. It is the traditional task of the agricultural extension services to help farmers with this kind of decisions. For the Dutch extension service the experience of our farmers is at least as important as a source of information on the value of innovations as the research findings are. Here we have about one agricultural research worker for every 100 farmers. In countries where agricultural research is less developed the experience of the farmers will be a more important source of information for the extension officers.

Modern agriculture does not only depend on innovations, but also on institutional development. You see in developed countries all kinds of farmers organizations, cooperatives, credit, supply and marketing services which are very important for the development of agriculture. They enable farmers to modernize by giving them access to supplies at fair prices, by providing information and by marketing their products all over the world. These organizations are also important to influence the government to take into account the interests of the farmers in the decisions they take with regard to prices, taxes and all kinds of

regulations. In Europe and the United States the extension service can take the existence of all these farmers organizations for granted and concentrate on the dissemination of information on technical innovations. I am afraid that in developing countries one has too often copied this system without taking into account the difference in the situation. There cannot be any doubt that the institutional development is quite important for the modernization of agriculture in these countries. I have also no doubt that it is in the interest of the farmers that they have a considerable influence on the credit, supply and marketing institutions, on organizations for the maintenance of irrigation systems and on the government policies through their own organizations. Therefore, one can claim that it should be an important task of the extension service to teach the farmers to participate effectively in these organizations and to help them to make decision which organization they should start and how they should run these organizations. There are, however, some difficulties involved in this view.

In the first place it requires a kind of expertise that differs considerably from the one gained in the dissemination of technical innovations. Research findings on the best way to run these organizations are scarce. One will have to discover this way together with the rural people utilising and analysing their experience.

In the second place this help with collective decision making can increase the power the rural people have in their relations with other groups in the society.

These other groups will not always like this and they might have a considerable influence on the government. This can bring the extension service and the extension officers in difficult conflicts.

In the third place there might also be conflicts of interest between different groups of rural people e.g. moneylenders and small farmers. How do the extension officers handle these conflicts ?

Because of these difficulties one might say that the extension service should restrict itself to its traditional role with regard to technical innovations. If the consequence would be that no organization takes the responsibility for the institutional development in the rural areas this can have serious drawbacks for the possibilities of rural development. Experience has made it quite clear that these organizations do not work by order of the government. The farmers themselves will have to learn how to run organizations which serve their interests. It can be an important educational task of an extension service to teach this, although vocational agricultural schools and other organizations might also contribute to this educational process.

The ideas that the extension service is an instrument of government agricultural policy and that it is a way to help farmers in their decision making are not in disagreement with each other. Some of the goals of government policy can be reached if the farmers make better decisions, which are in their own interest as they see this themselves. If this is not the case the government should use other policy instru-

ments to reach their goals, e.g. price policy or regulations. A difficulty is that some governments expect their extension officers to achieve changes, which are not in the interest of the farmers. The reaction of the farmers will usually be that they use their freedom not to follow the recommendations of these extension officers and that they lose the confidence in the extension service. In this way these governments bring their extension officers in quite a difficult position, which they sometimes solve by reporting that they do something different as they do in fact.

### 3. Management development

The extension service can also be viewed as an education organization, which main task is to develop more effective farm managers. This is an important point of view, because of the large differences in income among farmers with similar resources. If one takes this view on the role of the extension service one should first ask what are the differences between the more effective and the less effective managers and secondly how can the extension service develop more effective managers.

Probably differences in management capabilities at three levels are important. There is first the level of the production-technique. By carefully observing how their crops and animals are growing and what they can do to influence these production processes, farmers can often increase their yields considerably. At the more advanced level of agricultural development these kinds of observations become more important. The integrated pest control for instance

requires that the farmer is well able to recognize the different kinds of pests and is able to judge whether the infestation is so serious that control measures are profitable.

The second level is that of the farm enterprise. Which crops to grow and animal to raise, whether one should hire labourers or use machinery, etc. This level requires that the farmer is able to make economic calculations on his enterprise and can make decisions taking into account the uncertainties with regard to price and weather.

The third level deals with the relations of the farm with the outside world. For the transition from subsistence farming to commercial farming this is quite an important level. The farmer has to make decisions or how to buy supplies and how to market his products, to what extent and in which way he should cooperate with other farmers and what kind of relationships he should have with government officials. The discussion of the need for institutional development is related to these problems.

The research on the adoption and diffusion of innovations has given us quite a bit of information on the way in which extension officers can help farmers with technical innovations. There is not a similar research tradition on the way we can help farmers to develop their management capabilities. This kind of research is urgently needed. For this help we can counsel the farmers on the specific decisions they make. In addition, courses can play an important role in this management development

process. To what extent should these courses be given by the extension officers, to what extent by the vocational agricultural teachers. In the Netherlands the majority of the farmers have visited a vocational agricultural schools on course. There is no doubt that this whole system of vocational agricultural education has had a considerable impact on the managerial capabilities of our farmers.

#### 4. Top down or bottom up

Should rural extension be a top down or a bottom up process? Should the educated people and the high level government officials tell the rural people what is good for them and for their society? Or should the rural people themselves say what their problems are, ask for help from the extension officers to find solutions for these problems and then decide what the best solution is? In my view we should not choose dogmatically for either top down or bottom up. The extension officers are trained to observe problems often before the rural people see these problems themselves. Soil erosion is a clear example. The extension officer should also know ways to increase farm income of which the farmers are unaware.

On the other hand the main resource which is underutilised in many developing countries is in my opinion the intelligence of the rural people. Although they might not have a high level of education, quite a number of them are intelligent. Their experience and their knowledge of their own situation is indispensable for rural development. They have learned that not all civil

servants are only trying to serve their interests, to put it mildly. Therefore only if they can influence the development process themselves they can be expected to cooperate in this process. Without their cooperation this process will not be very successful. This is one of the reasons why it is important to organize the rural people effectively.

My conclusion is that the development process should be more of a bottom up process than it now is in many countries, but that at the same time the experts of trained civil servants should be used effectively.

#### 5. Resources

Our conclusion can be that the extension services will have more difficult tasks in the time ahead as they had in the past. You will wonder whether you will get the resources to fulfil these tasks. We cannot deny that this will be a problem in many countries. In a time of rapid economic growth the government expenditure could grow as well, but in many countries the national income is no longer growing. One reason is that often the government expenditure has been growing too rapidly.

In a number of countries I wonder whether one does not rely too much on the government and not enough on private enterprise in attempts to stimulate economic growth. My impression is that in a number of countries the seeds, pesticides and fertilizers, which are now distributed by the extension service, could be distributed more effectively by private business.

In a time of decreasing economic growth it might be a good idea to concentrate government expenditure more on productive investments. This will increase the tax base and therefore the possibilities for other government expenditure in the future. Research has shown very clearly that investments in agricultural research give a very high rate of return, often up to 40%. The evidence on the productivity of investments in agricultural extension is not as hard, but I am convinced that an effective extension service can also give a high rate of return. I am not convinced, however that the agricultural extension services in all countries are equally effective.

In a time of decreasing resources and increasing tasks for the extension service the quality of the service becomes more important. We can no longer waste money on avoidable inefficiencies. The efficiency of the extension service depends to a large extent on the quality of the staff and the quality of the management.

Mosher has criticised the training of extension officers in a number of countries, because one gives too much attention on how to teach and not enough on what to teach. At the same time there are other countries where the extension officers have learned what to teach but not how to teach and how to organize an extension service. In order to be able to walk an extension officer needs two legs ; what to teach and how to teach.

Previously we have thought that a main problem for agricultural extension is the

resistance to change among the farmers. A more careful analysis has shown, however, that many farmers are quite willing to change if we come with innovations which are adapted to their situation and in agreement with their goals and their culture. A more serious bottleneck is often the management of the extension service. Not always do the extension officers get the support they need to be able to work effectively. I am not only thinking of material support, but in the first place of help in developing a message and a method which helps the farmers to solve their problems. Also it might be difficult for the extension officers to gain the confidence of the farmers, because they are transferred too frequently, they are expected to do too much paper work or they have also tasks which are conflicting with their educational task. They might be expected to collect credit given to the farmers or to inspect whether certain government regulations are properly executed.

An important task of the management of the extension service is to take care that clear decisions are taken with regards to the goals of the extension service and with regards to the target groups this service tries to reach. Without these decisions it is not clear for the extension officers what they are expected to do and which measures should be taken to enable the service to reach these goals and these target groups. I do not say that these decisions should be taken by the management, because I believe that often other extension officers and the rural people themselves can make important contributions to this decision making.

**Summary**

This paper raises a number of problems that agricultural extension services will have to solve in the next decade. Extension educators should try to find effective ways to solve these problems. The extension services will have to contribute to a considerable increase in the productivity of agriculture and in the capabilities of farmers to solve their own problems. This increase is required in the first place among the poor farmers, who have so far not been reached well by the extension services. Agricultural development requires that they organize themselves in different kinds of farmers organizations and cooperatives.