Towards a participatory and demand-driven Training and Visit (T & V) agricultural extension system: A case of Tanzania

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Abstract

Tanzania uses the T & V system of agricultural extension. At this moment this is a rather top-down system for the transfer of technologies, but the Ministry is convinced that the extension system would become more effective if it was more participatory and demand-driven. The Village Extension Officers are taught impact points, which they are expected to pass on to the farmers. However, most farmers do not follow these recommendations, often because in formulating these recommendations one has not given enough attention to the limited possibilities many farmers have to make investments. With the large diversity among the farmers in income, access to markets and agro-ecological situation blanket recommendations cannot work. Farmers need information that helps them to make better decisions themselves adjusted to their goals and their situation. This can only be realised with a decentralised system of decision- making in the extension service and a participatory system of supervision and in-service training. Discussed are difficulties involved in realising such a major change in the extension approach. It takes time, training and a systematic strategy of organisational change to overcome these difficulties.
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Introduction

The Training and Visit (T & V) extension system has been introduced in Tanzania since 1987 with support of the World Bank after it was used earlier on a small scale in some donor funded projects. This was a Transfer of Technology system in which "all impact points disseminated to the farming community should ideally originate from research" (Mannento, 1990: 5). The Ministry of Agriculture has decided recently to continue to use this system all over the country as experience has taught that it is more effective than the systems used previously and no clear alternative is available that can be used nation wide. However, the Ministry is also convinced that it is desirable to apply this system in a more participatory, demand-driven and less top-down way as has been done so far in order to make extension as effective as possible. The question is how can this change be realised? This question was a major focus of a recent study on "Assessment of the effectiveness of agricultural extension services in Tanzania (mainland)" conducted in 1996 by an Assessment Team appointed by the Tanzanian Ministry of Agriculture and Cooperatives. We discuss the conclusions from this study in this article, because the answer to this question is not only important for Tanzania, but also for other countries where the T & V system is used.

For this assessment 768 farmers (628 men and 140 women), of whom 350 were contact farmers, and 45 Village Extension Officers (VEOs) were interviewed in six of the twenty regions of the country. The farmers were selected at random among contact and non-contact farmers in randomly selected villages in purposely selected districts and regions, which are representative for

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the major agro-ecological zones. In the T & V System contact farmers are farmers who are visited at regular intervals by the VEOs.

In theory extension workers in the T & V system "while spending almost all of their time in the field meeting farmers, ….. must attempt to understand farmers' production conditions and constraints in order that appropriate recommendations are formulated: this can only be done if extension workers listen at least as much as they talk" (Benor and Baxter, 1984: 11). In reality the experience in many countries is that it is a top-down system in which researchers and higher level extension officers decide on the impact points, which the VEOs are expected to pass on to their farmers and farmers who have few opportunities to participate in the extension programme. Sicilima (1996) showed that this is also the way in which it is done at present in Tanzania. The T & V system was designed for a situation in which the VEOs have a low level of education and are not expected to make their own decisions on what to teach. In Tanzania, however, VEOs have a rather high level of education. In our sample 64% have a certificate, which implies 10 years of general education and two years at an agricultural training institute; 27% have been to school for two more years to receive a diploma. This makes it possible in Tanzania to use a different extension approach than for instance in Benin, where many VEOs have been about five years less in school.

Already before the introduction of T & V, a study by Keregoro (1988: 52) concluded "that in most cases extension workers dominate by telling farmers what to do while farmers in turn have tended to be passive listeners and reactive objects". This shows that using a top-down approach is more a continuation of an old tradition than a result of the introduction of T & V.

Present interaction between farmers and extension officers

Confidence in VEO

The confidence farmers have in their VEOs is crucial for successful extension work. Therefore, the T & V system tries to increase their A VEO can only give good advice to a farmer if he understands his problems and possibilities. Of the competence. We asked the contact farmers for their opinion the level of competence of their VEO in nine different fields. Their overall rating is rather high: 20% quite competent, 58% competent, 16% average competent and only 5% not competent. This rating is about equally high for impact points, choice of varieties, optimum use of fertilisers, agronomic practices and plant protection. It is somewhat lower for investment decisions, animal health and animal breeding and lowest for animal feeding.

Until recently there were separate agents for crop production and animal husbandry in Tanzania because historically the two represented separate ministries. However, in 1986 a decision was made to merge the Ministry of Livestock Development with the Ministry of Agriculture to form the Ministry of Agriculture and Livestock Development and later the Ministry of Agriculture and Cooperatives. In fact one of the objectives of the National Agriculture and Livestock Extension Rehabilitation Project, which introduced the T & V System, was to merge the crop and livestock extension services in one delivery system, a task which has been accomplished. However, the number of crop agents is greater than the number of livestock agents. In the T & V system the agents are being retrained to become generalists. This explains that at the moment their level of competence in animal husbandry is still relatively low.

It is also important that the farmers are convinced that their VEO tries to serve their interest by advising them. A problem is that as government officers they might also be expected to implement government policies that are not necessarily in the interest of the farmers. Of the contact farmers 53% said that if their VEO tells them something this is because he likes to help them to solve a problem, 14% because he obeys orders from his boss and 33% for both reasons. On the next question why the boss gives this order 37% answered because he thinks that this in the best interest of the farmers and 63% to realise government policy. These answers do not show a very serious distrust of the farmers in their VEO.

contact farmers 67% says that their VEO understands this very much, 21% quite much, 12% much and only one out of 350 answered "never".

These data give a favourable picture of the confidence Tanzanian farmers have in their VEO. It is possible that these data are somewhat coloured by the desire of farmers to give an answer that pleases the interviewer. Interviewers were staff members of the Ministry of Agriculture, who did not belong to extension service. It is our impression that this is not a major factor. More important is probably that the VEO lives in an other village than the one where he/she was born. Usually he/she cultivates a field there to supplement his/her low salary. If he/she did not try to help his/her farmers as well as possible, he would become very lonely; for instance, he would not be invited to drink local beer with other villagers. 17% of the farmers interviewed were illiterate and only 13% had followed more than primary school education. The big difference in education levels between the VEO and the farmers gives the former more possibilities and confidence to help the farmers in his/her village.

Reaction to recommendations

Of the farmers interviewed 68% use fertilisers, but only 20% use the rate their VEO recommends; and 35% use improved seeds. The reasons given by farmers for not using seeds and fertilisers or for not using them at the recommended rate are for 60% that they do not have the money needed to do so, for about 15% that these inputs are not available in or near their village, only 10% think that it is not profitable to follow these recommendations and 5% think it is too risky. These findings are similar to those reported by Farmers not only differ in level of competence and in access to capital, but also in the quality of their land, access to labour and markets for products and in their goals, for example, their willingness to take a risk. With the poor transport situation it is no exception that in a remote village the price of the farm products is only one third of what it is near the main roads. Prices of fertilisers are much higher in these villages too, if they are available at all. This makes it necessary to adjust production technologies to the market situation. Ravnborg points out that farmers do not and should not take decisions on which crops to grow and how to grow these crops early in the season, but wait until the moment they have access to the information which is relevant for making this decision. In much of Tanzania rainfall is uncertain. So the farmer should not make the decision when to plant and how much fertilisers to give until he knows how much rain there is so far this season. Researchers may discover that in this area and in an average year beans give the highest average yield when they are planted on January 15, but the farmer is growing beans this year, not in an imaginary "average" year.

This implies that the farmer is not in need of a recommendation what the average farmer should

Ravnborg (1996) in an in depth study of the adoption of extension recommendations in four villages in Iringa which showed that farmers seldom exactly follow recommendations. They use the information from their VEO to integrate it with information from other sources, including their own experience, in order to make up their own minds to do what is best in their situation. Ravnborg emphasises, rightly in our opinion, that in this way farmers often make better decisions than they would do by following standardised extension recommendations.

VEOs are expected to transfer the same recommendations to all farmers, but there is a lot of variation among farmers. There are large differences in income between farmers. In a Baseline Survey for the Southern Highlands Extension and Rural Financial Services Project one calculated the value of the production on a sample of farms. This was used to divide the farmers in four income groups. The average production value of the 6% of the farmers in the high income group was 47 times this value of the 28% farmers in the low income group. Ravnborg found that the maize yield per ha of the wealthiest farmers was 2.5 times that of the least wealthy category and the differences in yield per worker were even larger. This causes a large difference in the access to capital which can be used for buying inputs. In Africa, farm families with a high level of farm income usually have also a high level of non-farm income (Reardon, 1997). An interesting discussion of the diversity among farm families in resources and priorities is provided by Chambers (1997: Ch.8).

do in an average year. He is certainly not in need of recommendations what a resource rich farmer should do, as most recommendations are at this moment, because most Tanzanian farmers are resource poor. In other words, whereas often research is aiming at high yields per ha, farmers might be interested in the highest yield per shilling invested or per man day in a busy period, because these are for him scarcer resources than land. The farmer should decide what is the best way to achieve his/her goals in his/her current situation. We got the impression that many VEOs realise this, but their organisation expects and trains them to give the same blanket recommendations to all farmers. To Ravnborg (1996:113) they "expressed great dissatisfaction with the AKIS (Agricultural Knowledge and Information System) design and their roles as conveyors of technologies that all too often do not fit farmers' circumstances".

The discussion above is confirmed by a study of Aarnink and Kingma (1991) among female farmers in Shinyanga region. These farmers have often good reasons not to follow the extension recommendations and not only because they lack the money needed to do so. Most recommendations require more labour than the local practices, but many families cannot provide the right amount of labour at the right moment.

In the Assessment Survey a bit more than half of the VEOs reported that they give all their farmers the same advice and only 9% that they adjust this advice always to the situation of the farmer. Of the VEOs 86% say that during their visits to contact farmers they talk both about the impact points and the questions of farmers, 9% mainly about impact points, the recommendations stressed in the T & V System, and 5% mainly about the questions of the farmers. In this regard the perception of the contact farmers themselves have is a bit different; 56% say that the VEO talks about their questions as well as about what he/she considers useful for the farmer, 24% only or mainly about what he/she considers useful and 19% mainly or only about the questions of the farmers. This is influenced by the kind of training that the VEOs receive. Of the VEOs 36% say that this only and 29% mainly about points decided by trainers. This training gives only limited attention to the problems VEOs experience in their work. A result is that 42% of the VEOs say that the contents of the training are already mostly or completely known to them.

Desired interaction between farmers and extension officers

We can conclude that farmers do not need blanket recommendations, which all farmers should follow, but guidance to help them to make better decisions themselves. To be able to do so they should be informed about the options for production technologies and for farming systems between which they have to make a choice and about the consequences that they can expect when choosing one of these options. Information about these consequences comes from different sources: research, experiences of farmers who have tried one or more options in a similar situation, such as the farmer who has to make the choice and gain information about the actual situation on his own farm, for example, information from his accounts about the amount of money he can invest for buying inputs. This may require also a reorientation in the agricultural research system from developing recommendations to providing a basket of opportunities for farmers and information on the consequences they can expect of each of these opportunities in their situation (Compton, 1997).

An approach towards farm management extension, which takes into account the diversity among farm families, has been developed in francophone African countries (Faure, Kleene et Ouedraogo, 1996). By teaching farmers improved methods of problem-solving many more solutions for their problems can be generated than by teaching them new production technologies, as is often done in T & V extension. Solutions developed with the help of farm management extension can take into account the diversity in resources and goals among the farm families. Tanzania is already moving in this direction. One of the reasons that this is possible is the recent strengthening of Farming Systems Research.

Pretty (1995) has shown that location specific solutions for farmers' problems are also necessary to develop sustainable farming systems and that participation of farmers is required to discover these solutions.

A problem is that at present the VEO does not get the support that he/she needs to be able to provide this kind of guidance. To pass the exams at the Training Institute he/she had to repeat what his/her teacher had said and case studies were seldom used to give him/her the opportunity to find a new solution for an actual farm problem. Also at the Monthly Training Sessions of the T and V system he/she is taught impact points, which he/she should pass on to the farmers. He/she is taught seldom an improved problem-solving methodology to analyze farm situations and problems together with farmers, to discover new options to solve these problems and to predict the consequences of these options in the actual situation as well as possible. The research institutes do not have the manpower and other resources to do research in all situations. Much of the extension advice will have to be based on farmers' experience, but this is seldom done. This would require a system of horizontal communication in which VEOs try to learn this experience from their farmers and pass this information on to their colleagues. Such a system of learning and communication has not yet been developed (Benad and Lupanga, 1991).

Difficulties in realising a more participatory and demand-driven extension system

The discussion above shows in our opinion that intelligent farmers quite often do not follow blanket recommendations on impact points. They would profit much more from information and experiences that enable them to make better decisions themselves. Decisions that suit their situation and help them to realise their goals. This would require a decentralisation of decision-making in the extension organisation. The VEO is in a much better position to decide together with farmers which kind of information and support farmers need from him/her to be able to make better decisions than the superiors of his/her

3. A participatory relationship between VEOs and their farmers requires a participatory style of leadership in the extension organisation. It becomes a major task of the extension supervisors to increase the problem-solving ability of the VEOs through on the job training. The supervisors are not trained in this style of leadership. For the VEOs, who were always expected to obey orders, this change is also difficult and they will feel uncertain as to whether they are able to perform their new role properly.
4. It is no longer possible to evaluate VEOs on basis of the adoption of recommendations in their villages. The satisfaction of the farmers with the support they get for improved

superiors. VEOs are not able to provide this kind of help to their farmers, if decisions on the content, frequency and methodology of their own training are made in a top-down way by researchers and higher level extension officers. They are only able to work with their farmers in a participatory and demand-driven way, if their own training and supervision are also conducted in a participatory and demand-driven way. The extension managers and the subject-matter specialists should not see it as their task to order VEOs what they should tell their farmers, because they lack much of the location-specific knowledge that is needed to make such a decision. Rather they should aim at increasing the competence of the VEO to decide for him/herself what should be told to each farmer.

However, such a change in the extension organisation is difficult to realise. Difficulties include:

1. A more participatory approach requires a higher level of competence of extension officers at all levels in the organisation. It is easier for a VEO to tell all his/her farmers that they should use 120 kg N per ha of maize, than to discuss with the farmers what the optimal level of fertiliser use is in their situation. Also the management of an extension organisation that uses the same system all over the country is much easier than that of an organisation where, for example, frequency of farm visits and of training are adjusted to the needs of the local situation.
2. A participatory relationship between VEOs and their farmers requires a participatory kind of in-service training. For the trainers it is much more difficult to find solutions for the problems that VEOs experience in their work together with them, rather than to pass on the impact points received from the researchers. The VEOs will become much more responsible for their own learning and are no longer passive listeners to the trainers. However, this change in role is not easy for the VEOs.

decision-making becomes more important (Aarnink and Kingma, 1991). However, this is more difficult to measure.

5. The Assessment Study revealed that the VEOs were on average responsible for supporting 570 farm families. Since that moment this number has risen by about 50%, because budget problems and IMF policy forced the Tanzanian government to retrench government officers, including VEOs. We may argue that there is so much variation among farm families that each of them needs advice geared to its own situation and goals, but the VEOs lack the time to do so. A participatory approach requires more time from the extension agents than a top-down approach. It is not clear how this can be realised with a smaller number of extension agents. Partly they will have to work with groups of farmers, who are in a rather similar situation, but not many of these groups already exist. Partly they can work through opinion leaders (contact farmers?), who through their discussions and their example influence other farmers, but it is likely that there are differences in the situation and the goals of the leaders and the farmers who are expected to follow them. Perhaps it is only possible to use the more participatory and demand-driven approach to extension only in a selected number of villages. This is also the way in which this is done by several NGOs, which work in a more participatory way than the government extension service, but are not able to do so nation wide.
6. Tanzanian farmers have been taught effectively that it is nice to obtain subsidised inputs from the government, but many of them do not yet realise that in the long run information which helps them to increase their productivity is more valuable. This makes it difficult to realise a demand-driven extension system. If the extension service can introduce new technologies or farming systems, which are really profitable for farmers, their interest in new information will increase.

The implications in realising such an approach

These difficulties imply that it is not realistic to expect that the Tanzanian extension service can change towards a participatory and demand-driven extension system overnight. One will have to develop a strategy to gradually change the system over a period of years. Such a strategy should include:

1. An analysis by the extension officers at all levels to establish the extent to which farmers follow extension recommendations and of the reasons why they do not follow them.
2. A discussion between extension officers at various levels in the organisation and farmers' representatives of possible ways to increase help to farmers towards making decisions through which they can realise their goals, taking into account the resources that they have.
3. A discussion between extension officers and researchers on how the VEOs can be provided with the information and skills that they need to perform this new role.
4. A training of extension officers at all levels in the organisation to increase their problem solving ability.
5. A training of extension managers in a more participatory style of leadership.
6. A system of rewards for extension officers at all levels who realise a more participatory and demand-driven approach to extension and who help their colleagues to do the same.

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