

COMMENTS

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Meshing knowledge systems and stimulating farmer-innovation in soil erosion control.

By C.U. Okoye. *The Journal of Agricultural Education and Extension* (1998, 5, 2, pp 111-121).

One of the strengths of Okoye's article is that he shows clearly that extension agents should integrate knowledge from research with knowledge from farmers' experience. However, he does not tell us how this integration can be realised. There is no reason to blame him for this omission, because also other authors are not clear on this point. His article has stimulated me to think about this issue. Let me share my thinking with the readers, because I believe that I can make one step forward, although not enough to reach the goal: giving suggestions on what is the best way to realise this integration. Hopefully other readers will set the next step.

To find the best way for this integration it is desirable to first analyse why it is necessary to integrate knowledge from agricultural research and from the experience of farmers and from other extension agents. For me there are four main reasons:

1. In order to help farmers make their decisions as good as possible we should utilise all available intelligence. Farmers and their family members have more intelligence than agricultural researchers and extension agents have, because they are much larger in number. Perhaps on the average researchers and extension agents are a bit more intelligent than farmers. In one study I have given an intelligence test to farmers from three Dutch villages (van den Ban, 1965) and later I gave the same test to students of Wageningen Agricultural University. Although it was a test on which people

who read a lot score higher than people who read little, in all villages some farmers scored higher than the average of the students. Also in Africa there are farmers, who could not get the education needed to become a researcher or an extension agent not because they lacked the necessary intelligence but because of the socio-economic background in which they were raised. These are often the farmers, who through their experience and as a formal or informal leader can contribute a lot to the development of agriculture in their community. Their contribution should be fully utilised.

2. There is a lot of variation among farmers in the agro-ecological and socio-economic situation in which they live. They should make decisions which are adjusted to the needs of their own situation and to their goals. With more than 1000 farmers per extension agent and more than 15 000 farmers per agricultural researcher in most African countries this can only be done by the farmers themselves (van den Ban, 1997).
3. In all countries differences in managerial abilities cause large differences in income. On family farms in the Netherlands a difference in income of 100 000 Euro a year is no exception at all. That makes it interesting to learn from the most successful farmers. When participants in an international extension course asked a Dutch dairy extension agent where he gets his knowledge from, he answered: "Mainly from farmers. In

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this area we have some farmers who are quite good in animal breeding, others in animal nutrition, grass and fodder production, or in labour management or in mechanisation. I learn from them how they manage their enterprise and teach that to other farmers, so we get excellent dairy farmers in my area".

4. One of the major roles of agricultural extension agents is to improve the communication and cooperation between farmers and agricultural scientists. They can only do this successfully when they understand the way of thinking of both groups, but these two ways of thinking are usually different (Darre, 1996). During their training extension agents have learned to understand the way of thinking of the scientists, but often not of the farmers. They may have learned this from their parents or from other farmers. Let me mention two of the differences in the way of thinking of scientists and of farmers:
 - a. One definition of a scientist is "A person who knows a lot about very little". A farmer on the other hand has to understand his farm as a whole and the interrelationships between different enterprises and different actions. The scientist may know of nearly all studies done on a certain plant disease, but have little understanding of labour and capital management on farms. A result is can be, for example, that some scientists give a recommendation which increase the yield of a crop, but decrease farm income when the farmer follows it.
 - b. Many farmers calculate their enterprise in a different way than economists do. They calculate in cash flows and therefore do not calculate wages for the labour of the farm family or interest on the capital the farmer has invested in his farm. A result is, for example, that farmers in the North of Benin fertilise their

cotton, but not their food crops. Increased yields of cotton will give them increased cash income, but increased yields of food crops will not, because these crops are seldom sold in this area. This one is of the reasons why soil fertility is decreasing here.

It is not always desirable that the extension agent accepts the way of thinking of their farmers as correct, but if these farmers feel that their extension agent does not understand why they are farming the way they are, they will not be inclined to follow his recommendations. Attempts to overcome these limitations of research include Farming Systems Research and research on sustainable agricultural systems and on indigenous knowledge, but perhaps extension agents who listen carefully to farmers will contribute even more.

Farmers have to make very different decisions (van den Ban, 1999; Errington, 1998). These decisions differ in the extent to which farmers or extension agents have the knowledge which is required to enable a farmer to make a decision which helps him to realise his goals as well as possible and in the extent to which he or the extension agent has the right to make a choice. It is possible, for example, that the extension agent and not the farmer knows that a breeder has developed a new crop variety which is resistant to an important disease. In that case it is likely that the farmer will be grateful for the recommendation to cultivate this variety. However, it is unlikely that an African extension agent knows any research which shows what is the most effective way for a farmer to supervise his workers, but many farmers have relevant knowledge on this issue from their own experience and that of their parents and friends. In addition, in decisions in which values play an important role, in my opinion, extension agents do not have the right to decide for the farmer what is the best

choice, for example, the decision whether his son should succeed him on the farm or look for a job outside agriculture.

We see that there are different reasons why not only knowledge from research, but also knowledge from farmers' experience should be used by extension agents to help their farmers with their decision-making process and also to ensure that farmers are involved in different kinds of decision-making

processes. This implies that there is not one best way to integrate both kinds of knowledge, but that it depends on a particular situation how this should be done. Hopefully some of our readers will analyse this further, although the problem is more complex as already indicated, as knowledge about markets and about present and future government policies should be utilised as well.

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