

## PRECAD

### Crop research project



#### "Get farmers more involved in research and development."

Cinzana Research Station for the next five years. In view of the results of an evaluation of the station's activities conducted in 2000 (see [evaluation](#)), it was agreed with the Malian government that the main focus of activity during 2001-2005 should be on technology transfer - since the research station's tasks, in addition to developing improved seed varieties and cultivation techniques, also include supplying and disseminating these among small-scale farmers. To achieve this goal, it is necessary to work even more closely with the farmers in developing and testing the new technologies, since the adoption rates have so far been relatively modest.

We interviewed our Malian partners - **Dr. Alpha S. Maïga, General Secretary of the Ministry of Rural Development**, and **Dr. Bino Témé, Director of the *Institut d'Economie Rurale***, to whom the Cinzana station reports - on the reshaping of collaboration between researchers, farmers, and agricultural extension services.

**One of the station's main tasks consists of disseminating new seed varieties and cultivation techniques among the small-scale farmers. What are the specific ways to disseminate the new knowledge to the farmers?**

**B. Témé:** There are various stages. In the first phase, an idea is developed, and it needs to mature and then undergo testing at the research station. You have to be convinced that it is a useful new strain or cultivation method. If the technology proves to be good after extensive investigations at the station, we then test it in the so-called real environment, among the farmers. That's the second phase.

We have village "antennae," where a member of the station's staff constantly supervises the test

rows together with the farmers. In these antennae, the researcher works with the farmers, along with an extension officer, on the test rows. In our agricultural system, the farmer is usually looked after by an extension service. All three take part in the process. In the test rows, the researcher is responsible for the technical interpretation of the results. The small-scale farmer is the actual beneficiary; he follows the tests and checks whether the new technologies are useful for his purposes and in his conditions. Finally, the extension officer also becomes involved, as he may have to communicate any promising technologies to other farmers later on.

### **What do these test rows look like in the farming environment?**

**B. Témé:** Normally, you compare the new seed varieties with the traditional ones in the farmer's fields, for example. That means the test field is planted next to a field with the traditional type, so that you have exactly the same conditions and the only difference is the seed variety.

**A. Maïga:** The new variety is not treated in isolation, it is integrated into the farmer's existing agricultural cultivation system - because that's where it will have to prove itself in the end. The soil quality, amount of rainfall, water reserves, available labor, other cultivated plants, and so on are decisive for whether the new variety will be successful.

### **How much say does the farmer have - to what extent is he integrated into the development process?**

**B. Témé:** So far, the process has been directed too much by the researcher, and there was too little exchange of information between the researcher, farmer, and extension officer. What we want is for the farmer himself to become more active and to take part more in developing techniques.

The farmers, researchers, and extension officers should have a dialog and exchange views, and discuss what the farmer's needs are. The research also needs to be oriented more toward demand. For example, after clarifying what the farmer needs, the researcher could offer three new varieties from which the farmer could choose the one best suiting his needs.

Of course, it is up to the farmer in the end whether to introduce a new seed variety or cultivation method. We think it will be easier to introduce new technologies if we can get farmers more involved in research and development.

**A. Maïga:** For example, by getting farmers to participate we can find out what sort of obstacles a

new variety will encounter with the farmer and his cultivation system. Based on the resources available to him and the existing capital, we can then suggest a technology appropriate to his situation.

**You mention obstacles preventing the farmer from introducing new seed varieties or cultivation techniques. Can you give any examples of the sort of obstacles these might be?**

**A. Maïga:** To begin with, there is the problem of risk. Every innovation carries a certain amount of risk. Farmers are primarily entrepreneurs, and entrepreneurs think very carefully about what sort of risks they are able to accept or want to accept. In terms of dealing with the risk, there are various types of farmer.

Some find it difficult to give up the previous methods of cultivation, which they are good at, in favor of others they are unfamiliar with. With innovations, they prefer to wait and see and to observe everything carefully, even though some of them would certainly have the resources needed. Others are more willing to take risks. They want to test the new technologies, and then they make a rough financial calculation, see whether they can find the labor needed, and get on with it.

There are also other problems that affect the speed with which farmers are able to accept innovations, such as the size of the area cultivated and access to the market.

**B. Témé:** And there is also the supply problem. It is sometimes difficult for the farmer to obtain any seed, seed treatment, and fertilizers at all. Several improvements need to be made here. At present we are working with the International Fund for Agricultural Development's rural development program and with Syngenta and other firms involved in the agricultural area, as well as the Syngenta Foundation, on improving the supply of the means of production (see on page 31).

There is also the problem of profitability. In years with good harvests, the higher production can sometimes be less profitable for the farmer than a lower yield in other years. The market is so saturated that the farmer is unable to sell off his surplus at a good price any more, especially as he is unable to store anything for longer periods. And when the price is not acceptable, it is quite possible that he will then barely be able to recover the costs of seed and seed treatment.

In short, a lack of transport equipment, markets, and price guarantees, as well as poor-quality roads and inadequate access to the means of production, restrict the extent to which an improved seed variety or cultivation technique can be distributed.

**In connection with participatory development, we are always hearing about the importance of local knowledge. What role does the farmer's local knowledge play in food security and in increasing productivity through improved seeds and new cultivation methods?**

**A. Maïga:** Even just creating new seed varieties is based on farmers' local knowledge, since after all we are using the farmer's domestic seed for cross-breeding with other varieties. Basically, many of these domestic varieties of millet are very useful, since they are adapted to local conditions and are well suited for processing (for flour, etc.). Only their growth cycle is too long, and they are often not very resistant to pests. This is why we bring in other varieties from various other countries and regions of The Sahel for cross-breeding.

**Where else is local knowledge important?**

**B. Témé:** For example, in developing adapted cultivation techniques. Take agro-forestry. For many farmers in Mali this is nothing new. Millet is often planted in a field between trees such as acacia. The farmer knows perfectly well that this combination increases the crop yield, because the acacia drops leaves during the millet's growth period and somehow enriches the soil. But he isn't able to explain exactly what is going on. This is where the researcher can help. He takes up this type of technique and tries to explain it scientifically. This is important for applying and spreading the use of such techniques later on - because later the techniques can be developed further and adapted to other environmental conditions.

But local knowledge is also important in other respects. For example, an awareness of the farmer's socio-economic living conditions is indispensable for the successful spread of new technologies. It is important when introducing a new technology to know how much labor is available, and the way in which labor is organized in a household. To ensure that it spreads within a village, significant factors include whether the farmers are well organized and communicate knowledge to each other, and whether they are able to sell their products through a farmers' association.

**A. Maïga:** I would add that integrating local knowledge also shortens the research process - i.e.,

it saves money. The farmers know their own cultivation systems and ecosystems best. Farmers are incidentally also very good managers. It is precisely through the participatory approach that we can capitalize on this knowledge and obtain the maximum benefit from it, so that we can progress more quickly and improve people's living conditions.

*Gentlemen, thank you for the discussion.*

## **References**

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