

## PRECAD

### Crop research project



### "Technology transfer is extremely important to developing countries."

By Annick de Framond

In June 2001, I had the opportunity to travel to Mali with the Syngenta Foundation for Sustainable Agriculture. This was my first visit to the African continent - the first of many, I hope.

In Mali, I was able to learn about the various institutions involved in the country's agricultural research. I was deeply touched by the incredible hospitality I received during my brief visit. In addition, there was an outstanding and lively exchange of information with Malian researchers at the newly established Biotechnology Center at the Institut Polytechnique Rural - Institut de Formation et de la Recherche Agricole Appliquée.

The motivation and dedication shown by people carrying out research on tiny budgets reminded me of how fortunate we scientists are in the industrial world, and how easy it is to take our very expensive research facilities for granted.

I have been working as a plant molecular biologist for the last 17 years - initially for Ciba-Geigy, and later for Novartis and now Syngenta. The aim of plant biotechnology research is to develop transgenic crops resistant to various pests such as insects and fungi. Syngenta's portfolio now offers several transgenic products such as insect-resistant maize and herbicide-resistant soybean. This new technology has also led to the development of Golden Rice, rich in beta-carotene, which is converted into vitamin A in the human metabolism. This rice variety will be made available to developing countries free of licensing fees.

In my view, although biotechnology on its own is not capable of solving the world's food

problems, it represents an important tool for achieving this. I am therefore in no doubt that the polemics currently surrounding the topic of genetically manipulated organisms will abate as consumers become more familiar with them and understand their value. Biotechnology can and will be used to help achieve food security throughout the world in the future. This will require specific research on the staple foods grown in developing countries, as well as ensuring that small-scale farmers in these regions have access to the improved products that are developed. The research itself should also be carried out where these crops are grown, by the local scientists who know them best.

Technology transfer is extremely important to developing countries - and it depends on goodwill and coordinated efforts on the part of various private and public-sector organizations. Successful transfer of biotechnology to Africa and other regions of the world will necessitate careful planning, with clear and realistic objectives, with the research program focused clearly on a few major foodstuffs. The initial steps have already been taken, with international institutions such as the Agricultural Biotechnology Support Project (ABSP) at Michigan State University and the International (ISAAA) advising national governments on developing targets. For example, the ISAAA, a network financed by public and private organizations, argues for transferring biotechnologically less sophisticated research methods, in order to avoid overloading the developing countries' own national research networks. Its work sets priorities for biotechnological research work capable of producing results in the short term. In addition to work on the staple crops such as maize, rice, and wheat, the ISAAA also provides support for important secondary basic foodstuffs in developing countries, such as bananas and sweet potatoes.

In addition, the ABSP has established an inventory of agricultural biotechnology for East and Central Africa, in which the major crops are described, the available biotechnological methods for pest control are detailed, and all current research programs by private and public organizations are listed. At the same time, the ABSP provided Monsanto, for example, with the information necessary for technology transfer before the company entered into the partnership with the Kenya Agricultural Research Institute that led to virus resistances being made available for use in sweet potatoes. The ABSP also provides support for the governments of developing countries in relation to intellectual property rights and legal regulations relating to biosafety issues.

Cooperative projects involving national and international public and private research institutions also need to integrate agricultural extension services and small-scale farmers into the development and testing of new products, to ensure that the products are actually used in

farming. Farmers' needs should be included in the description of research goals, and existing agricultural practices should be taken into account.

Finally, we - the researchers of the North - can make a contribution at the individual level by taking up the challenge of the food problem, sharing our knowledge, and building up contacts and cooperative projects with researchers in developing countries.

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