

Genetically modified crops in developing countries

– challenges for the development aid

English summary of a report by a task force
appointed by the Danish Board of Technology

November 2003

Foreword

In 2002, the Danish Board of Technology initiated a project on gene technology and food supply in the Third World. A cross disciplinary task force was appointed in support of the work of the Danish Board of Technology. This is a summary of the Danish report that has been published as the result of the work of the Danish Board of Technology and of the task force.

First and foremost, the report is intended for institutions and organisations engaged in agricultural development in the poor countries of the world, and also for politicians, researchers, corporate staff or others who, directly or indirectly, influence or who are involved in agricultural development, legislation, commerce, etc. in the Third World.

The Danish Board of Technology's cross disciplinary task force consists of:

- Christian Friis Bach, Associate Professor at the Royal Veterinary and Agricultural University of Denmark
- Esbern Friis-Hansen, Senior Scientist at the Institute for International Studies
- Hans Hessel-Andersen, Chief Consultant, TSA 6, (environment), Danida
- Jørn Olesen, Technical Consultant, TSA 1 (agriculture), Danida
- Kim Carstensen, General Secretary of the Danish section of the World Wildlife Fund (WWF) and member of the Board of Danida
- Kirsten Brandt, Senior Scientist at the Danish Institute of Agricultural Sciences

None of the above-mentioned institutions are responsible for the contents of the report. Each of the participants was selected for the task force, not by virtue of their employment at the respective institutions but rather based on their knowledge of the various professional aspects of the problem presented.

The following members of the Danish Board of Technology participated:

- Søren Gram, Project Manager

- Ida Leisner, Information Project Manager
- Bjørn Bedsted, Project Employee

As a crucial link in the work, the task force arranged three workshops where leading experts within selected areas presented and discussed the latest knowledge. The Danish report presents in edited form the subjects that were discussed within the task force and the workshops held, and against this background submits a number of recommendations. This summary focuses on the main conclusions and recommendations.

We hope you enjoy reading the summary,

Søren Gram, Project Manager
Bjørn Bedsted, Project Employee

The Danish Board of Technology,
November 2003.

Summary and recommendations

Can Danish development aid be used positively to 1) incorporate genetically modified crops into the work of improving the living conditions of the poorest population groups in developing countries – and 2) can this be done without conflicting with existing Danish development policy strategies? This two-pronged question constituted the starting point of the Danish Board of Technology's project, and was the question the appointed task force was asked to answer.

It quickly became evident to the task force that the first of the above questions was too complex and diverse to be answered by a simple yes or no. Instead, the task force decided to take a diversified, more pragmatic and action-oriented approach, as a result of which the Danish Board of Technology's report does not contain arguments for or against genetically modified crops as such. It rather intends to provide a basis for the assessment of benefits and drawbacks of the possible use of genetically modified crops in specific contexts.

The task force approached the issue in view of the fact that the dissemination of genetically modified crops is already taking place. It therefore outlines a number of initiatives which might contribute to strengthening the ability of developing countries to manage genetically modified crops; this does not imply that the task force in general recommends the use of genetically modified crops, which, as will be seen, should be based on case-by-case assessment.

With regard to the second part of the initial question, the task force believes that aid given to support the use of genetically modified crops in developing countries would not necessarily conflict with Danish development aid policy. However, the framework of Danish development aid is at all times determined by Danish government and EU policy and legislation and by international agreements such as the Cartagena Protocol on Biosafety. The

basis of the task force's approach is that aid should go to strengthening the hand of the poor and resource deprived-farmers. As a result, in the present report the relevance of genetically modified crops will be assessed relative to the interests of this target group.

The task force's **main message** is that

- genetically modified crops represent one among many technologies that may contribute to solving food supply problems in developing countries, but this form of agriculture is no miracle solution – at least not in the short or medium term. Danish development aid should continue to focus on a broad range of technological and institutional solutions in the agricultural area with focus on responding to the needs of the poor farmer, and from this point of view, the task force assesses that genetically modified crops will only be able to play a relatively limited role in the immediate future.
- the question of how best to assist countries must be assessed specifically from case to case and from country to country based on the four conditions listed in the box below:

- I) The work must remain within the framework and the policies of Denmark and the EU.
- II) The individual countries must have ratified the Cartagena Protocol on Biosafety.
- III) The institutional and legal frameworks needed to deal with the environmental aspects (including problems of resistance) linked to the use of genetically modified crops must be in place. In addition, countries must be capable of implementing their policies and legislation.
- IV) Countries must possess the capacity to assess the implications of introducing genetically modified crops from the standpoint of their impact on the environment, health and safety, and market, and they must also be able to evaluate alternatives.

In the opinion of the task force, development aid organisations will be failing in their responsibility to developing countries if they fail to adopt a position with regard to genetically modified crops and their use in these countries. This must be also viewed in the light of the objectives of Danish development aid to improve agricultural production in developing countries and aid objectives aimed at ensuring environmentally-sustainable development.

In this regard, on the one hand it is important to ensure that good agricultural results are not threatened by the uncontrolled introduction and utilisation of genetically modified crops already available on the market, and, on the other, it is only natural to examine whether certain genetically modified crops might assist developing countries in ensuring sustainable agricultural production and food supply in the future.

Premises

The task force emphasises a number of premises that will constitute an important framework for aid organisations when and if a developing country needs assistance in dealing with genetically modified crops.

- Each genetically modified crop must be assessed individually. They cannot be dealt with *en masse*.
- The same yardstick cannot be applied to all developing countries.
- Existing genetically modified crops are primarily adapted to the needs of farmers in the rich part of the world.
- Development of genetically modified crops is slow, i.e. there are relatively few genetically modified crops on the market and relatively few on the way in.
- Safety approval of genetically modified crops is expensive, since the control procedures are extremely comprehensive.
- Many developing countries do not have the capacity required to undertake needs assessment and control and would find it difficult to make their own assessments of whether they would benefit from the crops, and whether they could comply with the control and safety regulations.
- Patents influence development, and this may cause developing countries major legal and economic problems when it comes to the use and development of genetically modified crops.
- Genetically modified crops may have an adverse effect on developing countries' competitiveness and access to western markets (e.g. due to scepticism on the part of consumers).
- The consequences of introducing genetically modified crops are uncertain. No-one knows for certain what their impact will be on the environment, nutrition and biodiversity.

The report is divided into four focus areas with appurtenant recommendations: these are Technology, Political Policy, Institutions and Society.

Technology

In order to obtain a realistic view of opportunities, it is important to distinguish between crops already on the market and crops under development in the test field or the

laboratory. The environmental risks (i.e. the ecological, agricultural, health and resistance development risks), gene traceability and ethics are all crucial elements when it comes to technology. A case-by-case assessment is needed to ensure that one chooses the crop – genetically modified or not – or other technology which will best contribute to the solving of a given production and food problem in a specific country on an environmentally sustainable basis.

Where genetically modified crops are already growing in the fields, what then matters is the avoidance of problems associated e.g. with the development of resistance, the spread of genes and other environmental risks effecting ecosystems, agriculture and health.

If a country wishes to cultivate a genetically modified crop (which has not already been introduced and spread out of control), support may be given to the country to undertake a case-by-case assessment of the relevant crop the country wishes to introduce or is planning to produce. Such support should be based on the Precautionary Principle described in the Cartagena Protocol on Biosafety.

Our recommendations are:

- to support only the development and introduction of genetically-modified crops if this is done in close cooperation with farmers and with due regard for the general interests of the developing country,
- that any aid given to genetically modified crops should be based on case-by-case assessment, and
- in cases where assessment indicates that a genetically modified crop is not to the advantage of the target group, to provide assistance to trace and eliminate undesirable genetically modified crops – including the development and/or application of effective safeguards.

Political Policy

The successful introduction of genetically modified crops in a developing country re-

quires a number of specific regulatory and legislative measures to be in place. Unfortunately, many countries suffer the effects of poor governance and major deficiencies in political, institutional and financial capabilities, which often are at the very crux of the problem.

As regards intellectual property rights, the trend of recent years has been towards increased safeguarding of these, a worrying circumstance, in that it may result in reduced access to new technology and increased costs for the farmer.

Our recommendations are:

- to aid developing countries to draw up clear political priorities and strategies relative to genetically modified crops and accumulate knowledge and capabilities at the decision-making level,
- to support the passing of laws and regulations in the gene technology area to the extent these may be relevant, and
- to support the process of ensuring developing countries access to genetically modified crops and gene technology methods through such initiatives as less stringent transition schemes for the introduction of intellectual property rights in the plant technology area, special agreements with patent-holding agri-business companies and increased public research, the results of which are made available to all.

Institutions

In many developing countries there is insufficient expertise, institutional capacity, capital structure and infrastructure to attend to the basic processes required to deal with genetically modified crops and make them relevant to the poor farmer. At the moment, for example, there is a major need for providing the capacity to manage genetically modified crops which have been developed in other countries and where there is a wish to export these to developing countries in accordance with the Cartagena Protocol. There is a need for institutions capable of ensuring the environmentally sound cultivation and use of genetically modified crops. There is also a

need for institutions capable of attending to the needs of farmers and their opportunities for influencing events, and for research institutions capable of attending to national, regional and local research needs. Today, only a minor part of publicly financed research is dedicated to solving the specific needs of the developing countries.

In some developing countries it may also be relevant to assess new crops which have been developed inside the country itself, something that will perhaps become more common in the future. Such, however, is not the main trend, and therefore the task of experts in the country is most often to define requirements and assess whether these have been complied with, while for the time being they do not need to be capable of carrying out the relevant research themselves. The basis of risk assessment and the need for further investigation must be evaluated on a case-by-case basis. In addition, there is a real need for financing and other assistance towards the setting up of control/inspection systems independent of and separate from the production process.

Our recommendations are:

- to attend to the establishment of and cooperation with representative, efficient and legitimate agricultural organisations and consultants,
- to promote the establishment of relevant public institutions and organisations responsible for everything from legislation to assessment of technology and management of environmental problems,
- to ensure support for research into genetically modified crops in the developing countries to a far larger extent than is currently the case, for example using participatory/participant-oriented research methods, strategic research partnerships and twinning arrangements across national frontiers and across organisations in both industrialised and developing countries,
- to ensure the ability to enforce laws and regulations relative to the handling of genetically modified crops,

- to support reforms that increase the influence agricultural organisations exert on the spending of public funds on agricultural research and consultancy services.

Society

To the extent that the introduction of genetically modified crops enables farmers to obtain increased yields and to reduce their pesticide and other resource purchasing needs, the cultivation of genetically modified crops may be financially rewarding for poor farmers and thus in accordance with the poverty reduction objectives of development aid. For this reason it is important to examine the impact of modified crops on poverty and national economies.

If the local population of a developing country is against genetically modified crops, social and political conflicts may arise in cases where the authorities grant permission to use genetically modified crops without prior public discussion.

Our recommendations are:

- to ensure that genetically modified crops are in line with overall social objectives relative to the reduction of poverty and nutritional problems,
- to ensure the underpinning of civil society and openness through access to relevant information and broad-based and open dialogue with members of society, and
- to ensure access to technology by providing aid to public research initiatives with a focus on the development of crops the characteristics of which are relevant to the needs of resource-deprived farmers and consumers.