

Factsheet

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Photo: al-Janabi

Biosafety

Implementation of the Cartagena Protocol

The use of genetic engineering methods in agriculture is associated with highly disparate expectations. While research and industry have for 20 years been holding out the prospect of reducing hunger and poverty through the cultivation of genetically modified crops, advanced breeding methods that do not involve genetic engineering are now yielding more attractive alternatives. Many breeding successes were reported in 2007, including beans for dry and impoverished soils in Colombia, rice for land at risk of flooding in Bangladesh and wheat for dry soils in India.

The genetically modified plants that are now being grown – soya, maize, rape and cotton with resistance to herbicides and some insect species – are accredited by research and industry as well as by regulatory authorities as involving negligible risks for people and the environment. Critics point to inadequacies in some of the study methods used and draw more negative conclusions from the results.

The term biosafety is used to cover the entire range of instruments intended to avoid or reduce the risks to biological diversity and human health that arise from the release and use of genetically modified organisms (GMOs). It covers the analysis of these risks as well as measures to control, manage and monitor them.

The introduction of GMOs can have far-reaching and undesirable ecological consequences, particularly in developing countries: the dissemination of artificial genes in the natural gene pool is an example. This is a particular problem in centres of origin and diversity of food crops, since their wide variety of species and genes has important potential for long-term food security. Another negative impact is the possible effects of GMOs on other, »non-target« organisms such as wild animals and beneficial insects.

The use of GMOs may also have negative socioeconomic and socio-cultural consequences on account of the increased capital expenditure involved. Genetically modified seed commands higher prices; the use of insect-resistant plants requires special knowledge in order to avoid the development of insect lines that are resistant to the plants. GMO use can therefore be economically risky, particularly for small farmers in poor agricultural settings. Village social structures may also be adversely affected. There is a risk that women will be particularly disadvantaged by the use of modern technologies and the commercial acquisition of seed; in many cultures both activities are seen as male domains. Depending on the national legislation in place and agreements with the patent owners, the purchase of genetically modified seed can create new dependence as a result of »built-in« patents. Another risk is the replacement of export



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Biotechnology and genetic engineering

Biotechnology is the term used to designate all technical applications that use biological systems, living organisms or products thereof to produce or change products or procedures for a specific purpose. Biotechnology thus embraces »classic« procedures such as brewing beer and producing yoghurt (fermentation) as well as microbiological procedures (e.g. synthesis of natural substances) and genetic engineering which aims to make specific changes to the DNA of an organism.

The term »modern biotechnology« as defined in the text of the Cartagena Protocol refers to the application of genetic techniques that overcome natural reproductive or recombination barriers and that are not techniques used in traditional breeding and selection. GMOs, or »living modified organisms« as they are termed in the protocol, are defined as »any living organism that possesses a novel combination of genetic material obtained through the use of modern biotechnology«.

On behalf of

products such as cocoa butter or vanilla by products that can be produced industrially through the use of GMOs.

The Cartagena Protocol on Biosafety

In January 2000, under the Convention on Biological Diversity (CBD), the Cartagena Protocol on Biosafety was adopted. The protocol entered into force in September 2003 after the 50th ratification; it has

so far been ratified by 150 states. It strengthens in particular the position of states that as yet have no biosafety legislation, since any importation of GMOs for use in agriculture requires the prior consent of the importing country. An important element of the protocol is the anchoring of the precautionary principle, permitting Member States to impose import restrictions and prohibitions even if there is no conclusive evidence of possible dangers.

Transboundary movements of GMOs are regulated by the Biosafety Clearing House (BCH), an Internet-based information system. Since the protocol focuses on transboundary traffic, it does not regulate every aspect of genetic engineering and, for example, contains no statement on the national development of GMOs. Since it forms part of the CBD, the Protocol covers only GMOs that are capable of reproduction. All genetically modified organisms that are approved at national level as food or feed and which are registered with the BCH may be exported to other Member States without prior consent unless the importing state has stipulated otherwise in its own regulations. The import of GMO products that are not capable of reproduction, such as soya flour, is not covered.

The German Biosafety Capacity Building Initiative

The need for consultancy for the implementation of the Cartagena Protocol is extremely high in developing countries, and the capacities required do not yet exist. Within the scope of the German Biosafety Capacity Building Initiative of the Federal Ministry for Economic Cooperation and Development (BMZ), partners are receiving support to implement this protocol at national level and to assess independently the risks of genetic engineering.

Biodiversity and the Biodiversity Convention

The term »biological diversity«, or »biodiversity« for short, encompasses the diversity of life on Earth, ranging from genetic diversity and diversity of species to the diversity of ecosystems. The Convention on Biological Diversity (CBD) adopted in Rio de Janeiro in 1992 comprises three elements: the conservation of biological diversity, its sustainable use and the equitable sharing of benefits arising from such use. In the meantime, 191 Parties have joined the Convention. By signing the Convention, Germany has agreed not only to conserve biodiversity on its own territory but also to support developing countries in implementing necessary measures.

GTZ's contribution to implementation of the Cartagena Protocol

GTZ, on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), works at German and international level to accelerate implementation of the Cartagena Protocol and promote its further development. This is effected in particular through the programme »Implementing the Biodiversity Convention«,

which is responsible for implementation of the German capacity-building initiative.

GTZ carried out wide-ranging advisory work during the negotiation process which surrounded the Protocol; this is now being continued in the implementation phase. In addition, GTZ is conducting a regional project with the African Union for the development of biosafety capacities and a number of single measures for developing capacities in selected partner countries such as China.

Action required

- Support to developing countries for implementing the international resolutions and regulations on biosafety at national level in legislation and policy-making, e.g. in setting up biosafety authorities;
- Support to developing countries in the further negotiations on the Cartagena Protocol;
- Intensified capacity building and raising of biosafety awareness in developing countries, for instance through educational and public relations work;
- Development of mechanisms enabling civil society to participate in political decision-making processes;
- Promotion of networking between government and civil society stakeholders at national and regional level.

Further information

Homepage of the Biosafety Protocol: www.cbd.int/biosafety

Homepage of the Biosafety Clearing House Mechanism: <http://bch.cbd.int/>

Third World Network Biosafety Information Centre: www.biosafety-info.net/

International Centre for Genetic Engineering and Biotechnology: www.icgeb.trieste.it/

Imprint

Published by:
Deutsche Gesellschaft für Technische
Zusammenarbeit (GTZ) GmbH

Dag-Hammarskjöld-Weg 1-5
65760 Eschborn
T 06196 79 - 0
T 06196 79 - 1115
E info@gtz.de
I www.gtz.de

Authors:
Hartmut Meyer
Alexandra Müller

Printed on 100% recycled paper
Updated: January 2009

For further information:
Deutsche Gesellschaft für Technische
Zusammenarbeit (GTZ) GmbH
Programme »Implementing the Biodiversity Convention«
Contact: Alexandra Müller, Dr. Konrad Uebelhoer

T 06196 79-7403, -1362
F 06196 79-80-7403, -1362
E alexandra.mueller@gtz.de, konrad.uebelhoer@gtz.de
I www.gtz.de/biodiversity

