Swiss Agency for the Environment, Forests and Landscape SAEFL

Factsheet
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Biosafety

Erring on the side of caution

Background

Genetechnology in Switzerland. Genetechnology has become one of the decade's key scientific, social and political issues. Using genetic modification (GM) techniques, it is now possible to develop novel organisms and products, which are believed to hold out great promise in the fields of medicine and agriculture. From the outset, the GM debate in Switzerland focused on questions relating to safety, ethics, and the research climate. Access to genetic resources and benefit sharing are now also a topic of ethical, social and economic debate.

New dimensions. Genetechnological methods can be used to modify traits and behaviour at a fundamental (genetic) level, creating novel types of organism, not found in nature, and beyond the reach of conventional breeding techniques.

Threats facing humans and the environment

Environmental consequences. The use of commercial biotechnological products in agriculture has raised environmental concerns. It is feared that naturally occurring species could be threatened by the spread of GMOs or by cross-pollination. Further, it has been suggested that there could be unexpected impacts on the balance of species, with ecosystems being disrupted as a result. Given the complexity of genomes and ecosystems and the gaps that exist in scientific knowledge, it is not possible at present to make reliable predictions concerning the long-term ecological consequences of the environmental release of GMOs.

Consumer choice at risk. Traditional agricultural varieties could potentially also be affected as a result of cross-pollination with GM plants. Mixing could also occur at various points along the supply chain. There is thus a risk of cross-contamination between conventionally produced and GM foodstuffs. This would have a direct impact on consumers: in the long term, the production and availability of GM-free food would be at risk, and consumers would be deprived of their freedom of choice.

Measures taken to date

In Switzerland

The **Biotechnology Law (GTG*)*** recently approved by the Swiss Parliament represents a new instrument for the protection of the environment, biodiversity, and GM-free agriculture. The new law includes the following provisions:

- **Requirements for the conduct of field trials** of GMOs and for their commercial use: these activities are prohibited if the GMOs or their altered traits could spread undesirably, or if they contain genes for resistance to antibiotics that are used in human or veterinary medicine.
- **Ban on genetic modification of vertebrates**: These may only be produced or imported into Switzerland for purposes of research, treatment or diagnosis. In addition, justification is required for any modifications of animals or plants that alter species-specific traits.
- **Segregation and labelling**: Anyone who handles GMOs has to ensure that GM-free products do not become contaminated. Products that consist of, contain or are derived from GMOs have to be labelled as GM products.
- **Controls**: All activities involving GMOs are subject to mandatory authorization and notification, to ensure that compliance with the legal requirements can be monitored.
- **Liability**: Authorization holders are liable for damage arising from the handling of GMOs as a result of the altered genetic material. Claims for compensation have to be lodged within three years of the damage becoming known. Such claims are time-barred 30 years after the event that gave rise to the

damage. Liability not only covers personal injury or damage to property but has also been extended to environmental damage.

- **Right of appeal by associations**: This is now applicable not only to the construction of biotechnological facilities but also to the commercial use of GM seeds, fertilizers and pesticides.

Internationally

The Cartagena Protocol on Biosafety is the first instrument of international law specifically concerned with protection of the environment and human health in connection with the use of GMOs. In this Protocol, a precautionary approach is explicitly adopted. The aim is to control transboundary movements and ensure that minimum standards of safety are adhered to worldwide when GMOs are released.

The Protocol was adopted at an extraordinary meeting of the Conference of the Parties to the Convention on Biological Diversity held in Montreal on 29 January 2000; it was ratified by Switzerland on 26 March 2002. The Protocol will enter into force when it has been ratified by 51 parties. As of Mai 2003, it had been ratified by 49 countries, and it is likely to come into effect this summer.

Agenda for the future

Rapid implementation of the Biotechnology Law. The deadline for the calling of a referendum on the Biotechnology Law is 10 July 2003. Thereafter, the Federal Council will rule on its entry into force, deciding whether this is possible before supplementary ordinances have been passed. Legislation in the form of ordinances on the handling of GMOs is already largely in place (Containment and Release Ordinances). Although these will have to be adapted to the new legal basis, they will remain essentially unchanged. SAEFL will therefore be requesting the Federal Council to effect the rapid entry into force of the Biotechnology Law.

Focal Point for GMO exports. Implementation of the Cartagena Protocol will require amendments to Swiss ordinances. A National Focal Point is to be established, which is responsible for implementing national regulations on exports of GMOs, coordinating information-sharing measures and liaising at the international level. The information that is required to ensure that transboundary movements are correctly handled is published online (e.g. addresses of contacts, relevant national regulations, requirements concerning handling, transport, packaging and identification of GMOs; information is available at http://bch.biodiv.org/Pilot/Home.aspx). The entry into force of the Protocol does not entail any additional responsibilities for the cantons.

Basic ecological research. The expertise required to consider broader ecological questions is frequently lacking, and predicting the long-term behaviour of complex, self-regulating living organisms in the environment is a difficult matter. To improve our knowledge, there is a need for a coherent programme of ecological research. However, the current generation of biologists tend to lack detailed knowledge of species, and Chairs in Molecular Biology tend to receive greater support than Chairs in Ecology. A focus on molecular structures may preclude a more holistic view of organisms.

There is thus a need for a National Research Programme devoted to studying the interactions between complex organisms. Such a programme would provide the knowledge required to assess the potential consequences of the environmental release of GMOs.

Further information:

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