EcoNexus

www.econexus.info
info@econexus.info

Hungry Corporations:

Transnational Biotech Companies Colonise the Food Chain

By Helena Paul and Ricarda Steinbrecher
with Devlin Kuyek and Lucy Michaels

In association with Econexus and Pesticide Action Network, Asia-Pacific
Published by Zed Books, November 2003

Chapter 7:

Government Legislation and Corporate Influence

A well-informed and active public and a reasonably independent media are vital to balance the multifarious pressures exerted by the corporations, as the activities of the US, the EU and various governments in Eastern Europe and the former Soviet Union clearly reveal. In the US, the public has been relatively slow to respond to the issue of GM food and until 2000 there was little awareness or activity, so the companies have had a comparatively free hand. The US grew 66 per cent of the world's GM crops in 2002, and did not take action to segregate GM from non-GM crops. In Europe, on the other hand, resistance was quick to appear and has remained strong throughout most of the region. In the UK, where the government has allowed extensive field trials of GM crops, public opposition has been active and vocal. Experience in Eastern Europe demonstrates that where neither the government nor the people are aware or prepared to resist, the companies readily enter and do not set standards unless they are forced to do so. Thus Romania had 15,000 hectares of GM crops growing before any law was passed, and is now the source of much smuggled GM seed, while the countries of the former Soviet Union are the 'Wild East', where anything goes. Yugoslavia had some of the strongest laws in the region, but under cover of field trials the companies have got a foothold, as they have in the UK. In fact field trials are the Trojan horse of the industry, seen clearly as the precursor of commercialisation yet sometimes tolerated by a public that would not accept immediate commercialisation. They can be seen as part of a softening-up process: giving the impression that safety research is being carried out, getting people used to the idea of GM crops, and maintaining the idea that they can flourish alongside conventional and organic agriculture.

When Croatia decided to advertise itself as GM-free, it suddenly found itself the object of threats from the US administration (see below, pp. 178–9). Currently, the EU is faced with US action through the World Trade Organisation, an unelected and unaccountable body with the power to overrule any national government.

Table of Contents

7.1 Exerting influence worldwide

> *It seems that they are trying to buy influence with key individuals, stack committees with experts who support them, and subvert the scientific agenda around the world.*

Sue Mayer, GeneWatch UK and member of the AEBC[1]

A confidential report was leaked to GeneWatch UK[2] at the end of 2000 which summarised the activities of Monsanto's Regulatory Affairs and Scientific Outreach teams for May and June 2000. It revealed the corporation's involvement in a global campaign to promote GM foods and crops by lobbying for certain experts to get on international scientific committees and by promoting biotechnology through supposedly independent scientists. It describes developments in the regulation of GM crops, and Monsanto's efforts to influence them via the FAO/WHO committees and in 20 countries, including Japan, Bulgaria, Thailand,

Mexico, Brazil and Korea, as well as the US and the European Union.

Cases have been recorded around the globe of Monsanto or US representatives applying pressure to judicial or national decision-making processes. Threatening to use the WTO is a common threat, as shown in the cases of Sri Lanka and Croatia. In both Brazil and India, Monsanto has applied enormous pressure to gain approval for its crops, succeeding in India and failing in Brazil (see pp. 215-16).

Monsanto is just one of the many biotech companies eager to sell their products globally. It is the best-known, since currently it is the company with the largest share worldwide in GM crops. Others might at present be less visible in their efforts to influence legislation and regulators, but not necessarily less effective in doing so.

Threatening Sri Lanka with the WTO

Rather than simply introducing labelling laws, Sri Lanka tried to establish a ban on the import of GM foods in May 2001. This followed prolonged internal discussion, supported by the Sri Lankan NGO Environmental Foundation Ltd. The World Trade Organisation called for the ban to be postponed, initially for 60 days. The reason given was: to allow exporters in other countries time to adjust.[3]

The US then threatened to use the WTO to overturn the ban. Sign-on letters to US Trade Representative Robert Zoellick protesting the right of Sri Lanka to determine what food products it allowed to be imported were developed by concerned NGOs such as Pesticides Action Network Asia–Pacific and Friends of the Earth International in an international campaign.[4] Sri Lanka gave up its attempt to ban the import of GM food, however, and, although the Environmental Foundation Ltd renewed its efforts in early 2002 by lobbying the new Minister of Health, the ban has not been imposed since.

Teamwork to put pressure on Ireland

In 1997 Novartis and Monsanto joined forces to apply pressure to the regulatory and judicial system of the Republic of Ireland over its reluctance to allow the growing of GM sugar beet in field trials. GM sugar beet was the first GM crop to be tested on Irish soil. On behalf of many citizens Claire Watson tried to secure a court ruling that would prevent Monsanto from sowing GM sugar beet. In this legal case – 'Watson vs Monsanto' – Steven Moll asserted, for Monsanto, that if Monsanto was not allowed to go ahead with the trials, Novartis would withdraw all non-GM beet seed from sale to Irish farmers. He further stated, 'Given the importance of Novartis on the Irish market, this would have serious implications for the Irish sugar beet industry.'

Pulling strings in Pakistan

Under current WTO regulations, the TRIPs agreement obliges countries to implement law to protect intellectual property rights. Currently a major struggle is over the fact that countries are allowed to make an exception for plants and animals, although micro-organisms are part of the regime. In Pakistan, an official with the Ministry of Food and Agriculture told IPS news service that Monsanto was lobbying the government aggressively to implement patenting law. He said that 'Monsanto is pulling powerful strings to influence the legislative process in its favour, sending letters to government officials, holding meetings with politicians.'[5]

Monsanto was concerned that the legislation could favour farmers' rights over those of TNCs. According to Dr Shahid Zia, an NGO representative and research fellow with the Sustainable Policy Development Unit (SDPI), 'The proposed law would allow farmers to save, retain and exchange seeds. . . . [It] requires a genetically modified or transgenic plant to clear tough environmental impact and biosafety assessments before being given protection.'[6] The law was unacceptable to Monsanto. In a letter to the government's Seed Certification Department, Monsanto's Managing Director in Pakistan went on the offensive:

> In the presence of this clause, anybody from the public can sue us and ask for compensation for hazards and damages which are kind of open-ended risks. Hence, take out this clause…. Again I repeat that this clause is not acceptable to any multinational company and it should not be different than any non-transgenic variety.[7]

Substantial equivalence downgraded

As a result of public pressure from concerned individuals, non-government organisations, scientists, and individual politicians, certain industry cornerstones have begun to crumble, for instance the concept of substantial equivalence.

First conceived by the OECD in 1993, the concept was later endorsed by the FAO and WHO in 1996. The adoption of the concept of 'substantial equivalence' as a criterion for the safety of GM foods assisted the biotech industry in its desire for minimal regulation and testing. By comparing major biochemical components, GM food crops could be called substantially equivalent as long as any conventional counterparts could be found with similar compositional values, even if data was derived from 60-year-old research using different

methods of analysis.[8] Equally, GM squash was regarded as 'substantially equivalent' despite containing 64 times less pro-vitamin A (beta-carotene). Whilst, for example, the Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA) in the US regarded substantial equivalence as a safety assessment in itself, scientists and public interest groups around the world insisted that it was ill-defined and pseudoscientific and should be replaced with an analysis that included biological, toxicological and immunological tests.[9]

Although the phrase is still being used, the argument about substantial equivalence has largely been won. It is no longer seen as an end point of safety assessment but as a starting point. The Joint FAO/WHO Expert Consultation on Foods Derived from Biotechnology summed up the position in its report (June 2000):[10]

> The application of the concept [of substantial equivalence] is not a safety assessment in itself; it does not characterise the hazard, rather it is used to structure the safety assessment of a genetically modified food relative to its conventional counterpart. As a starting point, the genetically modified organism (plant, microorganism or animal), and/or foods derived from it, is compared with its closest traditional counterpart in order to identify any intended and unintended differences which then become the focus of the safety assessment.

The term, however, is still open to misinterpretation and continues to be used by industry and proponents alike as a description of safety in public relations situations.

7.2 US legislation

The US was the first country to develop and release genetically engineered crops. Close relationships with the biotech corporations appear to have continued unabated through different US administrations, with key players revolving between government and corporate posts on a regular basis.[11] It is hardly surprising therefore that the US promotes biotechnology at home and abroad so enthusiastically. Introducing GM crops and food into the US without labelling or segregation and with a minimum of regulation gave corporations a massive advantage in their approach to the rest of the world. Furthermore, the US also, through many administrations, deliberately designed its internal policies so as to have plenty of cheap food produce available to donate or dump on foreign markets, including GM food (see Chapter 8).

Arguments that have been used in international negotiations in an attempt to persuade other countries to trust US regulators and US-approved GM crops and food include:

- GM crops and food have been rigorously tested for health and environmental safety and approved in the US, and are thus safe.
- The US public is happy to eat GM food, as it trusts the regulatory system.
- Americans have eaten GM food for years and nobody has fallen ill or died from it.

US citizens have begun to respond to the issue of GM foods, however, and industry and government departments, which previously had a free hand, are being forced to react.

During the 1970s genetic engineering for commercial purposes was first developed by small companies. When GM applications moved into agricultural crops, the US federal government took up industry's cause, so as to allow the US to maintain and expand its position as the world's agricultural leader. This view continued under Presidents Reagan and George Bush (senior), who did not want to stifle the development of biotechnology under 'regulatory excess', or send Wall Street the wrong message.

The Reagan administration decided in the mid-1980s under the 'coordinated framework' that no new regulations were needed to deal with this emerging technology, as genetic engineering was claimed to be just an extension of traditional plant and animal breeding without new risks. Instead, the technology would be covered under existing USDA, FDA and EPA regulations. Each of the various agencies had to develop proposals for how to do this. The EPA, for example, put out the Plant Pesticide Proposal in 1994. Thus a plant engineered with insect resistance (Bt toxins) is regulated as a pesticide. Yet field trials fall under USDA.

This piecemeal approach led to confusion over which department had jurisdiction over what. For example, genetically engineered micro-organisms that might be released into the environment ended up being regulated by the EPA under the Toxic Substance Control Act – which is not really appropriate because the kind of tests required for new chemicals are very different to those needed for novel organisms.

It remains unclear how GM animals are going to be regulated; at present there is no pre-market requirement for any new animal variety to be reviewed for safety or environmental impact before it is released. Engineered animals may be categorised as new drugs – but the FDA has not yet proposed any regulation.

United States Department of Agriculture (USDA)

In 1862, when President Abraham Lincoln founded the US Department of Agriculture, he called it the 'people's department'. Today it promotes US agriculture exports and its primary goal is the promotion of economic and trade opportunities. The emphasis on international trade is underlined by the comment in USDA's strategic plan that 96 per cent of American agriculture's potential customers reside outside US borders. Its designated responsibilities are the safety of meat, poultry and egg products, food and nutrition programmes in the US, forests, and research into 'new crop technologies', which included the regulation of GM field trials.[12] After he left, former Secretary of Agriculture Dan Glickman described his Department's attitude to biotech:

> What I saw generically on the pro-biotech side was the attitude that the technology was good and that it was almost immoral to say that it wasn't good because it was going to solve the problems of the human race and feed the hungry and clothe the naked. And there was a lot of money that had been invested in this, and if you're against it, you're Luddites, you're stupid. There was rhetoric like that even here in this department. You felt like you were almost an alien, disloyal, by trying to present an open-minded view on some of the issues being raised. So I pretty much spouted the rhetoric that everybody else around here spouted; it was written into my speeches.[13]

The choice of Ann Veneman as Bush Junior's Secretary of Agriculture showed that this highly pro-GM attitude was set to continue.[14] She was actively involved in the negotiations for the Uruguay Round of GATT, NAFTA, and the US–Canada Free Trade Agreement. She served on the board of a Monsanto subsidiary, Calgene Inc., and is known to be a strong proponent of biotechnology. 'We are delighted with her selection,' BIO commented, 'it is hard to imagine a better choice.'

However, in its March 2002 report ('Environmental Effects of Transgenic Plants: the Scope and Adequacy of Regulation') on the USDA/APHIS[15] review process, the National Research Council (NRC, part of the National Academy of Sciences) strongly criticised USDA/APHIS testing for lack of rigour, inadequate ecological and non-target impact assessments, failure to demand the submission of full data on the gene sequences after insertion into the plant, and permitting companies to exploit commercial confidentiality to avoid disclosure.

This marks a change at the National Academy of Sciences, which has slowly been developing a more rigorous approach to the issue of GM. In 2000, for instance, it examined the EPA and pointed out that its regulations for plant pesticides were inadequate, and needed to be strengthened.

The Food and Drug Administration (FDA)

The FDA's mandate covers the regulation and safety of drugs, food (other than meat, poultry and egg products), cosmetics and electronic radiation. A major aim stated on the FDA's website is to 'Participate through appropriate processes with representatives of other countries to reduce the burden of regulation, harmonise regulatory requirements, and achieve appropriate reciprocal arrangements….'[16]

The FDA does not require human safety testing for GM plants; instead there are 'voluntary safety consultations'. FDA's biotech policy was announced on 28 May 1992 by US Vice-President Dan Quayle at the press conference of a biotech industry conference. It was introduced as a deregulatory initiative and was based on the notion 'that the new techniques [such as genetic engineering] are extensions at the molecular level of traditional methods and will be used to achieve the same goals as pursued with traditional plant breeding' (57 FR 22991, 29 May 1992). Consequently it was concluded that they should be regulated in the same way.

The FDA could have regulated the new engineered traits as food additives. Instead – a crucial difference – it placed them under the GRAS – 'generally regarded as safe' – provisions of the Federal Food, Drug and Cosmetics Act. This is now causing problems, as under this provision the FDA cannot require safety testing. Companies themselves are allowed to declare a new substance 'GRAS'.

The voluntary notification system means that no one actually knows how many GM products are on the market in the US, since the corporations conduct their own safety tests and only notify the FDA if they suspect a problem. According to US law, such tests can be considered trade secrets. It would be naïve to consider the FDA ruling as simply an oversight. The interrelationship between industry and government, in particular the FDA and the EPA, is eye-opening:

- William D. Ruckelshaus is a former chief administrator of the EPA and, for more than a decade, a member of Monsanto's board of directors.
- Linda Fischer is a former assistant administrator of the EPA's Office of Pollution Prevention, Pesticides and Toxic Substances and, more recently, vice-president of government and public affairs at Monsanto.
- Margaret Miller is a former chemical laboratory supervisor for Monsanto and now deputy director of human food safety and consultative services in the new animal drug evaluation office at the Center for Veterinary Medicine of the FDA.[17]

GM foods: not approval – just acknowledgement

Michael Hansen of Consumers Union US has pointed out:

> Lack of adequate safety testing can be seen in the letter FDA sends to the company after completion of a 'safety consultation'. For example, the letter sent to Monsanto on 25 September 1996 about its MON810 Bt maize states: 'Based on the safety and nutritional assessment you have conducted, *it is our understanding that Monsanto has concluded that corn grain and forage derived from the new variety are not materially different in composition, safety, or other relevant parameters from corn grain and forage currently on the market, and that they do not raise issues that would require premarket review or approval by FDA*' (italics added).[18]
>
> Note that the FDA does not state its own opinion about the safety of this crop; it only states what the company believes. The letters for all 52 'safety consultations' done since the Flavr Savr tomato contain basically the same language.

The FDA thus does not approve a novel GM food but only acknowledges that the company regards it as safe.

The after-glow of the Flavr Savr tomato

The Flavr Savr tomato was the first and only GM product the FDA looked at in some detail. Other GM products since have been released on to the market without any government testing or need for approval. Instead, the government chooses to conclude that the company has conducted the relevant tests (see Box above).

The Flavr Savr tomato was developed by the California-based biotech company Calgene – now owned by Monsanto. This tomato was genetically engineered to slow down the softening process during ripening, thus facilitating transport and increasing shelf life. Since the action of the inserted 'anti-sense' or reversed gene was to block the product of another gene, rather than producing its own, the only novel 'gene product' (protein) in the GM tomato came from the kanamycin antibiotic resistance marker gene. Calgene therefore put the marker gene – not the whole tomato – through the food additive petition process. Approved in 1994, it was put on the market in the same year with a big fanfare. Yet three years later the GM-tomato quietly disappeared from the shelves; Flavr Savr failed the market test. However, according to an FDA internal memo, Flavr Savr also failed to meet Agency safety standards. Robert J. Scheuplein, director of the Agency's Office of Special Research Skills, found problems with some of the testing data on the Flavr Savr.

As the investigative journalist Kristi Coale reported: [19]

> Although he regarded the effect as small, Scheuplein did say: 'The data does not show the Calgene product to be unsafe but the data falls short of "a demonstration of safety" or "a demonstration of reasonable certainty of no harm" which is the standard we typically apply to food additives.' Concerning how the Agency was instructing its scientists to regard GM foods in testing, Scheuplein said, 'It has been made clear to us that this present submission [the Flavr Savr] is not a food additive petition and the safety standard is not the food additive standard. It is less than that, but I am not sure exactly how much less.'
>
> A chilling implication is revealed by Scheuplein's memo: all GM crops approved since 1992 have undergone less stringent testing. In fact, testing is handled not by the Agency but through voluntary consultations between the companies and the FDA with company scientists running the tests.
>
> Previously undisclosed papers such as these tell the story of how the FDA flouted its own laws and ignored the advice and warnings of its own scientists in the process of pushing through a food technology that seemed to have immediate benefit only for the producers – namely agrochemical companies including Monsanto, DuPont and Novartis.

Dr Belinda Martineau, the scientist who conducted the safety studies on the Flavr Savr tomato at Calgene, wrote a book about the whole approval *process (First Fruit: the Creation of the Flavr Savr Tomato and the Birth of Biotech Foods*). She argues:

> Rather than personal opinion, the scientific community should give the public facts, hard facts; the results of studies that indicate these foods are safe to eat and that growing them on a large scale will not cause environmental damage. Scientists and regulators throughout the ag-biotech industry agree that more public education about genetic engineering research is necessary, but, thus far, few have provided much information beyond how the technology works and the wondrous things that might be done with it.… *And simply proclaiming that 'these foods are safe and there is no scientific evidence to the contrary' is not the same as saying 'extensive tests have been conducted and here are the results'. In fact, without further elaboration, 'no scientific evidence to the contrary' could be construed as 'no scientific evidence, period*' (italics added).[20]

In May 1998 a lawsuit was filed against the FDA by a coalition of groups including the Center for Food Safety, the Alliance for Bio-Integrity and others. The suit alleged:

> that current FDA policy, which permits such altered foods to be marketed without testing and

> labels, violates the agency's statutory mandate to protect public health and provide consumers with relevant information about the foods they eat. It also charges that the policy violates religious freedom.[21]

In particular, the plaintiffs alleged that because such foods have been implanted with foreign genes and the substances they produce, FDA policy violates those sections of the Food, Drug and Cosmetic Act which (a) require that substances added to food be labelled, (b) prohibit 'false or misleading' labelling, and © mandate disclosure of material facts. The suit also reflects a wide range of spiritual concerns, from the concerns of those who wish to avoid animal products, through to the opposition of those who object to procedures that they see as irresponsibly and arrogantly disrupting the integrity of God's creation.

At a public hearing on the FDA on 30 November 1999, papers that had come up during the course of the lawsuit revealed that FDA scientists themselves were warning about potential health hazards of GM foods. However, they were systematically being ignored by the politicians and policy makers at the FDA.

FDA microbiologist Louis Pribyl had stated, 'There is a profound difference between the types of unexpected effects from traditional breeding and genetic engineering.' Several aspects of gene splicing, he had added, 'may be more hazardous'.

Similarly, E. J. Matthews of the FDA's Toxicology Group had warned that 'genetically modified plants could … contain unexpected high concentrations of plant toxicants', and cautioned that some of these toxicants could be unexpected and could 'be uniquely different chemicals that are usually expressed in unrelated plants'.

Despite these warnings, the FDA's policy statement asserted that 'the Agency is not aware of any information showing that foods derived by these new methods differ from other foods in any meaningful or uniform way….'[22]

On 2 October 2000 the court decided that the FDA's decision not to regulate GM foods was technically legal. The coalition claimed that the decision was flawed.

However, the FDA was already beginning to change. It had held three public hearings (Washington, Chicago and Oakland) in 1999–2000, attracting responses from more than 35,000 people calling for strict mandatory safety testing. Partly as a result of this, in January 2001 the FDA proposed a plan to require data from companies on every aspect of a new GM product. They also acknowledged for the first time that there is a difference between genetic engineering and conventional breeding. These were tacit admissions that previous FDA policy had been inadequate.

7.3 European Union Legislation

In the 15 member states of the European Union,[23] GMOs such as GM crops have had a very mixed reception. Equally, the democratically elected European Parliament has remained critical of GMOs, trying to establish safeguards. However, the European Commission, the most powerful and unelected decision-making body in the EU, has often encouraged pro-industry legislation (such as the European Directive on the Protection of Biotechnological Inventions, 1998). Furthermore, both Jacques Santer, former President of the European Union (1995–9) and his predecessor Jacques Delors (1985–95) had spoken out in favour of biotechnology as an area for potential economic growth and competitiveness in Europe, with potential for creating millions of new jobs.[24]

Funding was given to projects supporting crop biotechnology. For example, the European Commission contributed $1.6 million in 1996 towards an industry-led four-year project entitled Familiarisation with and Acceptance of Crops Incorporating Transgenic Technology in Modern Agriculture (FACTT). In spite of this broad title, FACTT actually focused on comparing yield performance of Plant Genetic Systems (PGS) transgenic hybrid oilseed rape and conventional varieties and hybrids. PGS and Hoechst (AgrEvo) (both now part of Bayer CropScience) were centrally involved. However, the results were unimpressive and PGS oilseed rape failed to outperform the best conventional and hybrid varieties tested.

In the spring of 1997 the European Commission decided to approve a variety of transgenic maize produced by Novartis (now Syngenta). This decision was challenged by 13 out of 15 member states, but to little avail because procedures demand a unanimous ruling to overturn a Commission decision. Meanwhile, the European Parliament voted resoundingly for a resolution condemning the Commission for 'a lack of responsibility' in approving the maize, which contains a functional antibiotic resistance gene.

The pro-biotechnology stance of the European Commission is partly due to the lobbying of EuropaBio, the self-styled 'voice of the European biotechnology sector' which has been remarkably successful in convincing the Commission of the desirability of supporting biotechnology (see pp. 59–60). Lobbyists from EuropaBio regularly meet with Commissioners and organise dinner debates for MEPs, civil servants and academics.[25] According to the PR firm Burson–Marsteller, a main adviser for Europa-Bio's lobby strategy, EuropaBio has an 'indispensable direct role in the policy-making process'.[26]

If EuropaBio subtly influences the European Commission agenda, a more direct influence on the European Union came in 1997 at the negotiations on the European Directive on the Protection of

Biotechnological Inventions – nicknamed, among other things, the Life Patent Directive. The Genetic Interest Group, assisted by SmithKlineBeecham, encouraged wheelchair users to demonstrate in favour of the directive by claiming that new drugs would not be developed unless patents were allowed on human genes.[27] The corporations used emotions aroused around human genetics to win the right to patent plants and plant genes. The Directive was accepted in July 1998, although the Dutch and other EU governments challenged this decision at the European Court of Justice. Their challenge was dismissed in late 2001, but by mid-2003 eight EU states had still not implemented the directive.

Tensions between Europe and the US

Tensions are high between the US and the EU with regard to US exports of GM crops and foods. There is a constant background menace of trade wars and sanctions if Europe fails to open up its markets. At times it appears that the US and its farming bodies realise that the EU block on GM food and increasing resistance to GM feed are not fuelled by economic protectionism but by consumer demands. The US government and biotech corporations have been leaning hard on European governments and regulators to address the problem. As a result, in May 2000 then US President Bill Clinton and the European Commission President Romano Prodi agreed to establish a new transatlantic high-level EU–US Biotechnology Consultative Forum to 'review and assess the benefits and risks of biotechnology and prepare a report on these issues for the December US–European Union Summit'.[28] The group was made up of 20 experts, including Norman Borlaug (see pp. 72–3). Published on 18 December 2000, the report called, amongst other things, for the precautionary approach (not the precautionary principle) on biosafety and food safety. It also stated that 'There is a lack of substantial scientific data and evidence, often [presented] more as personal interpretations disguised as scientifically validated statements.'[29]

Dr Michael J. Phillips, executive director of BIO, said that his organisation was 'heartened to see support for content-based labelling regulations, rather than process-based. These reflect the current regulations enforced by the US Food and Drug Administration.' He added that BIO was 'very optimistic that this report will be instrumental in ending the European moratorium on approval of crops and foods enhanced through biotechnology'.[30] Tensions have not subsided and in early 2003 the US threat of bringing trade sanctions against Europe through the WTO began to loom again, fuelled by the GM food aid issue. On 9 January US Trade Representative Robert Zoellick called the European view 'Luddite'. He said he found it immoral that Africans were not supplied with food because people had invented fears about biotechnology. In response, European Development Commissioner Poul Nielson proposed a deal to the US: 'The deal would be this: if the Americans would stop lying about us, we would stop telling the truth about them. This is a proposal for normalising the discussion.' [31]

In May 2003 the US challenged the EU over GMOs at the WTO, citing the moratorium on approvals between 1998 and 2002. However, the US is equally opposed to the new legislation, especially that on traceability and labelling currently being developed within the EU and intended to end the moratorium.

EU public still against GM crops

Opposition to GM crops and foods in Europe has been strong ever since RoundUp Ready soy was first pushed on to the market in 1996. Opinion polls continue to show that the public objects to GM. At the end of 2001, the European Commission published the results of a Eurobarometer survey on 'Science and Society', including a section on GMOs. In the survey:

- 94.6 per cent say they have the right to choose about GM foods;
- 79.9 per cent don't want this type of food;
- 59.4 per cent say GMOs could have negative effects on the environment.

Furthermore, Eurobarometer says that – contrary to responses towards other areas of science – the knowledge/education factor does not make citizens more favourable towards GMOs.

> 'People interviewed could have a high level of knowledge and still believe that biotechnologies should be subject to more control and demand more safety studies, etc. In this case, information is not enough and could even be counterproductive.'[32]

7.4 Central and Eastern Europe: a corporate paradise

Foxes guarding the henhouse

> *The situation in CEE–NIS [Central and Eastern Europe – Newly Independent States of the former Soviet Union] is very diverse between countries in the region, with Hungary having a relatively well-controlled and transparent regulatory system, while in some secondround EU accession countries, such as Bulgaria and Romania, there is no government control on releases of GMOs. Indeed, both countries are already growing GM crops commercially and becoming a source of GMO contamination of the entire region.*
>
> Iza Kruszewska, June 2001.[33]

This region promises great profits for the corporations because agriculture is still a major part of the economy and there are millions of farmers. However, there is still little public awareness of GM in Eastern Europe and the Newly Independent States (former USSR). Moreover, the public has very little access to information and there is little monitoring of GM food in the region. Corporate double standards reflect the differences between the EU countries and further east. While Tesco and Unilever are eager to reassure consumers in the EU about the absence of GM in their products, in South-east Europe (the Balkans) they have no such scruples because they have not experienced the necessary pressure, and evidently do not feel bound to act without it.

In the same way the corporations, notably Monsanto and Pioneer Hi-Bred International (now owned by DuPont) have exploited the lack of regulation and public awareness in Eastern Europe and the Newly Independent States (NIS) in order to promote the widespread use of genetically engineered crops.

EU accession is creating its own dynamics. The countries involved in the first round of accession (Poland, the Czech Republic, Slovakia, Hungary, Slovenia, Lithuania, Latvia, Estonia) are harmonising their legislations with EU directives. Several of them have superior requirements for public participation to most current EU members, because they are parties to the Århus Convention.

Newly independent states (NIS) of the former Soviet Union

The NIS is the 'Wild East' for biotech corporations. The lack of official and public awareness of the problems of GMOs means there is a policy vacuum and a complete absence of biosafety legislation in almost all the countries of the region. Although Russia does have some GMO provisions scattered among several regulations, they are piecemeal and the means and political will to enforce them are lacking. This creates a haven for biotech corporations.

The Ukraine

> *Foreign companies are exploiting the very poor economic situation and the absence of instruments of control in the Ukraine.*[34]
>
> Yuri Samoilenko, Ukrainian parliamentarian, Chairperson of the Environment Committee

In 1997 Monsanto first imported GM Bt potatoes to the Ukraine for trials at state breeding stations and collective farms. After two years of field trials, Monsanto and a Canadian company, Solanum PEI, held a press conference in Kiev to announce their intention to establish seed production, timed to coincide with the visit of the Canadian prime minister. This was Monsanto's way of putting pressure on the Ukrainian authorities to register their potatoes for commercialisation. However, the Ukrainian media had picked up on the controversy raging across Europe and the Minister of Health refused to certify transgenic potatoes for human consumption. Without this approval, they were advised to destroy the 1998 harvest of seed potatoes. Rather than being destroyed, however, they were crushed and covered in compost, so failing to comply with government rules. In March 2000 Monsanto once again tried to register their GM NewLeaf potatoes with the Ministry of Health – and once again they failed.

However, according to the Ukraine Green dossier, Monsanto's potatoes have continued to be grown across the country, without public awareness, labelling or government control.[35]

The Citizens' Network for Foreign Affairs (CNFA, see pp. 126–9) –which despite its name is a front for US agribusiness – works closely with the Ukrainian government. Their representative collaborated with the Ukrainian Ministry of the Environment in 1998 to prepare weak and belated legislation on GMOs and to define the responsibilities of different ministries, as well as co-organising a conference on regulating biotechnology with the Environment Ministry.

An extremely permissive draft biosafety law, lacking any rights to public information or participation in decision making on GMOs, was presented to Parliament in January 2001. NGOs managed to thwart the acceptance of this draft by preparing a petition addressed to Parliament. Several NGOs, including Eko-Pravo (Eco-Law) then drafted a new law but there was no time for it to go through Parliament. Another government draft almost identical to the one presented in 2001 was put forward in October 2002 and was adopted by the Ukrainian Parliament in November 2002.

In December 2002 it was announced that the US Large Scale Biology Corporation (LSBC) and the German company Icon Genetics would develop GM pharma-plants to express vaccines and therapeutic proteins in the Ukraine. It seems likely that the plants in question would be wheat and oilseed rape (canola). According to the press release from LSBC, Ukraine's government is undertaking this project to develop medicines for domestic use in order to avoid dependence on imports.[36] Experience in the US with ProdiGene's pharma-crops suggests that there is likely to be serious contamination through cross-pollination and lack of segregation of seed or grain in the future with unforeseeable consequences (see Chapter 4, especially pp. 95–6).

Georgia

Georgia has also experienced the Monsanto Bt potato. This time the US organisation involved was the Agricultural Cooperative Development Inter-national (ACDI/VOCA),[37] promoting US agricultural products and market opportunities for US agribusiness. It was financed in part by USAID. The seed potatoes came from the US and there was no monitoring of the impacts on pests. The crop basically failed through the potato not being adapted to local conditions, but no compensation was paid and farmers say they are still in debt.

Russia

Like other countries in the region, Russia has had little public debate on the issues surrounding GM, although there were protests across the country in April 2002 according to the Socio-Ecologic Union.[38] Russia, which received the Colorado beetle via US food aid following the Second World War, could have Bt potatoes designed to combat it by mid-2005. Monsanto is working with the Center of Bioengineering at the Russian Academy of Sciences and providing funds to insert its technology into three Russian varieties of potato. At the press conference announcing these developments, the US Ambassador to Russia advised Russia not to regulate the technology 'to hinder the sector's development'.[39]

South-East Europe – the Balkans region[40]

The Balkans region includes Yugoslavia (Montenegro and Serbia), the former Yugoslavia (Slovenia, Croatia, Bosnia and Herzegovina, Macedonia), Bulgaria and Romania. Government policy on GMOs is extremely diverse in this region, with some countries having very restrictive GM policies (Slovenia and Croatia) and others (Romania and Bulgaria) already growing GM crops commercially.

Bulgaria

In 1999, Bulgarian farmers harvested the first crop of GM herbicide-tolerant maize. Most of this maize passed unlabelled into animal feed and thus into the food chain. Whilst the official line was that Bulgaria had only undertaken field trials in GM maize and wheat, the seed catalogues for the year 2000 from Pioneer and Monsanto were already advertising GM varieties of maize. Monsanto's GM maize was grown on 12,000 hectares and in 2000 Monsanto expected this area to increase to 25,000 hectares. In 2001, the same area was approved for growing GM maize, once again without any controls.

In 1996, Bulgaria became the first country in Eastern Europe to establish a regulation, based on a 1958 seed law (thus bypassing Parliament) allowing a Council for the Safe Use of GM Higher Plants to grant permits independently of the government for field trials, commercial cultivation, and import and export of GM plants, seeds and planting material. A register of releases is kept but this is not available to the general public, as it is considered an administrative secret.

On the Council are various government officials and scientists from research institutes. A key figure is Professor Atanas Atanassov, the Executive Secretary of the Council. He gives permits to companies, and his Institute for Genetic Engineering (recently renamed AgroBioInstitute) in Kostinbrod undertakes projects for Monsanto and Pioneer. During the mid-1990s, the Institute carried out extensive field trials of virus- and bacteria-resistant tobacco and transgenic alfalfa. It is not clear what has happened to these trials. This kind of conflict of interest is common across the region. Bulgaria has an export market in maize derivatives and fodder. The lack of segregation and labelling poses a real threat to this export market as well as to internal consumer rights and the Bulgarian environment. In June 2000 Parliament withdrew all state financing of research and development of GM tobacco and vines, fearing for these export markets.[41]

Why was Bulgaria targeted by the corporations? Countries in the first round of EU accession, such as Poland and Hungary, were protected from the worst corporate excesses by the fact that they would be expected to harmonise their regulations with those of the EU. Bulgaria and Romania, by contrast, are unlikely to join the EU until 2007 at the earliest. While Bulgaria could boast of being the first country in Central and Eastern Europe to establish regulations for biosafety of GM higher plants,[42] this was probably exactly what biotech corporations needed. It gave them the legal basis for starting field trials of transgenic varieties of plants – the first step to commercialisation. As already noted, Bulgaria was also one of the first countries to ratify the Biosafety Protocol, which was easy because (according to its own laws) it merely required a presidential signature, whereas most countries have first to develop legislation to transfer the provisions to national level.

Romania

Monsanto's commercial cultivation of RR soybeans in Romania already covered 15,000 hectares in 1999, some 20 per cent of the total area under soybeans.[43] In January 2000 Romania introduced a government ordinance on the development, testing, use and marketing of GMOs and their products, creating a National Biosafety Commission with the power to grant permits for the release of GMOs. This enabled Monsanto to legalise its operations and Monsanto was quoted as saying that 30,000 hectares – nearly half of all soybeans grown in Romania – were genetically engineered.[44] For 2002 the area was said to have

expanded to 45,000 hectares, according to ISAAA's draft figures for that year.

Since 1997, US seed companies have tested and registered at least six GM corn and one GM soybean variety in Romania. Until the GMO law was introduced, testing was allowed using the provisions of the law for basic seeds.[45] Romania is alleged to be a major source of smuggled seed to the rest of the region.

Croatia

Following a resolution by the Croatian Parliament in 1998, four government ministries agreed the text of a draft law in June 2001 to ban the import, production, marketing and use of GMOs in Croatia pending the implementation of legislation. Later in June, eight ministries decided that Croatia should advertise itself as GMO-free: welcoming billboards were placed at the border promising natural food and a healthy vacation, and a firm line through the letters 'GMO' drove the message home.

It was not long before this drew the attention of the US. A leaked memo of November 2001 from the US embassy in Croatia asked if Croatia had notified the WTO of its intended law, and warned that it must comply with WTO rules. US NGOs were alerted and protested jointly with Croatians. At a roundtable meeting in Zagreb in December 2001, government and NGO representatives voiced their support for the proposed ban and highlighted the potential advantages to Croatia of remaining GM-free and growing organic food. The Environment Minister said: 'Biodiversity makes Croatia unique in Europe, and this is our comparative advantage.'

A tour by North American farmers opposed to GM was organised for January 2002. The day before it began, the US embassy in Vienna held a press conference at which they reminded Croatia of its obligations under the WTO. They also stated that GM crops had been rigorously tested and that the US had experienced no problems over the seven years that GM products had been in its markets. GM crops were 'substantially equivalent' to their non-GM counterparts, so labelling was unnecessary. Finally, planting GM crops reduced chemical inputs and increased yields. Despite this pressure, however, a public opinion poll in January showed 80 per cent of Croatians in favour of the proposed ban.

Yet the proposed legislation to ban GMOs has since been dropped and new laws intended to harmonise with the EU directives are planned. Croatia remains vulnerable because it lacks biosafety provisions.

Yugoslavia (Montenegro and Serbia)

Yugoslavia has the most effective GMO legislation in its region, despite a decade involving three wars in the 1990s. Imports of whole GM grains were forbidden from January 2001 and a GMO law was passed in May 2001, which is backed up by three laboratories capable of testing material.

Vojvodina province, bordering Hungary, Croatia and Romania, is an important centre for seed breeding and production of soy, maize, sunflower and wheat. Seed is sent to Russia, Eastern Europe, India, Italy and France. The Institute for Food and Vegetable Crops (IFVC) is based in Novi Sad in the province.

Corporate influence is being felt in a number of ways. Monsanto and Pioneer are both doing field trials of herbicide-resistant maize (glyphosate and glufosinate respectively). They are working with centres where two of Yugoslavia's three testing laboratories are based, the IFVC and the Institute for Maize Research, which could lead to conflicts of interest. Monsanto has access to locally adapted varieties of maize in which to insert the RoundUp gene. The IFVC seems to be trying both to produce GM-free seed and soy products and to work with Monsanto and Pioneer on GM, with obvious implications for contamination, including cross-pollination, leading to multiple resistance. It is also a member of ASSINSEL, the International Association of Plant Breeders for the Protection of Plant Varieties, founded in 1938, which focuses on IPRs for plant varieties. Its members, apart from IFVC, are all developed-country institutions and include a number of the major corporations.

The two companies have also become involved in the biosafety process. When the GMO law was passed, a biosafety committee was established, composed entirely of scientists, mostly crop breeders, without a single geneticist. There are no members of the public or experts from other disciplines. It seems that most of these scientists were invited to the US to visit the laboratories of Pioneer and Monsanto. The president of the committee is from the IFVC, which is already cooperating with Monsanto and Pioneer.[46]

GM contamination has already been discovered in Vojvodina. In 1997, Sojaprotein, which exports soya derivatives to the EU for companies such as Nestlé and Coca-Cola, discovered contamination with RoundUp Ready genes, in spite of war and economic sanctions. Since then, small areas of cultivation with RoundUp Ready soybeans have been discovered every year somewhere in the province. The likely source of the illegal seed appears to be Romania. The Yugoslav authorities freely admit that they are unable to prevent crossborder smuggling.

Another source of contamination is GM food aid. Yugoslavia received 50,000 tonnes of soyameal in 2001, following a serious drought which caused a shortage of animal feed. Since then it has refused the offer of donations of GM maize. Kosovo, however, which has received a great deal of aid over the years, is another likely source of GM smuggling.

EU and Eastern Europe

The date of accession of 10 new member states [47] to the EU has now been set for May 2004. The EU may try to use the accession process for weakening policy on GMOs. For example, GMOs that have not been approved in the EU but are found in accession countries could receive *de facto* approval. The European Commission may attempt to weaken any provisions in the laws of the new members that go further than those in the EU. The worst possible outcome would be if the accession states provided an entry point into the EU as a whole for unlabelled GM soybeans and maize imported illegally across their vulnerable borders with non-EU countries.

At present, accession countries are making no effort to influence the EU legislative process on GMOs. The EU is currently preparing several pieces of GMO legislation, whose provisions the new member states will have to enforce from the day of accession. The legislation includes traceability/ labelling and novel foods/feeds, while internal discussions continue on coexistence and liability.

All the accession countries now have GMO laws that require authorisation and labelling of GM foods. Indeed two countries, Slovenia and Slovakia, have already implemented the revised Directive 2001/18/EC on deliberate release, ahead of almost all existing member states except the UK and Denmark.

In several cases, provisions in the GMO laws are stronger than those in the EU, especially with regard to public access to information and participation in decision making on GMOs – an emphasis driven by those countries' ratification of the Århus Convention.[48] Almost all countries include representatives of environmental and consumer NGOs on their national biosafety commissions. Poland's GMO law, passed in the summer of 2001, has a provision on liability that in certain cases enables the Environment Ministry to demand some insurance – this could take the form of a deposit, a bank guarantee or an insurance policy – before granting a permit for releasing GMOs. However, civil society in most of these countries is not yet accustomed to active participation in legislative processes.

The biggest problem in accession countries is implementation. With the exception of Hungary and the Czech Republic, all the countries lack the institutional capacity – certified laboratories, for example – to enable the enforcement of the GMO authorisation and labelling requirements.

GM-free organic zone planned

The three smallest states in the region, Croatia and the accession states of aid over the years, is another likely source of GM smuggling. Slovakia and Slovenia, have attracted the least interest from the large companies. One of these states, Slovenia, is working with Carinthia (Austria), and Friuli–Venezia–Giulia (Italy) to establish a GM-free organic agriculture zone. They hope to support and develop the particular specialities of the region, ensuring livelihoods for local farmers, and encouraging eco-holidaymakers. Slovenia hopes to be fully integrated into the project once it accedes to the EU in 2004.[49]

Notes

1 The Agriculture and Environment Biotechnology Commission (AEBC) is appointed by the UK government to advise on genetic engineering issues.

2 Available from www.genewatch.org

3 Reuters, 'Sri Lanka's GM Food Ban Delayed Indefinitely', *Times of India*, 3 September 2001. <http://timesofindia.indiatimes.com/articleshow.asp?art_id=869444898>; Inter Press Service, 'Lobbying Puts Ban on GE Food at Risk', 24 August 2001.

4 Larry Bohlen, Friends of the Earth International, letter to support Sri Lanka's GE food ban. lsinger@foe.org; July 2001

5 Muddassir Rizvi, 'Monsanto Fiddles with Plant Protection Act', Inter Press Service, 31 August 1999. http://www.twnside.org.sg/title/fiddle-cn.htm

6 *Ibid*.

7 Letter from Dr A. Rehman Khan to Chief of the Seed Certification Department, 6 August 1999, quoted in *ibid*.

8 Hartmut Meyer, 'Precise Precaution versus Sloppy Science', *Bulletin of Science, Technology and Society* 19, 2 (1999): 91–5.

9 Responses included those by Eric Millstone, Eric Brunner and Sue Mayer; Ho and Steinbrecher.

10 http://www.worldfoodscience.org/vol1_2/FAO.pdf

11 John Vidal, 'GM Lobby Takes Root in Bush's Cabinet: Biotech Firms Could Have Undue Influence', *Guardian*, 1 February 2001.

12 www.usda.gov

13 'Outgoing Secretary Says Agency's Top Issue Is Genetically Modified Food', *St Louis Post–Dispatch*, 25 January 2001.

14 Ann Veneman, biographical sketch: www.usda.gov/agencies/gallery/veneman.htm

15 APHIS: Animal and Plant Health Inspection Service of USDA.

16 FDA website: <http://www.fda.gov>; mission statement: www.fda.gov/opacom/morechoices/mission.html

17 Uncovered by the Edmonds Institute, US. Longer list available.

18 www.cfsan.fda.gov/~acrobat2/bnfL034.pdf

19 Kristi Coale, 'Anti-GE Lawsuit against FDA Has Clinton Administration Worried', 12 January 2000. <http://www.salon.com/news/feature/2000/01/12/food> or

<http://www.purefood.org/ge/antigesuit.cfm>. Kristi Coale is an associate with the San Francisco-based Center for Investigative Reporting. Her work for this story has been supported through the Center's Fund for Investigative Reporting on the Environment.

[20] Belinda Martineau, First Fruit: the Creation of the Flavr Savr Tomato and the Birth of Biotech Foods, McGraw-Hill Professional, New York, 2001, pp. 231–2.

[21] The Center for Food Safety, 'Landmark Law Suit Challenges', press release, 27 May 1998. http://www.centerforfoodsafety.org/li/GEpress1.html

[22] 'Statement of Policy: Foods Derived From New Plant Varieties', *Federal Register*, 57, 104 (29 May 1992): 22991, as quoted by Steven M. Druker, executive director of the Alliance for Bio-Integrity, in the presentation for the FDA public meeting, Washington, DC, 30 November 1999, by the Panel on Scientific, Safety, and Regulatory Issues. http://www.linkny.com/~civitas/page140.html.

[23] The member states of the EU in 2002 were: Austria, Belgium, Denmark, Finland, France, Germany, Great Britain, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden.

[24] 'Europe Inc.', a report by Corporate Europe Observatory, ceo@xs4all.nl, 1998.

[25] *Ibid.*

[26] Adam Ma'anit, 'Exposing the Biotech Lobby', *Link* (Friends of the Earth International magazine), 93 (April/June 2000). www.foei.org/publications/link/93/e93biotechlobby.html

[27] George Monbiot, Captive State: the Corporate Takeover of Britain, London: Macmillan, 2000.

[28] Environmental News Service, 'Europe, US Aim to Resolve Differences on Genetically Engineered Foods', 31 May 2000. http://ens.lycos.com/ens/may2000/2000L-05-31-02.html See also archive: http://www.gene.ch/

[29] The full report is available at: http://europa.eu.int/comm/dgs/external_relations/index_en.htm; Download report at: http://europa.eu.int/comm/external_relations/us/biotech/report.pdf

[30] Julianne Johnston, 'US/EU Biotech Report Contains Positive Consensus', Agweb News, 19 December 2000. See archive: http://www.gene.ch/genet.html

[31] Reuters, 'EU's Nielson Blasts US "Lies" in GM Food Row', 22 January 2003. Archive: http://www.gene.ch/genet.html

[32] http://europa.eu.int/comm/research/press/2001/pr0612en.html

[33] Iza Kruszewska, 'Corporate Influence in Central and Eastern Europe in the Field of Agricultural Biotechnology', report, June 2001.

[34] Quoted in *ibid*.

[35] Tanja Topchiy, 'Ukraine's Cabinet of Ministers Forms a Scientific Body to Support Biotechnology', Green Dossier, Ukraine, 25 December 2001.

[36] Large Scale Biology Corporation, US ,'Ukraine to Develop Biopharmaceuticals in Living Plants for Regional Needs in Pact with USA's Large Scale Biology Corp. and Germany's Icon Genetics AG', press release, 3 December 2002. http://www.lsbc.com/wt/tert_middle.php?page_name=pr_1038873460&lm=1&sec_page=press_release_archive&tert_page=pr_1038873460&press=ln& level=3

[37] ACDI combines the profits of US agribusiness and banks with a political agenda and aid. Its members include US agricultural banks and seed companies. ACDI describes itself as a 'private, non-profit international development organisation providing high-quality expertise at the request of agribusinesses, cooperatives and private and government agencies abroad'. See: www.acdivoca.org

[38] SEU Campaign for Biosafety, 'Simultaneous Action Against GMOs Held Across Russia', press release, 9 April 2002. seupress@seu.ru

[39] Sarah Karush, 'Russian Scientists, US-based Monsanto Develop Beetle-resistant Potato Varieties', Associated Press, 4 June 2002.

[40] Additional information on the whole region can be found in three Northern Alliance for Sustainability (ANPED) briefings prepared by Iza Kruszewska for ICCP-3 (3rd Meeting of the Intergovernmental Committee for the Cartagena Protocol on Biosafety) (The Hague, 22–26 April 2002): 'The Urgent Need for Biosafety Frameworks in South-East Europe: Bulgaria, Croatia and Yugoslavia'; 'Biosafety Policy and Practice in Yugoslavia'; 'Croatia's Attempts to Introduce a Moratorium on GMOs'.

[41] Iza Kruszewska, 'Bulgaria: Torn between North American Seed Producers and EU Consumers', *Biotechnology and Development Monitor*, 44–45 (March 2001).

[42] Atanas Atanassov (Institute of Genetic Engineering, Kostinbrod), 'Biosafety and Regulation of GMOs in Bulgaria', in Proceedings of the Fifth Central and Eastern European Conference for Regional and International Cooperation on Safety in Biotechnology, Sofia, 12–14 December 1999.

[43] Holly Higgins (US Embassy), 'Romania – Planting Seeds: Romanian Legislation for GMO Seeds', Global Agriculture Information Network (GAIN) Report No. RO0005, US Department of Agriculture, Foreign Agricultural Service, 28 February 2000. http://www.fas.usda.gov/scripts/gd.asp?ID=25667501)

[44] Costin Motroasa, 'Watchdogs Monitor GMO', *Bucharest Business Week*, 4, 30 (4 September 2000). http://www.bbw.ro/article.cfm?sec=headlines&art_id=619&vol=4&nr=30

[45] *Ibid.*; Higgins, 'Romania – Planting Seeds'.

[46] Interview with Professor Miodrag Dimitrijevic, Department of Genetics, Faculty of Agriculture, University of Novi Sad.

[47] The 10 EU candidates are: Poland, Czech Republic, Slovakia, Hungary, Slovenia, Lithuania, Latvia, Estonia (from CEE), Cyprus and Malta.

[48] United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation and Access to Justice in Environmental Matters, signed in Århus, Denmark, June 1998 and ratified in October 2001.

[49] Elisabeth Steiner, 'GE-free Organic Zone', *Der Standard*, Austria, 25 October 2002. German text at http://derstandard.at/Textversion/Spezial/20021025_1/271.htm