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## Hungary

### Agricultural Biotechnology Annual

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**Report Highlights:**

Hungary is one of the strongest opponents of agricultural biotechnology in the European Union (EU) promoting its position to initiate a joint alliance for genetically engineered (GE)-free agriculture, for GE-free crops, livestock and food production and feeding. Maintaining the country's GE-free status is one of the main sticking points in negotiations on any free trade agreements. At the same time, many plant breeding and scientific institutions in Hungary see the necessity and the potential of innovative biotechnologies to have a positive impact on the economy and sustainability.

## **Executive Summary**

Hungary does not produce any genetically engineered crops, animals, or cloned livestock. The Government has an opposing stance to the use of any kind of GE products in agriculture. In this respect, all political parties in Hungary hold an anti-GE position.

The number of biotechnology companies is increasing. Several investments are at the country's biotech plants. Mainly medical (red) biotechnology is the prosperous sector while agricultural (green) biotechnology is affected by anti-GE policy and a constitutional ban on GE crop cultivation. At the same time, many plant breeding and scientific institutions in Hungary see the necessity and the potential of innovative biotechnologies, like gene editing, to have a positive impact on the economy and sustainability. In addition, biotechnology has comparative advantages in Hungary and plays a privileged role in developing knowledge bases according to the National Research and Development and Innovation Strategy.

Hungary's GE-free status is often regarded as a possible marketing advantage for the country because EU member states are primary destinations for planting seed and grain exports. In accordance with the Government policy, Hungary developed its own system on labeling of GE-free food and feed since there are no uniform rules and regulations on it within the EU. Maintaining Hungary's GE-free status is one of the main sticking points in negotiations on free trade agreements (FTAs). Nationalist and green opposition parties, as well as green organizations were lobbying the Government not to sign free trade agreements with Canada and the United States. In their view, FTAs allow the spread of GE organisms and products and put the environment, health, and safety protection at risk.

Hungary demanded to keep genetically-engineered organisms out of all part of its territory under the directive (EU) 2015/412. In this respect, imports and use of GE soybean meal in large quantities (500-600 thousand MT/year) is considered controversial. This fact leads to political intentions to reduce the import dependence of livestock sector. Despite the efforts, only 15-20 percent of protein feed derives from domestic sources. Hungary's non-GE soybean production would be able to satisfy only 50 percent of annual demand by 2020, according to the most optimistic scenarios.

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## **CHAPTER 1: PLANT BIOTECHNOLOGY**

### **PART A: PRODUCTION AND TRADE**

#### **a) PRODUCT DEVELOPMENT**

The number of biotechnology companies is increasing in Hungary and several investments are at the country's biotech plants. In particular, significant results were achieved in nanotechnology, molecular chemistry and biotechnology services, mainly in medical biotechnology.

Red biotechnology is a prosperous sector and market players are seeking opportunities to intensify their activity in the international arena. Asian countries could be good partners for Hungary for business incubators and hubs. There are ongoing negotiations with Singapore and South Korea in order to build partnership in new, innovative areas of health economy, such as medical information technology and red biotechnology. The renewal of bilateral relations with Cuba also creates opportunities for cooperation in the food, chemical and biotechnology sectors.

Hungarian biotechnology companies, like Richter GDRB.BU, which is one of the largest drug makers in the country, have expanded their presence into the major European markets. This year, Richter acquired a Swiss-based biotech company, Finox Holding and decided on a \$55 million biotechnology plant expansion in Debrecen (eastern Hungary). The project is set to be completed by 2018. Hungary's Government would support the investment with \$18.25 million grant.

Regarding agricultural biotechnology, there is no information that any kind of GE plants are under development in the country to be commercialized in the next couple of years. This is due to the anti-GE policy of the Hungarian Government and a ban on GE crop cultivation. Basic research for biotechnology is mostly carried out by research institutes and universities especially to enhance plant resistance against viruses and other pathogens, and to study miRNAs controlling fruit and seed developments. Others topics include environmental, food and feed safety studies. Since achievable results with traditional breeding techniques are limited, less predictable and could be more expensive, developer companies and institutes have to balance whether genetic engineering, innovative biotechnologies or traditional breeding methods are the right, effective and profitable way to improve crops. Although, there is an intense debate on and an increasing legal uncertainty of innovative biotechnologies in the EU, many plant breeding and scientific institutions in Hungary see the necessity and the potential of them to have a positive impact on the economy and sustainability.

#### **b) COMMERCIAL PRODUCTION**

No GE crops and GE seeds for sale are produced in Hungary. The country's interests were fulfilled when a vote passed in the European Parliament allowing individual member states to ban the cultivation of GE crops. "It is an especially important strategic interest for Hungary, laid down in its constitution, to ensure a "GMO" (genetically modified organism)-free agriculture", the Ministry of Agriculture stated. During the negotiations, which lasted over four years in the EU, Hungary was always urging a measure which would ensure an effective tool for imposing a ban on GE product production.

Under directive (EU) 2015/412, Hungary demanded on September 21, 2015 that all of its territory be shielded from pending applications to grow gene-altered crops in the bloc. Agricultural companies did not respond to the Hungarian request by the October 22 deadline. Monsanto expressed discontent in a

letter but filed no objection. The Agriculture Ministry described the development as a victory over the strong lobby of multinational companies. Measures of Directive (EU) 2015/412 have been transposed into national law by the amendment of the Act No. XXVII of 1998 on Biotechnology Activities.

#### c) EXPORTS

There is no commercial production of GE crops in Hungary and the country does not export GE products. Hungary's GE-free status is often regarded as a possible marketing advantage because EU countries are primary destinations for planting seed and grain exports. [Hungary stood by commitment to GE-free Europe](#) at several fora and [started an initiative](#) to achieve this in 2015. Since then, 11 EU countries and 6 states from outside the EU have joined the "GMO-Free" program.

#### d) IMPORTS

Hungary's imports of biotech crops can be considered controversial in terms of its asseverated GE-free status. Hungary has a structural shortage of protein for animal feed. To meet demands, the country imports large quantities of soybean meal. The Hungarian livestock sector uses 500-700 thousand tons of soybean meal annually, according to the official data, of which only 15-20 percent derives from domestic sources. The other 90 percent is imported mainly from Brazil and Argentina as trans-shipped product from other EU countries, especially from Slovenia, Germany, the Netherlands and Italy. This makes farmers and feed producers vulnerable to the external market movements. According to estimates, about 90 percent of the imported soybean meal is GE. Its replacement with conventional, non-GE products would result in an extra cost of \$29 million annually.

#### e) FOOD AID

Hungary is not a food aid recipient country and its role as a supplier in international food aid programs is not significant. Occasionally, food aid consignments (processed, canned foods) were sent to the Hungarian population of the sub-Carpathian region of Ukraine. This aid did not involve any kind of GE food.

### PART B: POLICY

#### a) REGULATORY FRAMEWORK

In Hungary, the Ministry of Agriculture takes the lead and makes decisions on biotech issues regulating GE crop cultivation, trade and processing into food or feed. The National Food Chain Safety Office (NFCSO) is the top government organization handling the technical aspects of GE crops such as inspection, testing and registering plant varieties. Nevertheless, NFCSO will discontinue on January 1, 2017 according to the Government Resolution No. 1312/2016. Government offices in the capital and counties will take over its main functions.

In 2006, Hungary developed its GE-free strategy with an agreement of all the five parliamentary parties at the time [Parliamentary Resolution No. 53/2006]. Since then, the country had adopted a new constitution (Basic Law) on April 25, 2011, which entered into force on January 1, 2012 and declared the need for Hungary's GE-free agriculture:

"Constitution, Chapter 'Freedom and Responsibility' Article XX (1) All have the right to physical and spiritual health. (2) Hungary promotes the realization of the rights as stated in paragraph (1) by

operating an agriculture free of genetically modified organisms, by providing access to healthy food and drinking water, by organizing labor safety and health care, by subsidizing sports and regular physical training and by ensuring protection of the environment.”

The [Act No. LIII of 1996 on nature conservation](#) was the first law in Hungary to include provisions on GE organisms. Paragraph 9 of the Act declared that creation of such organisms, conducting of experiments with them, their cultivation and importing to or exporting from the country may only occur according to certain conditions as specified by law.

The main piece of the related legislation in Hungary is the [Act No. XXVII of 1998 on Biotechnology Activities](#). It was amended several times in order to harmonize with the EU and update the rules on coexistence. The goal was to prevent the unregulated entry of GE plant varieties into production. The Act gives expanded powers to environmental, agricultural and industrial biotechnology authorities and mandates GE variety owners to cooperate with them. For direct consumption of imported food and feed containing GE materials, the Act orders the use of legal and administrative procedures corresponding to the EU rather than requiring additional tests.

Hungary’s legislation on GE crops and their products is fully harmonized with the EU, transposing directives into the national law. EU regulations pertaining to GE products are directly applied. The list of related national legislation is available on a [government website](#) with the title: “Together for a GMO-free agriculture”.

Hungary developed its own system on labeling of GE-free food and feed since there are no uniform rules and regulation within the EU. The Decree No. 61/2016 of the Ministry of Agriculture on labeling GE-free products came into force on September 20, 2016. It provides the possibility for special labeling of GE-free food and feed and their products, as well as meat, fish, eggs and milk from livestock fed on certified GE-free feed, and GE-free honey.

Besides the above mentioned legislative work, Hungary’s soybean meal import dependence led to political intentions to make measures that would reduce the exposure of the livestock sector to the world market price and the U.S. dollar exchange rate fluctuation. The goal is to reduce the volume of imports and the use of GE soybean meal in feeding. According to the Ministry of Agriculture, the implementation of these objectives is supported by the EU’s Common Agricultural Policy. Soybean producers can get about €200 extra support per hectare annually, over the single area payments. Irrigation development programs could also help the production and result in higher yields.

## b) APPROVALS

Although approvals are formally made by the Ministry of Agriculture, the [Gene Technology Advisory Committee \(in Hungarian\)](#) evaluates biotech activities and products in Hungary. This body was set up in accordance with the Act on Biotechnology Activities. It provides professional opinions on applications submitted to gene technology authorities and makes recommendations on their acceptance or refusal. The members of the Advisory Committee are nominated by the Hungarian Academy of Sciences, Ministries and non-governmental organizations. Civil servants, public officers (government employees) are not members of this body. Ministries typically nominated scientists or experts from think tanks.

In Hungary, there are no GE plants approved for cultivation and it is constitutionally prohibited now. Data on authorized experimental releases can be found on the [Hungarian Biosafety Website](#).

#### c) STACKED EVENT or PYRAMIDED EVENT APPROVALS

Hungary follows the European Food Safety Authority's guidelines and the EU's legislation concerning stacked events.

#### d) FIELD TESTING

A limited number of field experiments were approved in Hungary due to the domestic operative rules on GE crops. Tests were mainly conducted in maize and in some cases in tobacco, potato, sugar beet, wheat or barley only with scientific purposes, without commercialization. Since 2012, GE plant field tests have not been approved according to the [official database](#).

#### e) INNOVATIVE BIOTECHNOLOGIES

Among the EU countries, there is no consensus on the use of genetic engineering in agriculture. It resulted in a hostile climate against green biotechnology in several member states. The lack of information or effective dissemination of scientific results and evidences led to fears, oppositions and slow decisions in legislation. That is why many of the European scientific communities are emphasizing the significance and potential of new breeding techniques to engage the European decision makers to support innovative biotechnologies. Being committed to these goals, the [Centre for Agricultural Research](#) of the [Hungarian Academy of Sciences](#) (HAS) organized an [international workshop on New Breeding Techniques](#) raising a question on the necessity of their regulation. The event took place at the [HAS in Budapest](#) (Hungary) on September 26-27, 2016 and it was also available as a [live stream](#) conference. To have a robust impact of this workshop, renowned scientists, government officials, representatives of advisory bodies, non-governmental organizations (NGOs), students, university faculty and other stakeholders were invited to the conference from Europe, in addition, animal scientists from the United States. The conference addressed the need for science based regulation for innovative biotechnologies and promoted the role of science and technology in unleashing agricultural productivity. Other key discussion points included how to communicate with policy makers and the public, the importance of these new technologies, and what they mean for food production in the future. As a conclusion of the conference, genome editing was identified as one of the key innovation potential for agriculture.

Hungary's position on GE products and research policy on green biotechnology has been criticized many times. The fact that both the [Biological Research Centre](#) and the [Centre for Agricultural Research](#) of the HAS are members of the [Federation for Innovative Agricultural Biotechnology](#) shows openness and a working relation of the Hungarian scientific life and learned society to civil organizations. Hopefully, similar approach will be expected from the Government in the future since the [National Research, Development and Innovation Office](#) also regards biotechnology as a highlighted element of knowledge base development. According to [Hungary's National Research and Development and Innovation Strategy \(2013-2020\)](#), future technologies, e.g. the so-called "converging technologies," such as biotechnology, cognitive technologies, nanotechnologies and mathematics, play a privileged role in developing knowledge bases. In addition, biotechnology is among the research & development-intensive industries with comparative advantages in Hungary.

#### f) COEXISTENCE

The Hungarian Government approved its Coexistence Regulation on November 23, 2006 (see report [HU6015](#)) by the amendment of the [Act No. XXVII of 1998 on Gene Technology Activities](#). (Chapter III). This Act, as well as the Decree No. 82/2003 (on the order of registering and supplying data as well as on the documentation which shall be enclosed in the notification regarding the gene technological activity) and the Decree No. 86/2006 (on coexistence measures on the cultivation of genetically modified, conventional and organic plants) of the Ministry of Agriculture and Rural Development prescribed the common rules of coexistence for organic, conventional and GE crop using systems. These rules determine all the conditions that are designed to prevent the uncontrolled spread of GE crops and their crossing or mixing with non-GE products. In this regard, the range of measures is quite broad. Among them, keeping buffer distance to avoid crossover with pollen drift, careful cleaning of machineries and separated storage of crops are especially highlighted.

Although Hungary legislated the national rules of coexistence, applying the law in this regard is not possible in practice. The country had used the Safeguard Clause (under Directive EC No. 2001/18) in banning the cultivation of EU authorized GE plants. Hungary constitutionally banned the cultivation of any kind of GE crops and demanded to keep GE organisms out of all part of its territory (under directive (EU) 2015/412).

#### g) LABELING

A number of GE plant varieties are approved for industrial food use and as feed in the EU, consequently in Hungary. Hungary follows the EU's labeling standards. If GE content above 0.9 percent, it must be indicated on labels. If products derive from animals fed on GE feed, it is not required to be indicated.

Since there are no uniform rules and regulation on labeling of GE-free food and feed in the EU, Hungary developed its own labeling system. The Decree No. 61/2016 of the Ministry of Agriculture on labeling GE-free products came into force on September 20, 2016. It provides special labeling of GE-free food and feed and processed products, as well as meat, fish, eggs and milk from livestock fed on certified GE-free feed and GE-free honey. The application of the "GMO-free" labeling is on a voluntary basis.

For a product to be labeled "GMO-free", it must meet the criteria that it should contain no GE organisms or parts thereof, and it must not derive from livestock fed on feed that contained GE material. This fact has to be verified by the producers. Producers and traders of food labeled as being from GE-free production are obliged to ensure the traceability of the products and the used raw materials. The law permits minimal GE content, namely traces of up to 0.1 percent, provided that it is adventitious or technically unavoidable and that the GE product has obtained marketing approval in the EU.

The "GMO-free" labeling cannot give the impression to customers that the product has special sensory and nutritional features and its effect on environment and health is better than the similar products. In addition, products that have no licensed GE version in the market cannot be labelled "GMO-free".

#### h) MONITORING AND TESTING

Since Hungary is one of the major seed exporters, genetic purity of seeds is highly important. Plant propagation materials (including seeds) go through sampling and laboratory analyses for the presence of GE traits. Official control is both on Hungarian crops and on seeds from the EU and non-EU countries.

Under the rules, third country seed import lots are subject to mandated testing for GE presence, paid for by the importers or distributors. Imported seed lots from EU member states must be accompanied by a negative GE test from an EU accredited laboratory.

Based on risk analysis, seed lots previously notified by producers or distributors are checked before sowing. Farmers can use only tested seeds which have been proven as GE-free products.

Corn is the most common target of the Government's GE testing efforts. Monitoring and testing are carried out continuously by the authorities. Based on the inspections, about 6500 hectares (ha) of cornfield were destroyed over the past years because of the so called "GMO contamination". In spring of 2016, GE traits were detected in six percent of the tested sweet corn and popcorn seed samples.

#### i) LOW LEVEL PRESENCE POLICY

Hungary, as a member state of the EU, has a zero tolerance policy for low-level presence of GE products in feed following the measures of the EU Regulation 619/2011. This regulation lays down the methods of sampling and analysis for the official control of feed as regards presence of GE materials. The EU defined "zero" with a "technical solution" level of 0.1 percent.

#### j) ADDITIONAL REGULATORY REQUIREMENTS: N/A

#### k) INTELLECTUAL PROPERTY RIGHTS

In Hungary, there is no specialized intellectual property legislation for GE products. GE crops cannot be planted commercially. In general terms, the country is against the patents on genetic materials.

Application for national plant variety protection can be filed with the [Hungarian Intellectual Property Office](#), while the application for EU plant variety right can be submitted directly to the [Community Plant Variety Office](#).

Hungary is an active participant of negotiations under the [International Union for the Protection of New Varieties of Plants](#) and the [International Convention for the Protection of New Varieties of Plants](#).

#### l) CARTAGENA PROTOCOL RATIFICATION

The Hungarian Parliament ratified the Protocol on January 13, 2004. The ratification was promulgated by the Act No. CIX of 2004 (on the publication of the Cartagena Protocol on Biosafety signed on May 24, 2000 in Nairobi) and came into force on April 12, 2004. Article 27 of the Cartagena Protocol gives the Conference of Parties a mandate to begin the development of international regulations regarding liability for damages resulted by the transboundary movement of living modified organisms and the legal redress. On October 16, 2010, the 160 party states to the Cartagena Protocol unanimously adopted the so-called Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol. In 2011, declaration of the political commitment to the Supplementary Protocol, signed on behalf of Hungary and the EU by the Hungarian Minister of Agriculture, was published as a great diplomatic success of the Hungarian EU Presidency. The publication of the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety was by the Act No. CLXXI of 2013 in Hungary.

In respect of the Convention on Biological Diversity (CBD), the Hungarian Government adopted a new [National Biodiversity Strategy 2014-2020 \(NBS\)](#) in February 2014. In order to comply with the Aichi Targets, the new NBS contains highlighted objectives such as the application of precautionary principle of releasing GE organisms into the environment to eliminate harmful effects on biological diversity (see [the fifth national CBD report](#)). The NBS characterizes Hungary's biodiversity with Strengths/Weaknesses/Opportunities/Threats analysis. The constitutionally protected GE-free agriculture was mentioned among the strengths. The incidence of GE traits in non-GE seed lots in the domestic market and the fact that MON 810 GE corn could be grown on the other side of almost 50 percent of the Hungarian border were considered weaknesses. It was mentioned as an opportunity to develop a common regional policy and GE-free strategy with the neighboring countries. Losing Hungary's GE-free status was regarded as a threat against national interests.

Hungary's National Biodiversity Strategy sets out the following measures needed between 2014 and 2020:

- Social, economic and environmental studies to provide firm basis for banning GE crop cultivation.
- Enhanced control and monitoring of presence of GE traits on arable lands along the border of Hungary,
- Setting up diplomatic agreements with neighboring countries to maintain the GE-free status of Hungary's border areas,
- Intensified control of gene technology activities,
- Domestic environmental and health impact assessments on GE organisms being under EU authorization.

Beside the NBS, Hungary's National Rural Development Strategy 2012-2020 (NRDS) aims to reverse the "unfavorable processes" in the countryside. The NRDS defines objectives and principles of Hungary's rural development policy as well as provides a framework for the implementation of relevant programs and measures. The NRDS specifically deals with biodiversity, conservation and the preservation of Hungary's GE-free status.

#### m) INTERNATIONAL TREATIES/FORA

Hungary is an active member of different intergovernmental and standard setting international organizations (e.g. Organization for Economic Co-operation and Development; World Trade Organization; Codex Alimentarius; Food and Agriculture Organization of the United Nations - International Plant Protection Convention; The European and Mediterranean Plant Protection Organization etc.). Taking part in their work, the country used to be a vocal opponent of GE crops and enforced its point both at EU and regional levels. Hungary also tries to effectively apply opportunities which derive from its regional, Central European or European role as an EU and V4 ([Visegrad Group](#)) member.

Hungary's GE-free status became a focus of public attention in the course of the negotiations on the EU-Canada Comprehensive Economic and Trade Agreement (CETA). Jobbik, Hungary's nationalist party, wanted the European Court of Justice to rule on the bloc's free trade pact with Canada, which would violate EU law – according to the Jobbik. Accusing the ruling Fidesz party of giving up Hungary's GE-free status, Jobbik stated that CETA would put the country's self-determination, environment and health and safety protection at risk.

The Deputy Ombudsman in charge of Future Generations and Green Organizations also lobbied the Government not to sign the planned free trade agreement with Canada, as in their view it holds the danger of allowing the spread of GE organisms and products. The opposition green LMP party said that CETA did not conform to Hungary's constitution and violated the principle of staying GE-free. Last September, the LMP was also calling on the Government to veto the negotiations on the Transatlantic Trade and Investment Partnership (TTIP) in order to maintain the ban on GE crops in Hungary.

The Hungarian Agricultural Minister visited Washington DC in April 2016, and had a discussion on TTIP and Hungary's GE-free status with the USDA Acting Deputy Secretary. The Minister talked about Hungary's Basic Law which laid down the country's GE-free status, and that the Government saw opportunities in not cultivating GE crops.

The above mentioned policy is also reflected in the Hungary's relationship with the European countries. For example, the Hungarian Minister of Trade and Foreign Affairs noted that both Hungary and Moldova are committed to making Europe a GE-free zone and signed a food security and agricultural cooperation agreement with the Moldovan Government in September 2016. The Hungarian Farm Minister also promoted the idea of a fully GE-free Europe in Kosovo and asked his Kosovar counterpart to support this initiative.

#### n) RELATED ISSUES

Hungarian officials highlighted that the cooperation among the European countries in assessing biotech issues can play a significant role in different sub-sectors. For example, providing livestock production with non-GE feed and reducing its exposure to and dependency on soybean meal imports became a government priority. Since the Government has been supporting soybean growers, the acreage increased to 72,000ha in 2015 from 42,000ha. In 2016, soybean planted area was 63,000ha. Hungary has about 150,000ha to grow soybean in regards to the environmental conditions and crop structure. Currently, Hungary's self-sufficiency is only 15-20 percent in soybean meals. That is why the country joined the "[Danube Soya](#)" (Donau Soja) program, a Central European cooperation initiative to stimulate the region's non-GE production and reduce the large-scale dependence on soybean imports.

In addition, Hungarian and Austrian members of the European Parliament organized a public hearing on "[the future of GMOs in Europe - experiences and best practices](#)" in Brussels (in November, 2015). The meeting referenced that EU citizens have doubts about the bloc's regulation on GE crops. The Hungarian Member of the European Parliament highlighted that two-thirds of the EU member states have banned GE crop cultivation; however, imported food supplies and soy-based animal feed still contain GE products. In accordance with the Government's policy, he emphasized that the strategy to make the EU GE-free guaranteed not just the food security of future generations, but the continent's biodiversity, and will serve environmental protection and economic goals as well.

In January 2015, the Hungarian Minister of Agriculture launched an initiative entitled "Alliance for a GMO-free Europe" on the occasion of a ministerial summit at "Green Week" (Grüne Woche) international exhibition in Berlin. The event provided an opportunity to continue talks on the topic in January 2016. In doing so, the Polish Farm Minister expressed his support with the previously announced initiative, and the Bulgarian Deputy Minister also confirmed that Bulgaria is committed to maintaining GE-free agriculture in Europe. According to the Hungarian Minister of Agriculture,

Hungary will be the guest of honor of Green Week in January 2017. The Hungarian motto of the event will be “from pure source”.

## PART C: MARKETING

### a) PUBLIC/PRIVATE OPINIONS

Negotiations on trade agreements such as CETA and TTIP put biotech questions in the very center of public attention. Although there is no intention to dispute Hungary’s constitutionally banned cultivation of GE plants and GE-free status, opposing NGOs and political groups often use biotech related fears and emotive statements against the agreements.

The Hungarian Nature Conservation Association and Greenpeace drew the Farm Minister's attention in an open letter to that TTIP threaten the country's GE-free status. They were calling for a joint action against TTIP and CETA in the framework of [partnership for GE-free Europe](#) initiated by the Hungarian Government.

Based on it, the Hungarian Nature Conservation Association and Greenpeace urged:

- the Government to ensure that proposals that are undermining the existing level of environmental protection and food safety cannot be part of the investor-state dispute settlement mechanism and the free trade agreement between the EU and the United States;
- a common act in cooperation with opposing EU member states against the threat of the free trade agreements;
- the rejection of the ratification of CETA serving a precedent for TTIP negotiations.

As a part of the anti-biotech lobby, Greenpeace, the Hungarian Nature Conservation Association and the Hungarian Bioculture Association also requested the Hungarian Minister of Agriculture not support the authorization of GE corn at the meeting of the EC’s Standing Committee on plants, animals, food and feed on July 8, 2016.

In September 2016, the Ministry of Agriculture launched a public debate on a draft of long-term strategy for the food industry, valid until 2050. The strategy aims to increase the weight of agriculture and the food industry in Hungary’s value-added production to 25 percent by 2050 and to employ nearly 750,000. At the same time, the Ministry confirmed again the government’s complete rejection of GE products. The public debate is due to close in November 2016.

In contrast with NGOs that oppose biotechnology, the [Zoltan Barabas Agricultural Biotechnology Association](#), which was founded to represent all branches of agricultural biotechnology, is hoping that the negative campaigns and debates on GE crops will ease and innovative biotechnologies techniques can play more important role in the future. Their activities made many of the public realize that a technological transition is going on in agriculture and the food industry, and the ignorance of this fact causes losses for the economy and the society. The other scientific NGO in the region, the [Pannonian Plant Biotechnology Association](#) also supported the regional plant biotechnology research and communication. Their objective was to promote biotechnology contributing to the technological development of sustainable agriculture and providing accurate and science based information about

plant genetic engineering. Last year, the associations decided to merge into the Federation for Innovative Agricultural Biotechnology. Their merger procedure is expected to be completed this year.

#### b) MARKET ACCEPTANCE/STUDIES

Hungarian consumers' attitude to GE products is particularly emotional and influenced by negative campaigns. Verified by political populism, the press often publishes negative opinions about GE ingredients in food and feed.

Demonstrating the preference of non-GE products, demand for GE-free soya in Hungary has been increasing despite the fact that it is more expensive, according to the Government. The [Research Institute of Agricultural Economics](#) conducted a study to determine whether or not the GE-free soybean meal based feeding can become a reality, a real midterm expectation in Hungary with special regards to its low self-sufficiency in protein feed. According to the study, about 60 percent of Hungary's non-GE soybean production is exported to foreign markets and barely contributes to the domestic supply. Analyzing changes in acreage and possible growth in production, it was established that the Hungary's soybean production would be able to satisfy only 50 percent of the annual demand of the domestic livestock sector by 2020.

However, several surveys tried to prove the increasing health awareness of domestic buyers, other studies considered the price as the most decisive criterion in Hungary. Since there is no real alternative to soybean meal, its substitution would make food prices higher by 10-20 percent.

## CHAPTER 2: ANIMAL BIOTECHNOLOGY

### PART D: PRODUCTION AND TRADE

#### a) PRODUCT DEVELOPMENT

In Hungary, there is no commercial use of GE animals and clones for agriculture. Biotechnology for genetic improvement is mainly related to livestock breeding.

Two research institutes, the [Agricultural Biotechnology Center](#) and the [Biology Research Center](#) of the Hungarian Academy of Sciences are the most active in animal biotechnology. The Agricultural Biotechnology Center belongs to the [National Agricultural Research and Innovation Center](#) with its research groups such as the Applied Embryology and Stem Cell Research Group, the Ruminant Genome Biology Group as well as the Rabbit Genome Biology and Bio-model Group. They focus on exploring genome wide polymorphisms with functional importance in ruminants, functional characterization of pluripotent stem cell and on the use of rabbit as model in basic research of human diseases and biotechnological applications.

#### b) COMMERCIAL PRODUCTION

Hungary does not produce any livestock clones, offspring of clones, GE animals or products derived from animal biotechnologies.

#### c) EXPORTS

Hungary does not export GE animals, livestock clones, or products from these animals, including genetics.

#### d) IMPORTS

Currently, no legislation regulates the imports of semen or embryos from clones. Despite this fact, livestock clones or genetics from these animals are not imported into Hungary. No known GE animals are imported.

#### e) TRADE BARRIERS

One of the most sensitive questions for Hungary is the maintenance of the country's GE-free agriculture. Therefore, the status of GE food is among the main concerns for free trade agreements with special regards to the United States and Canadian exports. The Government has an opposing stance to the use of GE crops and GE animals in agriculture. In this respect, all parties in Hungary hold an anti-GE position.

### PART E: POLICY

#### a) REGULATORY FRAMEWORK

All kinds of genetic engineering are regulated by the [Act No. XXVII of 1998 on Biotechnology Activities](#). The Ministry of Agriculture takes the lead and makes decisions regulating biotech issues. The National Food Chain Safety Office is the top government organization that currently handles technical aspects such as inspection and testing. According to the Government Resolution No. 1312/2016, government offices in the capital and counties will take over NFCSOs functions from January 1, 2017. The administrative body which receives and evaluates GE applications for biotechnology experiments is the [Gene Technology Advisory Committee](#).

Hungary has no country-level legislation related to the commercial use and trade of clones, their offspring or products derived from these animals. The Hungarian Government supports the EU's efforts to create common EU legislation and institutions governing animal cloning. Hungary is still a vocal opponent of any kind of GE plant or animal products.

#### b) INNOVATIVE BIOTECHNOLOGIES

In Hungary, many breeding and scientific institutions see the necessity and the potential of gene editing, and they publicly stand up for their opinion. According to their opinion (declared at a [conference on New Breeding Techniques](#) in Budapest, Hungary), genetic modification has become a routine technology and significantly enlarged the circle of traits and genes that could be utilized for crop improvement. In parallel, unprecedented technological progress has been made possible by deciphering any organism's genetic information and the identification of genes involved in the manifestation of certain traits. They have understood and learned to apply natural molecular mechanisms that specifically switch on or off a particular gene even without the integration of a single foreign DNA nucleotide. That is why, they believe that innovative technologies for gene and genome editing could revolutionize genetic improvement of plants and animals as the applied precision techniques enables the creation of designed mutations similar to those that can occur in nature.

#### c) LABELING AND TRACEABILITY

Hungary does not produce and trade in any livestock clones, GE animals and their offspring or products. However, laboratory animals are used in animal biotechnology experiments, they are not released. Therefore, there is no policy for labeling and traceability related to livestock clones and GE animals.

#### d) INTELLECTUAL PROPERTY RIGHTS

There is no specialized intellectual property legislation for animal GE products. Applications for animal patents can be filed with the [Hungarian Intellectual Property Office](#)

#### e) INTERNATIONAL TREATIES/FORA

Hungary actively participates in the work of several multilateral and intergovernmental organizations such as the Food and Agriculture Organization of the United Nations, the World Organization for Animal Health and Codex Alimentarius related to animal health and food safety issues. In general terms, the country is against GE animals but there is no specified and noteworthy position on animal biotechnologies.

#### f) RELATED ISSUES: N/A

### PART F: MARKETING

#### a) PUBLIC/PRIVATE OPINIONS

The Hungarian public is quite critical of products coming from advanced production technologies. Animal cloning and food products made from cloned animals are unpopular and trigger concerns. The Hungarian population is quite skeptical of the necessity and usefulness of food made from cloned or GE animals. At the same time, the public opinion is quite positive in regard to animal biotechnology used for medical purposes.

#### b) MARKET ACCEPTANCE/ STUDIES

Public views on animal products connected with cloning and genetic engineering are expected to be similar to those held for GE crops. These products are likely to be rejected by most of the Hungarian consumers and food retail chains.

Although several biotechnology companies, university knowledge centers, and bio-incubators deal with research on animal biotechnology in Hungary, market surveys on sale and use of GE animals and clones are not available. Biotech companies could gain ground mainly in the market of veterinary molecular diagnostics and marker-assisted selection.