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Report Highlights:

This report describes the production, trade, research, policy, and marketing issues of genetically engineered (GE) plant and animal products in Greece.

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SECTION I: Executive Summary

Greece implemented EU Directive No. 18/2001 on the deliberate release into the environment of genetically modified organisms through Joint Ministerial Decision No. 38639/2017 of September 21, 2005. Greece does not have a coexistence policy and maintains a *de facto* ban on both the cultivation and importation of GE products. Public and private research funding on agro-biotechnology has gradually been cut to zero and currently no GE field trials are being conducted in Greece. Greece has not approved any products for field-testing. The national media debate on GE crops and plant experimentation has made it politically unpalatable to support GE research and cultivation. However, a growing number of Greek scientists and farmers have come forward in favor of the technology.

In Greece, genetic engineering is not used in animals, although it is used for medical and pharmaceutical applications. Currently, there is no active debate on cloning or GE animals.

SECTION II: AGRICULTURAL BIOTECHNOLOGY IN GREECE

CHAPTER 1: PLANT BIOTECHNOLOGY

A) Production and Trade

- a) **PRODUCT DEVELOPMENT:** In Greece, there are no GE (Genetically Engineered) plants or crops under development.
- b) **COMMERCIAL PRODUCTION:** Greece does not commercially cultivate any GE crops, even for GE seed production.
- c) **EXPORTS:** Greece does not export GE crops, although Greek animal products are likely derived from animals that were fed feed with GE ingredients and some processed products likely include some GE derived ingredients.
- d) **IMPORTS:** In 2012, Greece imported 59,540 MT (Metric Tons) of soybeans, mainly from Paraguay (26,613 MT), Ukraine (12,418 MT), and Brazil (9,300 MT). In 2012, Greece imported 322,604 MT of soybean meal, mainly from Argentina (274,656 MT).

B) Policy

- a) **REGULATORY FRAMEWORK:** Greece implemented EU Directive No. 18/2001 on the deliberate release into the environment of genetically modified organisms through Joint Ministerial Decision No. 38639/2017 of September 21, 2005. As stated in a Joint Ministerial Decision, the Greek Ministry of Environment, Energy, and Climate Change is responsible for authorizing the deliberate release of GE material for research and development purposes, while the Greek Ministry of Rural Development and Food is responsible for authorizing the deliberate release of GE products into the market.
- b) **APPROVALS:** Approval of GE products in Greece is subject to EU procedures. Under EU Regulation No. 1829/2003, GE products and derived products must be evaluated by EFSA before they can be authorized in the EU. Applicants must submit an application for authorization in line with European legislation and EFSA's guidelines to the national competent authority of one of the Member States (in Greece, the Ministry of Rural Development and Food) who then forwards the application to EFSA for its scientific risk assessment. EFSA's Panel on Genetically Modified Organisms (GMO) carries out a detailed risk assessment to evaluate the safety of the GMO and derived food or feed. The

Panel's independent scientific advice is then used by the Commission and Member States when taking a decision on market approval.

A variety of GE events have been approved for feed and food use at the European level under EU Regulation No. 1829/2003.

The full list of GE approved products is available at http://ec.europa.eu/food/dyna/gm_register/index_en.cfm

The list of GE products pending renewal authorization under Regulation EC 1829/2003 is available on the European Food Safety Agency's (EFSA) [website](#).

c) FIELD TESTING: The national media debate on GE crops and plant experimentation has made it politically unpalatable to support GE research and cultivation. Public and private research funding on agro-biotechnology has gradually been cut to zero and currently no GE field trials are being conducted in Greece. Furthermore, 52 of the 54 Greek regions declared themselves 'GE-free', further hampering the scope for new research and plantings. Greece transposed EU Directive No. 18/2001 on the deliberate release into the environment of genetically modified organisms through Joint Ministerial Decision No. 38639/2017 of September 21, 2005.

d) STACKED EVENT APPROVALS: Greece implemented EU Regulation No. 1829/2003 and Directive No. 2001/18/EC on GE plants containing stacked transformation events through Joint Ministerial Decision No. 38639/2017 of September 21, 2005. Stacked events are subject to risk assessment, following the principles provided in [EFSA's Guidance Document](#).

e) ADDITIONAL REQUIREMENTS: N/A

f) COEXISTENCE: Greece does not have a coexistence policy and maintains a *de facto* ban on both the cultivation and importation of GE products. Since April 2005, Greece has implemented and extended bans on MON 810. In July 2008, EFSA determined that Greece's ban lacked a scientific basis. In August 2009, Greece extended the ban for another two years and expanded the measure to include both trade and cultivation. Greece now maintains its bans on MON 810 by invoking the 'safeguard clause'.

g) LABELING AND TRACEABILITY: Greece implemented EU Regulations No. 1829/2003 on genetically modified food and feed and No.1830/2003 concerning the traceability and labeling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms on January 1, 2005. The European Union sets out a framework for

guaranteeing the traceability of GE products throughout the food chain, including processed foods in which the production methods have destroyed or altered the genetically modified DNA (i.e. in oils). These rules apply not only to GE products used in food, but also to those intended to be used in crops (i.e. seeds). Food and feed products containing GE organisms must be labeled as such. The words ‘genetically modified’ or ‘produced from genetically modified (name of the organism)’ must be clearly visible on the labeling of these products. See k) MONITORING AND TESTING and l) LOW LEVEL PRESENCE POLICY below.

h) **TRADE BARRIERS:** Greece maintains a de facto ban on both the cultivation and importation of GE products.

i) **INTELLECTUAL PROPERTY RIGHTS (IPR):** Greece implemented EU Directive No. 98/44/EC on the legal protection of biotechnological inventions through Presidential Decree No. 321/2001. Pursuant to the principles laid down in Directive No. 98/44/EC, the Greek Decree sets out provisions concerning the legal protection of biotechnological inventions and specifies patentability conditions. “Inventions that are new, involve an inventive step, and are susceptible to industrial application shall be patentable even if they concern a product consisting of, or containing biological material, or a process by means of which biological material is produced, processed, or used”. As required by Art. 6 of Greek Decree No. 321/2001, “where a breeder cannot acquire or exploit a plant variety right without infringing a prior patent, he may apply for a compulsory license for non-exclusive use of the patent inasmuch as the license is necessary for the exploitation of the plant variety to be protected, subject to payment of an appropriate royalty.” Similarly, “where the holder of a patent concerning a biotechnology invention cannot exploit it without infringing a prior plant variety right, he may apply for a compulsory license for non-exclusive use of the plant variety protected by that right, subject to payment of an appropriate royalty. Applicants must demonstrate that: (a) they have applied unsuccessfully to the holder of the patent or of the plant variety right to obtain a contractual license; (b) the plant variety or the invention constitutes significant technical progress of considerable economic interest compared with the invention claimed in the patent or the protected plant variety.”

j) **CARTAGENA PROTOCOL RATIFICATION:** The Greek Government ratified the Cartagena Protocol on Biosafety to the United Nations’ Convention on Biological Diversity (CBP) through Law No. 3233/2004 (Official Journal of the Government A 51/18-2-2004). The Ministry of Environment, Energy, and Climate Change coordinates administrative, technical, and scientific activities relating to Biosafety and manages the Greek Biosafety Clearing House (BCH).

k) **MONITORING AND TESTING:** In Greece, the primary responsibility for food safety—both on the market and at point of entry—rests with the Ministry of Rural Development and Food.

GE Food: The Directorate of Processing, Standardization, and Quality Control of Products of Vegetable Origin at the Ministry of Rural Development and Food is responsible for controls on GE food. The General Chemical State Laboratory (GCSL) is responsible for the documentary, identity, and physical controls of imported GE food. Currently, 14 Chemical Services accredited to ISO 17025 act as official laboratories within GCSL: four of these laboratories have been designated as National Reference Laboratories (NRLs) in the area of GE products.

GE Feed: The Directorate of Animal Products Inputs (DAPI) at the Ministry of Rural Development and Food is responsible for controls on GE feed. GE feed controls are performed by the General Chemical State Laboratory (GCSL) and accredited laboratories. Standard controls involve documentary, identity and physical checks, and sampling. The Secretary General of the Greek Ministry of Rural Development and Food is responsible for imposing sanctions based on a recommendation from the DAPI.

l) **LOW LEVEL PRESENCE POLICY:** In compliance with EU Commission's Regulation No. 619/2011, Greece has set a 0.1 percent tolerance level for trace elements of GE events in feed. On February 22, 2011, Member States at the Standing Committee on the Food Chain and Animal Health (SCoFCAH) endorsed a Commission proposal providing for a 'technical solution' designed to harmonize the implementation of the zero tolerance policy on non-authorized GE material in feed. The proposal is intended to address the uncertainty faced by EU operators placing feed on the market composed of imported raw materials from non-EU countries. This technical solution defines the lowest level of GE presence that is considered by the EU Reference Laboratory when validating detection methods, as 0.1 percent. It is limited to GE feed material authorized for commercialization in a non-EU country and for which a EU authorization request for the biotech event in question has been lodged with EFSA for at least three months or of which the authorization has expired. Feed will be considered non-compliant with EU legislation when the presence of this GE feed material is, after due consideration of the margin of error, above the technical zero of 0.1 percent. This draft regulation was subject to the scrutiny of the European Parliament and of the Council for three months following their formal receipt of the draft and was adopted (Commission Regulation No. 619/2011) and entered into law July 20, 2011.

C) Marketing

a) **MARKET ACCEPTANCE:** The general attitude towards GE crops in Greece remains unfavorable.

The uncertainty around Greece's national biotech policy and negative media reports have sharply affected supermarket chain marketing strategies. Several private label brands have opted to market their products as 'GE-free' since 2012.

b) **PUBLIC/PRIVATE OPINIONS:** Several vocal NGOs and lobbying groups lead the charge against the development of biotechnology in Greece, strongly influencing the politicians and consumers opinion. However, a growing number of Greek scientists and farmers have come forward in favor of the technology. The School of Agriculture at the Aristotelian University of Thessaloniki, the Laboratory of Genetic Engineering and the Laboratory of Molecular Biology at the University of Crete are considered the most progressive entities in the country on biotechnology, with pro-GE scientists who also participate in National Biotech Committees. Of note, a recent study from Greek, German, and Dutch university researchers published in the Journal of Agrobiotechnology Management and Economics ("Do European Union Farmers Reject Genetically Modified Maize? Farmer Preferences for Genetically Modified Maize in Greece"), shows that 61 percent of Greek farmers would cultivate genetically engineered (GE) maize if their government allowed it. Reportedly, 56 percent would adopt the technology if it were sold at the same price as conventional varieties, while 68 percent would plant GE maize in order to reduce pesticide applications needed for European corn borers. Most of the surveyed farmers stated that information on GE maize is not easily accessible.

The study is available at <http://www.agbioforum.org/v15n3/v15n3a02-skevas.htm>

MARKETING STUDIES: The above referenced study provides useful information on farmer acceptance of GE seeds. We are unaware of any "marketing" studies in Greece.

D) Capacity Building and Outreach

a) **ACTIVITIES:** FAS Rome covering Greece is regularly in touch with public authorities, industry, and agricultural associations, facilitating bilateral information flow and mutual understanding between the United States and Greece. FAS Rome outreach efforts focus on the importance of innovation in addressing such key issues as food security, climate change, and energy and how a science-based regulatory system is critical to global trade and safeguarding the public.

FAS Rome GAIN reports are available at:

<http://gain.fas.usda.gov/Lists/Advanced%20Search/AllItems.aspx>

b) STRATEGIES AND NEEDS:

Plant Biotechnology to Address Agriculture Sustainability and Boost Productivity: While Greece is increasingly sensitive to agricultural sustainability and is taking measures to make its agriculture more sustainable (including good agricultural practices, reduced pesticide use, reduced pollution and green house gas emissions, renewable energies, organic), plant biotechnology is not currently being considered by the Greek government as another tool to address this issue. Organic agriculture is often considered in Greece as the only way to make agriculture more sustainable. However, fostering organic production, adopting environmentally-friendly conventional farming practices, and allowing biotech crops that reduce pesticide use and increase productivity are all ways Greece could address agriculture sustainability.

CHAPTER 2: ANIMAL BIOTECHNOLOGY

E) Production and Trade

a) BIOTECHNOLOGY PRODUCT DEVELOPMENT: In Greece, there are no GE animals under development likely to be on the market in the near future. Animal genetic engineering is not favored by Greek agriculture, although it is used for medical or pharmaceutical applications.

b) COMMERCIAL PRODUCTION: GE animals are not favored for commercial production in Greece.

c) BIOTECHNOLOGY EXPORTS: Greece does not knowingly export any GE products, clones or products from clones to the United States.

d) BIOTECHNOLOGY IMPORTS: Greece does not knowingly import GE animals, or livestock clones, or products from these animals, including genetics.

F) Policy

a) REGULATION: Greece implemented EU Regulation No. 1829/2003 on genetically modified food and feed on January 1, 2005, that also establishes the framework for GE animals. On January 26, 2012, EFSA published its “Guidance on the risk assessment of food and feed from genetically modified animals and on animal health and welfare aspects.” This document provides guidance for the risk assessment of food and feed containing, consisting of, or produced from GE animals, as well as for the health and welfare assessment of these animals, within the framework of Regulation (EC) No.

1829/2003 on GE food and feed. The outcome of the public consultation on the draft Scientific Opinion for this guidance was published February 2012. On May 27, 2013, EFSA published its “Guidance for the Environmental Risk Assessment (ERA) of Living GE Animals to be Place on the EU Market.” EFSA has set up a webpage on GE animals (<http://www.efsa.europa.eu/en/topics/topic/gmanimals.htm>) to keep track of the progress of the work on GE animals, as well as provide the relevant documents and reports. To date, EFSA has not received any applications for GE animals. See the [EU-27 report](#) for more detailed information.

In Greece, the Ministry of Rural Development and Food - Directorate of Animal Welfare, Medicines, and Applications is responsible for animal welfare. Border Inspection Posts (BIPs) and Veterinary Offices for Compliance with Community Requirements (UVAC) perform inspections and notify infringements to the Directorate General of Veterinary Services and the Directorate of Animal Welfare, Medicines, and Applications at the Ministry of Rural Development and Food.

Official controls on farm: controls on farm are performed by local and prefectural vets that send the inspection results to the Animal Welfare office at the Greek Ministry of Rural Development and Food on a quarterly basis. Local and prefectural vets are responsible for taking action in the event of non-compliance, by imposing punitive measures or, when animals are severely maltreated, referring the farm to the judicial authorities.

Official controls at slaughter: Municipal and prefectural vets carry out routine control of animal welfare at slaughterhouses.

b) LABELING AND TRACEABILITY: Greece implemented EU Regulations No. 1829/2003 on genetically modified food and feed and No.1830/2003 concerning the traceability and labeling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms on January 1, 2005. Food and feed products containing GE organisms must be labeled as such. The words ‘genetically modified’ or ‘produced from genetically modified (name of the organism)’ must be clearly visible on the labeling of these products.

c) TRADE BARRIERS: N/A

d) INTELLECTUAL PROPERTY RIGHTS (IPR): Greece implemented EU Directive No. 98/44/EC on the legal protection of biotechnological inventions through Presidential Decree No. 321/2001. Art. 5 considers unpatentable: “processes for modifying the genetic identity of animals which are likely to cause them suffering without any substantial medical benefit to man or animal, and also animals

resulting from such processes”. Likewise, Art. 9 states “the sale or any other form of commercialization of breeding stock or other animal reproductive material to a farmer by the holder of the patent or with his consent implies authorization for the farmer to use the protected livestock for an agricultural purpose. This includes making the animal or other animal reproductive material available for the purposes of pursuing his agricultural activity, but not sale within the framework or for the purpose of a commercial reproduction activity”.

e) INTERNATIONAL TREATIES/FORA: N/A

G) Marketing

a) MARKET ACCEPTANCE: In Greece, animal biotechnology is currently a non-issue, and is expected to remain as such as it is not currently being developed domestically.

b) PUBLIC/PRIVATE OPINIONS: Currently, there is no active debate on cloning and GE animals in Greece, nor any cloning taking place.

c) MARKET STUDIES: We are unaware of any market studies relating to marketing animal biotechnology products in Greece.

H) Capacity Building and Outreach

a) ACTIVITIES: There have been no recent activities conducted in Greece on animal biotechnology.

b) STRATEGIES AND NEEDS: N/A

Abbreviations and definitions used in this report

CBP: Convention on Biological Diversity

EFET: Hellenic Food Authority

EFSA: European Food Safety Authority

EU: European Union

FCM: Food Contact Materials

GE: Genetically Engineered

GCSL: General Chemical State Laboratory

GI: Geographical Indications

MMT: Million Metric Tons

NRLs: National Reference Laboratories

Terms used in this report:

Animal genetic engineering results in the modification of an animal's DNA to introduce new traits and change one or more characteristics of the animal.

Animal cloning is an assisted reproductive technology and does not modify the animal's DNA. Cloning is therefore different from the genetic engineering of animals (both in the science and often in the regulation of the technology and/or products derived from it).

Cloning is an animal biotechnology that developers frequently utilize in conjunction with other animal biotechnologies such as genetic engineering and therefore included in this report.