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Report Highlights:
Turkey published Biosafety Law and it's implementing Regulations in 2010. This legislation continued to cause harm to Turkey's agriculture and food sectors due to inharmonious procedures and approvals with the world in 2015. The Turkish Poultry Meat Producers and Breeders Association submitted dossiers to the Biosafety Board to request the approval for 37 genetically engineered (GE) traits for feed use in May 2015. Turkey's Biosafety Board approved nine corn and four soybean events and their products (for feed use only) in July and November 2015. Evaluations of the rest of the 24 events are still pending. As of May 1, 2015, there are 25 corn, and seven soy events approved (for feed use only) in Turkey. Testing of imported products remains inconsistent and continues to be a considerable cost for importers. This is a mid-2016 update report.

Turkey Agricultural Biotechnology Update Highlights:

Turkey published Biosafety Law and it's implementing Regulations in 2010. This legislation continued to cause harm to Turkey's agriculture and food sectors due to inharmonious procedures and approvals with the world in 2015.
The number of violations increased in 2014 following Turkey's High Court decision in December 2013 to suspend two biotech approvals (MON810 and MON88017xMON810). In May, 2015, the High Court reversed its decision that rescinded the approval of MON810 maize.

In October 2014, Ministry of Food Agriculture and Livestock (MinFAL) began requiring a government attestation that imports of enzymes and microorganisms, and products that utilize them, are not obtained from genetic engineering. In May, 2015, MinFAL decided not to continue the requirement for enzymes or for products that utilized enzymes in their manufacture. However, for microorganisms, importers are still required to provide a biotech-free certificate.

The Turkish Poultry Meat Producers and Breeders Association (Besd-Bir) submitted dossiers to the Biosafety Board to request the approval for 37 genetically engineered (GE) traits for feed use in May 2015. Turkey's Biosafety Board approved nine corn and four soybean events and their products (for feed use only, not for food use) in July and November 2015. Evaluations of the rest 24 events are still pending.

As of May 1, 2015, there are 25 corn and seven soy events approved for feed use only in Turkey. Testing of imported products remains inconsistent and continues to be a considerable cost for importers.

Section I. Executive Summary:

The Biosafety Law went into effect on September 26, 2010. Since the publication of the Law, MinFAL established an independent Biosafety Board consisting of mostly officials from various government ministries and some academicians. Agricultural Associations in Turkey submitted applications for the approval of 22 corn, 6 six soybean, 3 three canola, one sugar beet and one potato starch transgenic events (all currently approved in the EU) in 2010 and 2011. The Biosafety Board has approved usage for only three soybean and 16 corn of these events for feed use in 2011 and 2012 and the rest were rejected.

In May 2015, the Turkish Poultry Meat Producers and Breeders Association (Besd-Bir) submitted dossiers to the Biosafety Board to request approval for 37 genetically engineered traits for feed use only. The Board approved 9 nine corn and 4 four soybean events and their products for feed use only, in July and November 2015. Evaluations of the rest 24 events are still pending.

Although soybean and corn are approved for animal feed, its presence in a food is illegal under the Biosafety Law. Most of Turkey's trade partners have shipments that have run afoul of Turkey's asynchronous approvals for food and feed. The unpredictable situation has increased corporate risk and costs, as well as and contributed to increased public suspicion of GE products.

The number of violations increased in 2014 following Turkey's High Court decision in December 2013 to suspend two biotech approvals (MON810 and MON88017xMON810). In 2014 only an estimated 150 violations of the Law were prosecuted, some under the charge of "biological terror". All these caused

harm to Turkey's agriculture, feed and food sectors deeply. Then with the intention of reducing the instances of prosecution for LLP in imports, MinFAL amended the implementing Regulation of the Biosafety Law to define "contamination" in May 2014. Also, the High Court reversed its decision that rescinded the approval of biotech corn events in May 2015.These recent changes appear to have had some impact in reducing overly harsh penalties such as jail, according to some sources.

A new challenge was introduced in October 2014 when MinFAL began requiring a government attestation that imports of enzymes and microorganisms, and products that utilize them, are not obtained from GE. Due to this requirement, lots of shipments were detained or stuck at the Turkish customs or could not be imported at all. In May 2015, MinFAL decided not to continue the requirement for importers to provide a certificate for biotech-free enzymes or for products that utilized enzymes in their manufacture. However MinFAL continues to require a biotech-free certificate for the import of microorganisms.

The High Court's reversed decision, MinFAL's regulation amendment which defines "contamination", the new implementation which does not require GE-free certification for enzymes, as well as the new set of event approvals in 2015 brought a considerable decrease in violations in 2015, compared to past two years, and this was reflected by an increase in trade.

Section II: Plant and Animal Biotechnology

Chapter1: Plant Biotechnology

Part A: Production and Trade

a. Product Development: Turkey's Biosafety Law permits the regulated study and development of plant biotechnology. However, the cumulative disincentives in the forms of quarantine control, approvals, liability, and prohibition on the cultivation of agricultural biotechnology have discouraged product development. According to the Law and the implementing Regulation, an application or permit is not required for agricultural biotech research. The researcher must inform t MinFAL Agricultural Research and Policies General Directorate (TAGEM) about the research activity and its result(s). However, researchers must apply to TAGEM for permission to import GE material and derived products for the purpose of research, development and training/educational activities. The amount of GE material and derived products to be imported is determined by TAGEM. The Law requires TAGEM to finalize the permit procedure within 15 days. After the completion of the research activity, the researcher must inform TAGEM of the research result(s).

Many academicians agree that the procedures and requirements of the Law discourage research. Universities, however, are still applying marker assisted breeding in biotechnology courses. Also, the Law's prohibition on cultivation and commercialization has discouraged the private and public sector from pursuing the development of transgenic products.

b. Commercial Production: Article 5(1)(c) of the Biosafety Law adopted on March 26, 2010, bans the production of genetically engineered animals and plants. Importation of transgenic seeds is also forbidden by the Law and by the seed circular, which is usually published in January of every

year by MinFAL.

c. Exports*:* There is no commercial production of GE crops in Turkey and Turkey does not export GE crops to the United State or other countries. However, a significant quantity of animal feed material is redirected from Turkey to neighboring countries at discounted prices following Turkish import officials' rejection of shipments that contain unapproved traits.

d. Imports: Turkey continued to be an importer of bulk and semi-processed commodities in 2015. After cotton, soybean and soybean meal is the second largest export commodity from the U.S United States to Turkey. However, soybean exports to Turkey decreased significantly in 2013 and 2014 after a record high in 2012. Trade in other higher valued products such as supplements and pet food were also reduced by the impacts of the Law, and some products were rejected due to their transgenic content or very low presence of transgenic crops.

Due to insufficient domestic production and increasing demand, Turkey imports significant quantities of feed crops for its poultry and livestock sectors. The United States is among the top suppliers to the Turkish market. These imports fluctuate, but are affected by the number of events approved as it is seen below:

In 2010, the Turkish Feed Millers Association submitted dossiers for the approval of three soybean events (feed use only) that are already approved in the European Union. These were: A2704-12, MON89788 and MON40-3-2. The Biosafety Board decided to review the applications under the simplified procedure, which is an expedited way of reviewing.

The Biosafety Board approved the above mentioned soybean events to be used as feed with a final approval decision published in the Official Gazette on January 26, 2011.

The Feed Millers Association, Turkish Poultry Meat Producers and Breeders Association, and the Turkish Egg Producers Association also applied in January of 2011 for the approval for feed use of the 22 EU-approved corn events. In December 2011, and April 2012, approvals for feed use were given for 16 out of 22 corn events with the remaining six events being rejected. As a result of the rejections, trade in corn and corn by-products have virtually ceased due to the difficulty in segregating the approved and rejected biotech GE events in the supply chain.

On May 11, 2015, the Turkish Poultry Meat Producers and Breeders Association (Besd-Bir) submitted dossiers to the Biosafety Board to request approval for 37 EU-approved (9 soybean, 14 corn, 10 cotton and 4 canola) genetically engineered traits for feed use only.

On July 16, 2015, the Board approved 3 corn (MIR604 corn, MON 863 corn, T25 corn) and 2 soybean (MON87701 soybean and MON87701xMON89788 soybean) events and their products for feed use.

On November 5, 2015, the Biosafety Board approved another 6 corn (MON863 x NK603, MON863 x MON810, MON89034 xMON88017, MIR604 xGA21, Bt11xMIR604, MIR162) and 2 soybean (A5547-127, 356043) events and their products for feed use. The assessments of remaining 24 traits are still pending.

Due to insufficient domestic production and increasing demand, Turkey imports significant quantities of feed material for its poultry and livestock sectors. On July 25, 2011, the Biosafety Board advised the MinFAL of the implementation of the rules set by the Commission Regulation (EU) No 619/2011 of 24 June 2011 "laying down the methods of sampling and analysis for the official control of feed as regards presence of genetically modified material for which an authorization procedure is pending or the authorization of which has expired" in the official controls. Right after the new applications on May 11, 2015, MinFAL directed the Provincial Directorates, which perform the official controls, to implement the rules of the Commission Regulation (EU) No: 619/2011 for the new applications since the authorization procedures are pending. This legislation allows trace amounts of unapproved biotech content in feed up to a "technical zero" level of 0.1 percent.

As a result of MinFAL's amendment of the implementing Regulation of the Biosafety Law defining "contamination", new implementation which does not require GE-free certification for enzymes and technical zero level of 0.1 percent for pending events, reversed decision of High Court that rescinded the approval of MON810 maize and new approvals of 4 soybean and 8 corn events, the market access of these commodities were eased partially and commercial activities has increased significantly in 2015 compared to past two years.

e. Food Aid Recipient Countries: Turkey is not a food aid recipient country. However, in August 2013, Turkey rejected a shipment of food aid wheat for Syrian refugees meant to be milled in Turkey. Turkey based its decision on the detection of a soybean or corn trait. This decision forced a second country to receive a portion of the rejected wheat shipment.

Part B: Policy

a. Regulatory Framework: Turkey's regulation of agricultural biotechnology is governed by the Biosafety Law (Law No: 5977), adopted on March 26, 2010, and related implementing regulations. Import of transgenic agricultural products is only allowed after approval of each event for each use; for example: food, feed, industrial (and specific applications, such as: lubricant, ink, paint, biofuel, etc.).

Following the adoption of the Biosafety Law, MinFAL established a Biosafety Board. TAGEM acts as the secretariat of the Board. The Board has nine members who may serve two consecutive three-year appointments. The Board members review applications for the approval of transgenic events. Most of the Board members are high-level bureaucrats from MinFAL, the Ministry of Health, the Ministry of Science, Industry and Trade Technology, the Ministry of Environment and Urbanization, the Ministry of Forest and Water Affairs, and the Ministry of Economy. The Ministers of each Ministry appoints a member of their staff to serve on the Board. Two non-governmental Board members are appointed by the Minister of MinFAL, and are selected from qualified experts from a university and from a related association (Agricultural Engineers, Food Engineers, etc.). Article 10-(1) of the Law states that "the Board is independent in the performance of its duties. No organization, office, body or person can issue orders or instructions to the Board."

Approval can only be granted after a detailed application (dossier) is submitted and reviewed by the Risk Assessment and Socio-Economic sub-committees, and then are approved by the Biosafety Board. The Biosafety Board publishes decisions in the Official Gazette.

Each application is reviewed separately. For every application, the Board establishes Risk Assessment and Socio- Economic Committees from a "List of Experts". Law says that where required, the Board will also establish an Ethical Committee. However, an Ethical Committee has yet to be established. The members of the committees are kept secret. However, the List of Experts is public and currently contains 349 experts from academia and the Scientific and Technological Research Council of Turkey (TUBITAK).

MINFAL published two implementing regulations of the Biosafety Law on August 13, 2010. These are "Regulation on GMO and Products" and "Regulation on Working Principles of the Biosafety Board and the Committees".

According to the Law, either the gene owning technology companies or importers of transgenic crops are allowed to submit applications for the approval of a transgenic event. The Board should inform MinFAL within 90 days whether or not the application is accepted and also type of the evaluation procedure (simplified or regular) to be followed. Once application dossier is accepted and procedure to be followed is determined by the Board, reviews are to be completed within 270 days. Note that this time is counted while the Board is doing the assessments and the 270 day clock stops when additional information or documents or study is requested from the applicant. In practice, an application can take much longer than 270 days to be approved depending upon the time it takes to supply additional requested information to the Board.

MinFAL pressured the international companies that have developed agricultural GE traits to submit applications under the new Law as quickly as possible in order to avoid trade problems. In response companies expressed concerns about the severe yet unclear liability provisions in the Law, as well as the vagueness of the application procedures.

The liability provisions of the Law include harsh penalties that may involve lengthy jail terms for unspecified "related parties. It lacks explicit guidance about what documents are required and how they will be evaluated. The Law bans inclusion of GE ingredients in baby food and supplementary foods for young children, bans cultivation of GE plants, production of animals and the planting of GE seeds. Furthermore it contains onerous labeling and traceability requirements once the product arrives in Turkeyand does not allow an application to be submitted in Turkey until it is already approved in the country of production, which guarantees asynchronous approvals.

The Biosafety Board has approved usage for only three soybean and 16 corn events for feed use only in 2011 and 2012. However, in December 2013, Turkey's High Court effectively suspended the approval of two corn events, MON810 (approved and cultivated in Europe) and MON88017xMON810. On May 25 May, 2015 the Court reversed its decision on MON810 maize. And then MinFAL implemented the decision for both MON810 and MON88017xMON810.

In May 2015, the Turkish Poultry Meat Producers and Breeders Association (Besd-Bir) submitted

dossiers to the Board to request approval for 37 EU-approved (nine soybeans, 14 corns, 10 cottons and four canola) GE traits for feed use only. In July and November 2015, nine corn and four soybean events of those applications were approved for feed use only. The remaining 24 events' assessments are still pending.

Currently there is no threshold for presence of unapproved transgenic events in food. As a result, trade has been severely restricted out of concern that dust or minor LLP of GE crops in food products leads to the rejection of shipments.

In May 2014, with the intention of reducing the instances of prosecution for LLP in imports, MinFAL amended the implementing Regulation of the Biosafety Law to define "contamination" in feed and established a 0.9% threshold at and under which products are considered as "contaminated". However, the amendment does not clearly explain how "contamination" changes the ability to market products or commodities with unapproved GE traits. For detailed information, please see GAIN report TR4017 on "Turkey Amends Biotechnology Regulation" dated 5/29/2014.

Beginning in late October 2014, MinFAL began requiring a certificate from the producer's or exporter's government authority that issues a health certificate (plant health), veterinary health certificate (animal health), or certificate of free sale indicating that for:

- the import of microorganism, a certificate issued by the authorities of the country of origin or the country of loading or an analysis report issued by an internationally accredited laboratory evidencing that the microorganism is not genetically modified; &
- the import of enzyme, a certificate issued by the authorities of the country of origin or the country of loading evidencing that the organism, from which the enzyme is obtained, is not genetically modified.

For detailed information, please see GAIN report TR4039 "Turkey Requires GE-Free Attestation for Enzymes and Microorganisms" dated 10/28/2014.

On May 5, 2015, MinFAL directed ports to regulate the import of enzymes under the Veterinary, Food and Feed Regulation, which discontinues the requirement for importers to provide a certificate for biotech-free enzymes or for products that utilized enzymes in their manufacture. However, Turkey continues to require a biotech-free certificate for the import of microorganisms.

High Planning Council (HPC) of Turkey adopted the "Biotechnology Strategy and Action Plan" to be implemented in the period of 2015-2018 was published in the Official Gazette in June 2015. The Plan is the first adopted document which covers all aspect of biotechnology (agricultural, health, industrial) in one document and owned by very high level government authority (HPC is chaired by the prime Minister and the members are from the Cabinet as such ministers of Ministry of Development, Ministry of Finance, Ministry of Environment and Urbanism , Ministry of Transport, Maritime and Communication, Ministry of Energy and Natural Sources, Ministry of Science, Industry and Technology, Ministry of Forest and Water Affairs.) and all interested parties such as related government agencies, private sectors and academia.

The Plan states the vision is "to improve the level of technological information, increase number of products with added value, and take place amongst the leading countries within the field of biotechnology". It was prepared by the Ministry of Science, Industry and Technology in cooperation with universities/academia, business sector, and related government agencies. General targets of the Plan are:

- to regulate the legal and administrative structure,
- to improve technical infrastructure,
- to increase production capacity,
- to improve agricultural, health and industrial biotechnology sectors.

Specific targets of it related to agricultural biotechnology are;

- to amend the Biosafety Law and other related legislation
- to determine the rules and principles of allocating "specifically controlled fields" to the scientist for field trials for their Research & Development activities.

The Biosafety Board took this specific target related to the allocation of "specifically controlled fields" in its agenda and has been working on the principles and rules of allocating of specifically controlled fields for Research & Development activities. This might be the only solid output of the Plan in the aspect of agriculture in 2015. It is expected that MinFAL and other related parties will concentrate more on the targets of the Plan in detail in the coming years.

MinFAL organized the first international workshop on the GMO-Risk Assessment, Socio-economic Assessment and Risk Management in December 2015. Biosafety Board members, Scientific and Socio-economic Committees members, government agencies and NGOs (consumers, chambers, sector), as well as representatives and experts from regulatory bodies in other countries participated to this workshop. It was the first activity hosted by MinFAL that all national interested parties and international participants participated to the activity and at the end of the workshop came to consensus that GE technology is science based technology and the current Biosafety Law should be amended (or new Law should be adopted) according to the scientific facts and Turkey's needs.

b. Approvals: Anyone may apply for the approval of a GE trait in Turkey. Applicants are required to provide a dossier containing technical information and data on the trait to be approved, and pay the application fee of 50,000 Turkish Lira (TL) per event (around $18,000) for 2016. If the event is approved already in one of OECD member countries, then the application fee is 15,000 TL (around $ 5300) per event. The application fee is updated at the beginning of each year.

To date, none of the technology-owning companies have submitted an application to be reviewed by the Biosafety Board.

The industry associations' application dossiers contained documents that were availableon the Internet. The dossiers were reviewed under the Simplified Procedure as stated in the Law (expedited) due to the urgent need to import protein for the animal sector. Following the review process, three soybean events (A2704-12, MON40-3-2, and MON89788) were officially approved and the approvals were published in the Official Gazette on January 26, 2011.

In January of 2011, the Feed Miller's Association submitted applications for 22 corn events to the Biosafety Board for feed use All of these events are already approved in the European Union. These applications were reviewed under regular procedure. As a result of the review, the Biosafety Board approved 16 corn events on December 24, 2011 and on April 21, 2012. The Board rejected six corn events.

On April 25, 2013, the Board rejected 22 GE corn varieties to be used in the ethanol sector, three GE rapeseed varieties to be used in the feed sector, and one GE sugar beet variety to be used in the feed sector. These decisions were widely reported in the media in response to public outrage over three suspected GE rice shipments.

On December 24, 2013, MinFAL acted on a decision by Turkey's High Court to suspend the approval of MON810 (approved and cultivated in Europe) for animal feed. Following the High Court decisions MinFAL repealed the approval of MON810 and MON88017xMON810 in animal feed products, withdrew from the market and banned the import of the products that contain these traits. The two suspended traits were added to the list of unapproved traits. On May 25, 2015 the High Court reversed its decision on MON810 maize and MinFAL directed the Provincial Directorates, which implement the Biosafety Law at the ports, to implement the High Court's decision for both MON810 and MON88017xMON810.

On May 11, 2015, Turkish Poultry Meat Producers and Breeders Association (Besd-Bir) submitted dossiers to the Biosafety Board for the approval request of 37 traits (9 soybean,14 corn, 4 canola and 10 cotton) for feed use (Please see Table 1 below).

The Board has accepted the applications to review under the simplified procedure which is an expedited review process and established the scientific and socio-economic committees for the assessments.

Table 1. Full Applications of Besd-Bir on May 11, 2015

Commodity	No	Event	Status
Soybean	1	A5547-127	Approved
	2	356043	Approved
	3	MON87701	Approved
	4	MON87701 x MON89788	Approved
	5	MON 87705	Pending
	6	MON 87708	Pending
	7	MON 87769	Pending
	8	305423	Pending
	9	BPS-CV127-9	Pending
	1	T25	Approved
	2	MON863	Approved
	3	MON863 x NK603	Approved
	4	MON863 x MON810	Approved
	5	MIR604	Approved

Corn	6	MON863xMON810xNK603	Pending
	7	MON89034 xMON88017	Approved
	8	MIR604 xGA21	Approved
	9	Bt11xMIR604	Approved
	10	Bt11xMIR604xGA21	Pending
	11	MIR162	Approved
	12	MON89034x1507xMON88017x59122 MON89034×1507×MON88017 MON89034×1507×59122 MON89034×MON88017×59122 1507×MON88017×59122 MON89034x1507 MON89034x59122 1507xMON88017 MON88017x59122	Pending
	13	MON89034×1507×NK603	Pending
	14	MON 87460	Pending
Cotton	1	MON1445	Pending
	2	MON15985	Pending
	3	MON531	Pending
	4	MON531 x MON1445	Pending
	5	LLCotton25	Pending
	6	GHB614	Pending
	7	281-24-236x3006-210-23	Pending
	8	T304-40	Pending
	9	MON 88913	Pending
	10	GHB614xLLCotton25	Pending
Canola	1	GT73	Pending
	2	MS8, RF3, MS8xRF3	Pending
	3	T45	Pending
	4	MON 88302	Pending

On July 16, 2015 the Board approved five traits as 3 corn (MIR604, MON 863, T25) and 2 soybean (MON87701 and MON87701xMON89788) and their products for feed use only. (For more information please see the Gain Report no. TR5037 dated 7/21/2015 on "Turkish Biosafety Board Approves Five Biotech Traits")

On November 5, 2015, the Board approved an additional 8 events as 6 corn (MON863 x NK603, MON863 x MON810, MON89034 xMON88017, MIR604 xGA21, Bt11xMIR604, MIR162) and 2 soybean (A5547-127, 356043) and their products for feed use only.

Please see the Table below for the current list of approved events in Turkey.

Table-2: Approved events for feed use only

No	Commodity	Event	Approval Date
1.	Soybean	A2704-12	1/1/2011
2.	Soybean	MON40-3-2	1/1/2011
3.	Soybean	MON89788	1/1/2011
4.	Corn	Bt11	12/24/2011

5.	Corn	DAS1507	12/24/2011
6.	Corn	DAS59122	12/24/2011
7.	Corn	DAS1507xNK603	12/24/2011
8.	Corn	NK603	12/24/2011
9.	Corn	NK603 x MON810	12/24/2011
10.	Corn	GA21	12/24/2011
11.	Corn	MON89034	12/24/2011
12.	Maize	MON89034xNK603	12/24/2011
13.	Corn	Bt11xGA21	12/24/2011
14.	Corn	59122x1507xNK603	12/24/2011
15.	Corn	DAS1507x59122	12/24/2011
16.	Corn	MON88017XMON810	12/24/2011
17.	Corn	MON88017	4/21/2012
18.	Corn	MON810	4/21/2012
19.	Corn	59122xNK603	4/21/2012
20.	Corn	MIR604	7/16/2015
21.	Corn	MON863	7/16/2015
22.	Corn	T25	7/16/2015
23.	Soybean	MON87701	7/16/2015
24.	Soybean	MON87701xMON89788	7/16/2015
25.	Soybean	356043	11/5/2015
26.	Soybean	A5547-127	11/5/2015
27.	Corn	Bt11xMIR604	11/5/2015
28.	Corn	MIR162	11/5/2015
29.	Corn	MIR604xGA21	11/5/2015
30.	Corn	MON863xMON810	11/5/2015
31.	Maize	MON863xNK603	11/5/2015
32.	Maize	MON89034xMON88017	11/5/2015

In January, 2011, the Federation of the Food and Beverages Associations also submitted applications for all EU approved soybean, corn, canola and potato events for food use. However, because of intensive pressure from NGOs and the media, the Federation withdrew their applications for all events for food use.

c. Field Testing: Turkey currently does not have any field testing of products derived from agricultural biotechnology. However, High Planning Council of Turkey adopted the Biotechnology Strategy and Action Plan to be implemented in the period of 2015-2018 which was published in June 2015. One of the specific targets of this Plan related to agricultural biotechnology is to allocate "specifically controlled fields" to the scientist for field trials for their Research & Development activities. The Biosafety Board took this specific target in its agenda and has been working on the principles and rules of allocating of specifically controlled fields for Research & Development activities.

d. Stacked Event Approvals: Turkey treats stacked events as novel and requires their approval separate from the approval of each individual event in the stack.

e. Additional Requirements: Article 5(1)(d) of the Biosafety Law prohibits the use of GE and products thereof in baby foods and infant formulas, follow-on formulas and cereal-based supplementary foods for babies and young children.

Article 3(10) of the Regulation on Genetically Modified Organisms and Products thereof requires MinFAL's permission for each transit passage of products containing GE.

f. Coexistence: The prohibition against cultivation of agricultural biotechnology doubles as Turkey's coexistence policy.

g. Labeling: According to the Biosafety law and regulations, any imported food or feed containing, consisting or deriving from GE crops above the labeling threshold set by the Ministry (in January 2011 this threshold was given as 0.9% via an internal Agriculture Ministerial Directive) must be labeled. Traceability clauses in the Law and implementing regulations require that records be kept for a minimum of 20 years, detailing the unique identifier of the gene, quantity, supplier, and purpose of use, each time a product is processed or handled, from the time of import to the time of distribution to the market.

The implementing regulations also require that "GMOs and products thereof are processed and stored in separate lines. In the event that this is not possible, the production lines and storage facilities must be cleaned by the interested parties in a manner to prevent any contamination with GMOs and products thereof and the circumstance must be committed to records."

h. Trade Barriers: It is a point of pride for Turkey that the Biosafety Law is more restrictive than regulations in the EU. Turkey has zero tolerance for the detection of unapproved GE traits. Before 2015**,** Turkey tested imports that contain ingredients derived from commodities that have GE varieties at a rate of twenty percent for products declared as containing GE, and one hundred percent for products without declaration. However, GE varieties have been tested at a rate of hundred percent for almost one year without taking the declaration into consideration. Turkey does not accept point of origin testing. The Biosafety Law contains liability clauses that penalize non-compliance with large fines and five to twelve years in prison. The approval process is based on a risk assessment and socio-economic assessment of the committees under the Biosafety Board. Turkey also approves traits separately for feed, food and industrial products, which have led to instances of LLPand prosecution under the Biosafety Law's liability provisions.

i. Intellectual Property Rights (IPR): Post is unaware of any IPR problems in Turkey as the cultivation of GE crops is prohibited under the Biosafety Law. The Foreign Commercial Service produces a report "Doing Business in Turkey: Country Commercial Guide for U.S. Companies" that contains information on the protection of IPR in Turkey.

j. Cartagena Protocol Ratification: Turkey ratified the Cartagena Biosafety Protocol on October 24, 2003 and entered it into force on January 24, 2004.

Turkey is a member of several international organizations dealing with plant protection and plant health. These include the European and Mediterranean Plant Protection Organization (EPPO), the Organization for Economic Co-operation and Development (OECD), the Food and Agriculture

Organization (FAO), International Plant Protection Convention (IPPC) and Codex.

k. Related Issues: Turkey's Biosafety Law requires approval for use of products derived from agricultural biotechnology, excluding only pharmaceuticals and cosmetics. Therefore, industrial uses of products derived from plant biotechnology must also be approved separately. In April 2013, Turkey rejected all corn traits for use in the production of ethanol.

l. Monitoring and Testing: Before 2015**,** Turkey tested imports that contain ingredients derived from GE commodities at a rate of twenty percent for products declared as containing GE, and one hundred percent for products without declaration. However, GE commodities have been tested at a rate of hundred percent for almost one year without taking the declaration into consideration. Turkey utilizes a rapid response PRT tests to detect 35S promoters and NOS terminators. Designated local official laboratories conduct import tests and the National Reference Laboratory in Ankara retests when results are contested. At least one sample and test was conducted unofficially under the authority of a local prosecutor at an undesignated university laboratory. Although this occurrence does not represent the official procedures, it is a potential risk to imports. Products that receive a positive detection prior to "nationalization" (customs clearance) may be sent to another country (provided several conditions are met; please contact FAS/Ankara for more details, as the conditions are fluid). The importer of a shipment found to contain an unapproved trait after clearing customs is prosecuted for violating the Biosafety Law.

m. Low Level Presence Policy: Turkey has a zero tolerance for unapproved LLP in food and industrial products, subject to the liability provisions of the Biosafety Law. On May 29, 2014, MinFAL published a change to the regulation that implements the Biosafety Law to define "contamination" and establish a threshold of 0.9% for approved genes in their intended use. Because genes are approved only for feed use, the threshold does not provide any utility to detections in food. MinFAL has yet to clarify the implementation of the definition or threshold. MinFAL intends for the definition and threshold to provide some measure of security from prosecution as "contamination" which means unintentional and beyond the control of the domestic party involved (importer, wholesaler, distributor, retailer, etc.).

Part C: Marketing

a. Market Acceptance: The fear of biotechnology by the Turkish public, producers, retailers and consumers continues. This is mainly due to anti-GE campaigns run by local and international NGOs such as the Chamber of Agricultural Engineers, Greenpeace and the Friends of the Earth, since 2008.

Although public sentiment is resoundingly anti-GE, Turkey is import-dependent for plant-based protein for animal feed. However, the restrictions on the use of GE soybeans prevented industry from crushing (soybean oil can't be used for any purpose but animal feed), which resulted in a decrease in soybeans and an increase in soybean meal imports in 2013. Later, amendments in the regulations and implementations and also new approvals in 2015 have had a positive impact on soybean import, and resulted in significant increase in 2015 compared to past two years. Additionally, despite recent misleading health stories in the news that chicken fed from GE crops would have negative health consequences, consumption of chicken actually was not reduced.

b. Public/Private Opinions: Due to anti-GE campaigns and one-sided reporting in the media, public and private opinion in Turkey are dominated by information on possible hazards from the consumption of products derived from agricultural biotechnology. The public commonly accepts a link between genetic engineering and cancer.

c. Marketing Studies: To date, Post is unaware of any marketing studies that have evaluated Turkish consumer sentiment towards products derived from agricultural biotechnology. Graham Brookes of PG Economics in Great Britain published the study "Economic impacts of the Biosafety Law and implementing regulations in Turkey on the Turkish importing and user sectors" in May 2012. The study concludes "…the on-going annual cost can reasonably be expected to be between $0.7 billion and $1 billion and could be higher."

Part D: Capacity Building and Outreach

a. Activities: Over the last decade there have been training programs conducted by different parties for policy-makers, academics and journalists in Turkey. One of the recent and important ongoing capacity building programs is FAO UNEP sponsored project, which is currently partnering with the Turkish Government and academia to collaborate on Turkey's biosafety system and risk assessment process. They have held workshops in 2015 and continued in 2016.

b. Strategies and Needs: There is a need in Turkey for an honest public dialogue on the use of biotechnology in agricultural production and food and feed products. Dialogue has, to date, been limited to sensationalist claims about the hazards of biotechnology. The scientific condemnation of a study linking GE to cancer received no media coverage, leaving the impression of the original claims in the public's understanding of the technology. Turkish experts carry greater credibility with the public than do those from the United States, industry, and even the European Union. Few experts have been willing to face the public scrutiny of NGO campaigns and media derision, but need to be encouraged to foster the necessary public dialogue. The government of Turkey has not made progress in back-tracking from years of public fear-mongering yet.

In 2014, reportedly 150 companies were defending themselves in the courts for placing unapproved GE traits on the market (though inadvertently - a trait unapproved for use in Turkey, but approved for use in other countries, was reportedly found). The first three were charged with "biological terror". Further regulatory action against the import of enzymes and products that utilize enzymes have damaged the domestic food, feed and agricultural sectors. Multiple layers of monitoring and testing subject importers and retailers to double jeopardy, having received GE-free test results at import, but sampled and tested again on the local market. All of these measures decreased the import of GE products and led an intensive damage in the related sectors which use these products. MinFAL, then, has taken new measures, as mentioned in detail above paragraphs, to decrease the economic and social damage on the related sectors. All these measures taken by MinFAL and new approvals in 2015 accelerated the trade and lowered the number of court cases. However, Turkey's Biosafety Law and its implementing Regulations continue to cause harm to Turkey's agriculture and food sectors due to inharmonious procedures and approvals with the world. Therefore current legislation (Law and the regulations) requires changes or at least an amendment. Changing or amending of a law requires a complex and long procedure in Turkey, but

consensus is building in Turkey that the law does need to be updated. The Biotechnology Strategy and Action Plan of High Planning Council of Turkey will also positively affect the change or amendment of it.

Chapter 2: Animal Biotechnology

Part E: Production and Trade

a. **Product Development:** Article 5 of the Biosafety Law (Law No: 5977), adopted on March 26, 2010, bans the production of genetically engineered animals and plants.
b. **Commercial Production:** Banned.
c. **Exports:** Banned.
d. **Imports:** Banned.

Part F: Policy

a. **Regulation:** Turkey's regulation of agricultural biotechnology is governed by the Biosafety Law (Law No: 5977), adopted on March 26, 2010, and related implementing regulations. Import of transgenic agricultural products is only allowed after approval of each event for each use. For more information, please see Chapter 1 Part B.

b. **Labeling and Traceability:** Products derived from approved GE animals would require a label indicating that it is or contains GE.

c. **Trade Barriers:** Not applicable.

d. **Intellectual Property Rights (IPR):** Post is unaware of any IPR problems in Turkey as the cultivation of GE crops is prohibited under the Biosafety Law. The U.S. Foreign Commercial Service produces a report "Turkey: Country Commercial Guide for U.S. Companies" that contains information on the protection of IPR in Turkey.

e. International Treaties/Fora: Turkey is a member of World Organization for Animal Health (OIE) and Food and Agriculture Organization (FAO) which deal with animal health.

Part G: Marketing

a. **Market Acceptance:** Not applicable.

b. **Public/Private Opinions:** Turkish public opinion is skeptical of benefits from new agricultural technologies, in general.

c. **Market Studies:** Not applicable

Part H: Capacity Building and Outreach

a. **Activities**: None.
b. **Strategies and Needs**: As with plant biotechnology, Turkey needs a public dialogue on the

benefits and credible risks of animal biotechnologies. Key to a productive dialogue is the availability and circulation of credible studies on the benefits and risks of these technologies. A lack of familiarity with the topic also hinders the ability of the media to report on it accurately and distribute credible information. Modern communication, such as social media, could also be a means for the distribution of credible information.

Further Information

For the most up-to-date reports on Turkey's agriculture situation and policies from the U.S. Department of Agriculture Foreign Agricultural Service Office in Turkey, use the search function at http://gain.fas.usda.gov/ or visit our website: http://www.fas.usda.gov/.