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Report Highlights:

Kazakhstan has not announced any changes to its biotechnology policies. Major challenges like climate change, variable weather, monocropping wheat, and the reliance on Eurasian Economic Union (EAEU) member biotechnology regulations could be a future catalyst for Kazakhstan to develop its own biotechnology law. Kazakhstan continues to rely on EAEU regulations in lieu of having its own national standards. While Kazakhstani researchers have had some success in developing new genetically engineered (GE) varietals, the lack of regulatory clarity in Kazakhstan prevents commercialization.

EXECUTIVE SUMMARY:

August 2022 OAA Astana "New Agricultural Technologies and Methods Forum"

A 2015 amendment to the 2003 law "On Seed Farming" restricted new agricultural biotechnology testing and prohibited the commercial production of GE seeds. Since then, there has been little public discourse about expanding the regulation and use of biotechnology in agriculture. The National Center for Biotechnology and other public research institutes have developed some GE products, but further experimentation and commercialization has been limited by the lack of facilitating laws and regulations.

Kazakhstan follows EAEU regulations on the import, export, and use of products derived from most agricultural biotechnologies. Any grains or oilseeds imported into Kazakhstan must first have their lines registered in the EAEU and Russia has the only process to register new lines. This forces Kazakhstan to be solely dependent on GE seed approved by Russia and limits the availability of modern seed technology to Kazakhstani farmers.

Kazakhstan primarily monocrops wheat, a crop that has historically relied on traditional plant breeding methods. Therefore, Kazakhstani authorities have not prioritized developing laws and regulations that would facilitate the development and use of agricultural biotechnologies. However, Russia's invasion of Ukraine and production challenges due to climate change and monocropping practices could spur policy makers to consider developing domestic laws and regulations governing agricultural biotechnology. In December 2021, the Ministry of Agriculture published two policy documents which appeared to call for developing modern seed breeding methods and regulations utilizing biotechnology. Kazakhstan has taken no position on innovative biotechnologies.

Aside from plant biotechnology, there has been very little public or private sector discourse about animal and microbial biotechnologies. The Ministry of Agriculture is seeking ways to make its livestock sector more competitive and explore ways to improve animal feed, which in the future could lead them to consider animal and microbial biotechnologies.

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CHAPTER 1: PLANT BIOTECHNOLOGY

PART A: PRODUCTION AND TRADE

a) RESEARCH AND PRODUCT DEVELOPMENT: Since the 2015 amendment to the Law "On Seed Farming[1]," which prevents full field trials or commercial production of genetic engineering events, research and development has been limited to laboratory greenhouses. The National Agrarian Scientific Education Center (NASEC), under the Ministry of Agriculture, manages 16 agricultural research and education institutes. This group focuses on traditional seed breeding methods. The National Center for Biotechnology (NCB) has a small agricultural research component, which has developed biological fertilizers and pesticides, fungal strains for resistance testing, and new varieties of wheat and potatoes. As a first step toward introducing GE technologies, NCB developed one transgenic cotton variety[2] that is resistant to the herbicide phosphinothricin (glufosinate). However, this cotton variety cannot be field tested or commercialized due to the regulatory environment. As of October 2020, scientists from the M. Aitkhozhin Molecular Biology and Biochemistry Institute under the Ministry of Education and Science developed a new GE potato.[3] The transgenic potato has significantly higher resistance to Potato Virus Y compared to conventional potato breeds. The lines of transgenic potato are reportedly under field trials at the Potato and Vegetable Research Institute, which is operated by the Ministry of Agriculture. Since 2021, there have been no reports of GE crops being developed in Kazakhstan.

[1] The link is available in Russian language only
[2] The link is available in Russian language only.
[3] The link is available in Russian language only

b) COMMERCIAL PRODUCTION: Kazakhstan does not produce crops in significant quantities for which common commercial GE varieties exist. Kazakhstani crop production is dominated by wheat, which accounts for 56 percent of all field crops by area, and 70 percent of all grain and legume production. Corn occupies on average one percent of total planted area. Oilseeds area (e.g., flax, rapeseeds, sunflower, safflower) has been decreasing to roughly 13 percent of total planted area in 2023. Cotton and sugar account for one and 0.5 percent of total planted area respectively. Most foreign seed suppliers have focused on providing hybrid seed to producers.

c) EXPORTS: There is no commercial production of GE crops in Kazakhstan, nor does Kazakhstan export any GE crops.

d) IMPORTS: Imports of GE crops or products derived from GE crops are technically allowed into Kazakhstan according to EAEU regulations. The EAEU includes Belarus, Russia, Armenia, Kyrgyzstan, and Kazakhstan. For instance, the EAEU Technical Regulation on Grain stipulates that grain and oilseeds for either food or feed may only contain GE lines registered in accordance with the legislation of the individual EAEU member states, and that the presence of non-registered GE grain lines shall not exceed 0.9 percent. Because Kazakhstan lacks a process by which to register new lines, Russia has become the default approver. Please see GAIN Agricultural Biotechnology Annual Report for the Russian Federation for a list of lines registered in Russia/EAEU for importation. These approvals are also recognized in Kazakhstan. Kazakhstan imports small amounts of corn and soybeans. In 2022, soybean imports reached 33,569 metric tons (MT), a 3 percent increase from 32,420 MT in 2021. Most soybeans are imported from Russia. Kazakhstani imports of soybean meal in 2022 reached 70,556, mainly from Russia. Kazakhstan's law "On Seed Farming" specifies that GE seeds are prohibited for planting. For more information about Kazakhstan's agricultural products and food imports, please, see latest Food and Agricultural Import Regulations and Standards Report.

e) FOOD AID: Kazakhstan is not a food aid recipient. Historically, Kazakhstan shipped relatively small amounts of wheat, barley, and vegetable oil to Kyrgyzstan and Afghanistan as humanitarian aid. In 2021, Kazakhstan provided in-kind food aid of grain, flour, vegetable oil, and similar products to some countries in Central Asia (Tajikistan, Uzbekistan, and Kyrgyzstan) and Afghanistan. Because all crops grown in Kazakhstan are non-GE, all provided food aid would also be non-GE.

f) TRADE BARRIERS: All imported GE grains and oilseeds must have their lines registered in the EAEU prior to entering Kazakhstan, and the presence of non-registered lines cannot exceed 0.9 percent. Kazakhstan's imports of U.S. corn and soybeans (and soybean products) are minimal, in part because the GE lines are not registered. In 2012 and 2013, Kazakhstan and Russia both banned the importation of GE corn NK603 because of a study published by a French scientist questioning its safety. The European Food Safety Authority (EFSA) responded to this study by stating that it was "of insufficient scientific quality to be considered as valid for risk assessment" and that "such shortcomings mean that EFSA is presently unable to regard the author's conclusions as scientifically sound." Russia removed the ban without any public acknowledgement, and Kazakhstan has not made public the status of its ban. Given the lack of information regarding its status, no one has attempted to import this line of corn. Kazakhstan continues to test for the presence of GE content in foods, leading to periodic removal of products from store shelves. In September 2020, the Ministry

of Health removed South Korean noodles and Turkish cookies from stores due to the detection of GE soy content.

PART B: POLICY

a) REGULATORY FRAMEWORK: The 2003 law "On Seed Farming" included provisions to allow the sowing of GE seeds. In November 2015, the law was amended[4] to become more restrictive. Article 13 of the law expressly prohibited commercial use and planting of crops derived from GE. While previously exceptions were in place to allow for field trials of GE seeds, they now can only be planted in laboratory greenhouses. This change limits testing and prevents commercial production.

There may be a new government push to develop domestic agricultural biotechnology regulations. Kazakhstan's 2021-2030 Agricultural Development Policy Document, published in December 2021, noted that it would focus on the selection and breeding of new plant varieties using new methods based on molecular biology and genetic engineering to balance sustainability with climate change. The document called for regulating the circulation of genetically modified seeds. The action plan within the policy document noted the intention to adopt legislative measures to join the International Union for the Protection of New Varieties of Plants by July 2024. The action plan further described developing regulations to control genetically modified seeds and planting material by 2023. The Law on Biological Safety No122-VII ZRK[5] from May 21, 2022, regulated pathogenic biological agents for the purposes of biological safety.

Legal term (in Russian)	Legal Term (in English)	Laws and Regulations where term is used	Legal Definition (in English)
генетически модифицированные объекты -	Genetically modified objects	Food Safety Law No 301; July 21, 2007[6]	Raw materials and products of plant and (or) animal origin, derived using genetic engineering methods, including from genetically modified sources, organisms

Kazakhstan defines genetically engineered products "raw materials and products of plant and (or) animal origin, derived using genetic engineering methods, including from genetically modified sources or organisms". There is no regulatory distinction made between GE plant products containing DNA in the final form and refined or processed products that do not. Kazakhstan does not make a distinction between living and non-living GE plant products. Nor is there a regulatory distinction between the regulatory approval/authorization treatment for food, feed, fiber, pulp, processing, and environmental release.

[4] The link is available in Russian language only.
[5] The link is available in Russian language only.
[6] The link is available in Russian language only

Testing of planting seed is done by the State Commission for Varieties Testing, under the Ministry of Agriculture. Testing of new domestic varietals of seeds are conducted by the State Commission within one or two vegetation periods. Foreign varietals are tested for approval within four years for annuals and within six years for perennials. After varieties of seeds are tested and approved they are included in the State Registry of Selection Achievements, Recommended for Use in Kazakhstan. However, the testing of foreign varietals of seeds is not required if accompanied with the results of testing from an authorized body for a foreign country. This process applies to GE seed first approved through the EAEU in Russia and non-GE seed varietals, that enter the market for the first time. Re-registration is not required and there are no expirations outlined in the State Registry of Selection Achievements, Recommended for Use in Kazakhstan.

The Law on Biological Safety No122-VII ZRK from May 21, 2022, regulated pathogenic biological agents for the purposes of biological safety. There is no separate biosafety committee/authority in Kazakhstan. However, interactions are done through interagency coordination.

The Committee for Sanitary Epidemiological Surveillance of the Ministry of Health is responsible for food safety. This Committee may prohibit the sale of GE products that do not meet requirements. The Committee of the Veterinary Control and Surveillance of the Ministry of Agriculture monitors veterinary conditions within Kazakhstan and enforces legal requirements for animal health. This Committee regulates feed and veterinary matters at domestic borders, the country's interior, and is responsible for protecting the country from animal diseases. The Agricultural State Inspection Committee of the Ministry of Agriculture monitors phytosanitary conditions within the country and enforces plant health for plant seeds. The Ministry of Ecology and Natural Resources is responsible for environmental safety. Together these bodies all have a role in governing and enforcing biotechnology regulations.

Political fears over crop failure and challenges like climate change are likely to positively influence long-term regulatory decisions in favor of allowing greater use of GE technology. This year Parliamentarians are concerned about excessive rains, which threaten grain harvesting. Kazakhstan needs access to seed technology that is more resilient to yield loss or drag due to climatic conditions like flood, drought, salinity, and heat. Grain producers are concerned about seed availability for the next marketing year due to excessive rains during harvest, which decreased overall quality and the quantity of seed. The Government has suggested opening reserves to farmers to source seed. These kind of climatic impacts on crop production are becoming more common in Kazakhstan and harder to combat without widespread access to GE crops.

b) APPROVALS/AUTHORIZATIONS: Because Kazakhstan lacks its own legislation to regulate GE approvals, the registration of GE lines for the EAEU for use in food is done by Russia's Federal Service for Surveillance of Consumer Rights Protection and Human Welfare (*Rospotrebnadzor*). GE lines for use in feed are approved by Russia's Federal Veterinary and Phytosanitary Surveillance Service (VPSS). For new EAEU regulatory updates and the list of approved lines please see the most recent GAIN Agricultural Biotechnology Annual Report for the Russian Federation.

c) STACKED OR PYRAMIDED EVENT APPROVALS/AUTHORIZATIONS: In the absence of its own regulations, Kazakhstan relies on EAEU guidance. Without regulations for stacked or pyramided event approvals, they are all effectively banned.

d) FIELD TESTING: Unless the government redrafts its law "On State Regulation of Genetic Engineering Activities," it is not expected that field trials will occur.

e) INNOVATIVE BIOTECHNOLOGIES: Kazakhstan has not addressed the regulation of plant products derived from genome editing. There has been little attention paid to these technologies, except in scientific circles.

f) COEXISTENCE: Not applicable since there is no mechanism for GE crop cultivation.

g) LABELING AND TRACEABILITY: Labeling rules are covered by the Customs Union Technical Regulation on Labeling, which came into force on July 1, 2013. This regulation states that all products containing more than 0.9 percent GE-ingredients must be labeled as such. The regulation states that it is voluntary to label food products as non-GE.

h) MONITORING AND TESTING: In 2020, the National Expert Assessment Center of the Committee for Goods and Services Quality Control and Safety of Kazakhstan's Health Ministry detected GE content in instant noodles from South Korea and cookies from Turkey. The Center reported that lab testing identified GE soybeans in concentrations exceeding the 0.9 percent maximum, while the manufacturer labels did not contain information on GE content. Local government officials sought to locate these products and remove them from sale. This action appears to be part of the Center's regular testing program, though the details of testing frequency and methodology were not published. Since then, the Center has not released similar reports.

i) LOW LEVEL PRESENCE (LLP) POLICY: According to EAEU regulations, food products may contain up to 0.9 percent of unapproved GE products.

j) ADDITIONAL REGULATORY REQUIREMENTS: The law "On Seed Farming" prohibits the planting of GE seeds.

k) INTELLECTUAL PROPERTY RIGHTS (IPR): The law "On Selection Achievements Copyright" allows for patents for plant and crop improvements.

l) CARTAGENA PROTOCOL RATIFICATION: Kazakhstan ratified the Cartagena Protocol in 2008.

m) INTERNATIONAL TREATIES AND FORUMS: Kazakhstan is member of the WTO, the World Health Organization (WHO), Codex Alimentarius, and the International Plant Protection Convention. At the 40th session of the Codex Alimentarius Commission held in 2017, Kazakhstan was elected as a coordinator of the FAO/WHO Coordination Committee for Europe for 2018-2019. However, Kazakhstan has not actively participated in discussions or announced positions with regards to agricultural biotechnology. Kazakhstan is in the process of becoming a signatory of the International Union for the Protection of New Varieties of Plants (UPOV) and plans to join by July 2024.

n) RELATED ISSUES: None.

PART C: MARKETING

a) PUBLIC/PRIVATE OPINION: Since Kazakhstan produces few crops for which commercial GE varieties exist, promoting GE varieties has not been of great importance to producer groups or the Ministry of Agriculture. Two issues could stimulate more thought among Kazakhstani stakeholders about the potential benefits of agricultural biotechnology. The 2021 and 2022 growing year was particularly hot and dry across Central Asia, contributing to a 20 decrease in grain yields. Many producers and government stakeholders are becoming more receptive to understanding how products derived from agricultural biotechnology could mitigate climate change. Second, Russia's invasion of Ukraine caused considerable logistical challenges to importing planting seeds, machinery, fertilizers, and other agricultural inputs. This has led some in Kazakhstan to reconsider how much the country should rely on imported agricultural inputs, many of which traditionally come from Russia and the European Union. As a result, some have called for utilizing modern agricultural biotechnologies and plant breeding methods to enhance self-sufficiency in light of geopolitical uncertainty. Still there is a general lack of knowledge and understanding of agricultural biotechnology amongst producers, although most express a desire for learning how agricultural biotechnology can increase production and decrease costs. The press have frequently written stories about Kazakhstan's potential for "natural" food production given its large territory and small population.

b) MARKET ACCEPTANCE / STUDIES: The public is generally apprehensive about purchasing products containing GE material. No known marketing studies exist on the acceptance of GE plants or related products.

CHAPTER 2: ANIMAL BIOTECHNOLOGY

PART D: PRODUCTION AND TRADE

a) RESEARCH AND PRODUCT DEVELOPMENT: There are no known GE animal or livestock cloning projects under development.

b) COMMERCIAL PRODUCTION: The government has made increasing cattle production a top agricultural priority. While this strategy includes importing pedigree breeding animals, semen, and embryos, it has not encouraged research of GE animals or clones. A recent ban on beef exports has challenged profitability and caused herds to shrink.

c) EXPORTS: Kazakhstan does not export GE animals or livestock clones.

d) IMPORTS: Kazakhstan does not import GE animals or livestock clones, but there are no known restrictions in place.

e) TRADE BARRIERS: Kazakhstan has imported U.S. livestock in substantial quantities, and there are no known GE- or cloning-related trade barriers.

PART E: POLICY

a) REGULATORY FRAMEWORK: The approval process and governing bodies responsible for regulating biotechnology in the draft law "On State Regulation of Genetic Engineering Activities" did not differentiate between plant and animal biotechnology. Since the draft's withdrawal, there is no regulatory framework for developing animal biotechnology. Kazakhstan has no legislation and/or regulations related to the development, use, import, and/or disposal of livestock clones, biotech animals, and/or products derived from these animals or their offspring. Political concerns due to climate change, increasing heat, and other factors that could impact animal agriculture could help incentivize adoption of new regulations or laws.

   The Committee for Sanitary Epidemiological Surveillance of the Ministry of Health is responsible for food safety. This Committee may prohibit the sale of GE products that do not meet requirements. The Committee of the Veterinary Control and Surveillance of the Ministry of Agriculture monitors veterinary conditions within Kazakhstan and enforces legal requirements for animal health. This Committee regulates feed and veterinary matters at domestic borders, the country's interior, and is responsible for protecting the country from animal diseases. The Ministry of Ecology and Natural Resources is responsible for environmental safety.

b) APPROVALS/AUTHORIZATIONS: Not applicable.

c) INNOVATIVE BIOTECHNOLOGIES: Kazakhstan has not addressed the regulation of animals derived from genome editing.

d) LABELING AND TRACEABILITY: Not applicable.

e) ADDITIONAL REGULATORY REQUIREMENTS: Not applicable.

f) INTELLECTUAL PROPERTY RIGHTS (IPR): There are no patent rights established for GE animals or cloned products.

g) INTERNATIONAL TREATIES AND FORUMS: Kazakhstan is member of the WTO, the WHO, Codex Alimentarius, and the World Organization for Animal Health (OIE). However, the country has not actively participated in discussions related to animal biotechnologies, nor has it made noteworthy positions at these forums.

h) RELATED ISSUES: Not applicable.

PART F: MARKETING

a) PUBLIC/PRIVATE OPINIONS: Not applicable.

b) MARKET ACCEPTANCE/STUDIES: There are no known market studies on the marketing of GE animals.

CHAPTER 3: MICROBIAL BIOTECHNOLOGY

PART G: PRODUCTION AND TRADE

a) COMMERCIAL PRODUCTION: Not applicable.

b) EXPORTS: There are neither official statistics nor estimates on exports of microbial biotechnology products. However, Kazakhstan exports alcoholic beverages, dairy products, and processed products that may contain microbial biotech-derived food ingredients.

c) IMPORTS: There are neither official statistics nor estimates on imports of microbial biotechnology products. Kazakhstan imports microbial biotech-derived food ingredients, such as enzymes that are traditionally used in alcoholic beverages, dairy products, and processed products. Likewise, Kazakhstan imports alcoholic beverages, dairy products, and processed products that may contain microbial biotech-derived food ingredients.

d) TRADE BARRIERS: Not applicable.

PART H: POLICY

a) REGULATORY FRAMEWORK: Kazakhstan has not addressed issues related to microbial biotechnology in regulation. EAEU regulations limiting GE content to 0.9 percent in food and feed would also apply to microbial biotechnology. Kazakhstan has not established the regulatory process related to the commercial production, use, and/or import of biotechnology-derived microbes or microbial biotech-derived food ingredients.

b) APPROVALS/AUTHORIZATIONS: There is no existing legal framework to approve microbial biotechnology.

c) LABELING AND TRACEABILITY: Labeling rules that apply to other forms of biotechnology would also apply.

d) MONITORING AND TESTING: Not applicable.

e) ADDITIONAL REGULATORY REQUIREMENTS: Not applicable.

f) INTELLECTUAL PROPERTY RIGHTS (IPR): Not applicable.

g) RELATED ISSUES: Not applicable.

PART I: MARKETING

a) PUBLIC/PRIVATE OPINIONS: Not applicable.

b) MARKET ACCEPTANCE/STUDIES: There are no known market studies on microbial biotechnology in Kazakhstan.

Attachments:

No Attachments