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## **Report Name:** Agricultural Biotechnology Annual

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**Prepared By:** Arlene Villalaz

**Approved By:** Andrew Hochhalter

### **Report Highlights:**

Although Panama highlighted the use of biotechnology in its Agricultural State Policy Law 352 of 2023, Panama has not yet established the implementing regulations of Law 48 of 2002, which created the National Commission of Biosafety for Genetically Modified Organisms. This commission does not hold regular meetings and is not approving any requests for GE products. The Inter-American Institute for Cooperation on Agriculture (IICA) by request of the Ministry of Agricultural Development of Panama, provided technical assistance on the development of implementing regulations on biotechnology and new production technologies, in order to have clear procedures regarding the approval process and coordination among all of the competent government agencies in charge of authorizing the import, research, production and commercialization of agricultural biotechnology and other new production technologies in Panama. This draft proposal has not yet been approved.

## Executive Summary:

In 2023 the United States exported a total of \$879 million in agricultural products to Panama, of which \$221.7 million worth were corn, distiller's dried grains with soluble (DDGS), soybeans and soybean meal used for animal feed. Panama imports genetically engineered (GE) corn, soybeans and soybean meal from the United States, Argentina, Brazil, and Paraguay, which is intended for animal feed. However, the Panamanian Government does not require notification of these imports as GE products.

There is no plant biotechnology production in Panama due to the lack of implementing regulations related to the laws on biosafety and biotechnology, a situation that generates burdensome and unclear rules of procedures for all Government of Panama (GOP) agencies involved in this matter. However, FAS Panama expects positive change on this matter with the future development of implementing regulations on biotechnology and new production technologies. This will facilitate the approval process and coordination among all the competent government agencies in charge of authorizing the import, research, production and commercialization of agricultural biotechnology and other new production technologies in Panama.

Panama made a policy change regarding Genetically Engineered (GE) plants, seeds, and animals in 2023, through the Law No. 352 of January 18, 2023, which establishes the State Agri-food Policy and dictates other provisions, to adopt new technologies for agricultural production, including genetically engineered products. Regardless, since 2002, Panama has not established the implementing regulations of Law 48 of 2002, which created the National Commission of Biosafety for Genetically Modified Organisms (CNB in Spanish). This commission does not hold regular meetings and is not granting approvals for GE products.

Panama rejected an application for research of GE pink pineapples. A request to approve research for GE strains of New World Screwworm (*Cochliomyia hominivorax*-NWS) flies is still pending. This research will be conducted by the Panama – United States Commission for the Eradication and Prevention of Screwworm (COPEG in Spanish).

Panama does not export any GE plant or animal products. And there are no current biotechnology-related trade barriers affecting U.S. exports to Panama. Import requirements are described in the following report: [Panama's Food and Agricultural Import Regulations and Standards Report](#)

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## ***CHAPTER 1: PLANT BIOTECHNOLOGY***

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

#### **a) RESEARCH AND PRODUCT DEVELOPMENT:**

From 2012 to 2015 there were several field trials for Dupont-Pioneer’s “*Herculex P*” (DAS-01507-1) corn seed variety. However, the company ultimately decided not to move forward with the commercialization.

The *Biosafety Sectorial Committee on Agriculture* rejected the request for approval of a GE pink-fleshed “Rosé” pineapple variety by a local company.

It is important to note that without implementing regulations for the laws on biosafety and biotechnology, approval delays will continue.

**b) COMMERCIAL PRODUCTION:**

The only GE product approved for commercial cultivation is the DuPont-Pioneer's "*Herculex I*" (DAS-01507-1) corn seed variety. However, it has not been commercialized because the Ministry of Health did not grant its approval for human consumption. The application sought permission only for animal feed use.

**c) EXPORTS:**

Panama does not export any GE crops/products.

**d) IMPORTS:**

Panama approved the DuPont-Pioneer the "*Herculex I*" (DAS-01507-1) corn variety for import for feed use. Panama imports GE corn and soybeans from the United States, Argentina, Brazil, Paraguay, that are intended for animal feed. However, the Panamanian Government does not require notification of these imports as GE products for animal feed.

**e) FOOD AID:**

Panama is not a currently food aid recipient, nor does it provide food aid. However, the [World Food Programme's Regional Logistics Center for Humanitarian Assistance \(CLRAH\)](#) is located in Panama City, Panama, and uses the logistical facilities of the Panama Canal, maritime ports, highways, railroads, and airlines.

**f) TRADE BARRIERS:**

There are no current biotechnology-related trade barriers affecting U.S. exports to Panama.

However, the Office of Agricultural Affairs in Panama City, Panama is vigilant of any proposed draft Ministerial Resolution to modify the current regulations, aiming to create trade barriers to GE food products, such as the one published by the Ministry of Health of Panama on April 17, 2023, the "[National and International Public Consultation to Review the Content of the Draft Resolution on Genetically Modified Foods](#)"

The objective of the Ministerial Resolution is to regulate Law 48 of August 8, 2002, creating the National Biosecurity Commission for Genetically Modified Organisms and dictating other provisions, which establishes and coordinates the policies of the Panamanian State related to the regulation of the management of genetically modified organisms and their derivatives and products that contain them, to

prevent risks and minimize impacts on the environment, biological diversity, human health and agricultural production that may be caused as a result of activities carried out with these organisms.

Until date, the draft Ministerial Resolution has not been approved, since there was much opposition from the private sector, and on July 1, 2024, there was a change of government administration.

The new government administration of President Jose Raul Mulino (2024-2029) has not made any proposals regarding agricultural biotechnology.

## ***PART B: POLICY***

### **a) REGULATORY FRAMEWORK:**

<b>Legal term (in official language)</b>	<b>Legal Term (in English)</b>	<b>Laws and Regulations where term is used</b>	<b>Legal Definition (in English)</b>
Organismo Vivo Modificado (OVM)	Living Modified Organism (LMO)	<ul style="list-style-type: none"> <li>• Law 72 of December 26, 2001.</li> </ul>	Any living organism that possesses a novel combination of genetic material obtained through the use of modern biotechnology.
Organismo Genéticamente Modificado (OGM)	Genetically Modified Organism (GMO)	<ul style="list-style-type: none"> <li>• Law 48 of August 8, 2002.</li> <li>• Legislative Act No. 855 of October 5, 2022</li> </ul>	Organism in which the genetic material has been modified by means of gene technology, in a way that does not occur naturally by multiplication and/or natural recombination.
Material Transgénico	Transgenic Material	<ul style="list-style-type: none"> <li>• Law 47 of July 9, 1996.</li> </ul>	Artificially modified organism to which recombinant genes have been transferred with the potential to present predictable effects.

In 2015, [Law 8 of March 25, 2015](#) (in Spanish) was approved, by which the former National Authority of Environment (ANAM) was elevated to Ministry of Environment of the Republic of Panama. The Ministry of Environment is the Focal Point for the Cartagena Protocol on Biosafety in Panama.

The absence of clear procedures regarding the approval process, and lack of coordination between all the competent government agencies in charge of authorizing the import of GE products into Panama causes delays to the approval of GE events when government approval is requested through the *National Commission of Biosafety for Genetically Modified Organisms* (CNB in Spanish).

On September 29, 2021, the Government of Panama requested technical assistance from the Inter-American Institute for Cooperation on Agriculture (IICA) to develop implementing regulations on biotechnology and new production technologies. The GOP made the request to clarify procedures regarding the approval process and coordination among all the competent government agencies in charge of authorizing the import, research, production and commercialization of agricultural biotechnology and other new production technologies in Panama. This draft proposal has not yet been approved.

The CNB is the authority that recommends the approval of GE food and feed, and for environmental releases. It is composed of:

**1) Competent National Authorities:**

- [Ministry of Agricultural Development](#) (MIDA, in Spanish)
- [Ministry of Health](#) (MINSAL, in Spanish)
- [Ministry of Commerce and Industry](#) (MICI, in Spanish)
- [Ministry of Foreign Relations](#) (MIRE, in Spanish)
- [Ministry of Environment](#) (MIAMBIENTE, in Spanish)
- [Panamanian Food Agency](#) (APA, in Spanish)
- [Authority of the Aquatic Resources of Panama](#) (ARAP, in Spanish)

**2) Institutions for Technical Support:**

- [National Secretariat for Science, Technology and Innovation](#). (SENACYT, in Spanish)
- [Institute of Scientific Research and High Technology Services](#) (INDICASAT AIP.)
- [Agricultural Innovation Institute of Panama](#) (IDIAP, in Spanish)
- [Technological University of Panama](#) (UTP, in Spanish)
- [University of Panama](#)
- [Gorgas Memorial Institute for Health Studies](#) (ICGES, in Spanish).
- [Authority for Consumer Protection and Defense of the Competition](#) (ACODECO, in Spanish)

The current objectives of the CNB are:

1. Promote and monitor the implementation of the law that will amend the Law 48 of 2002, which created the CNB,

2. Develop, promote, and monitor compliance of the regulations and manuals of procedures for GE products,
3. Strengthen and monitor the [Biosafety Clearing House \(BCH\) of Panama](#), and
4. Propose the establishment of capacity building in the institutions responsible for biosafety regulation.

The National legal framework for agricultural biotechnology is based on the following laws (all in Spanish):

- 1) [Law 72 of December 26, 2001](#), by which Panama approved the Cartagena Protocol on Biosafety; it entered into force on January 29, 2000.
- 2) [Law 48 of August 8, 2002](#), that created the CNB, and dictates other dispositions.
- 3) [Resolution CNB No. 06-2014](#), established the Internal Regulation for the CNB.
- 4) [Law 47 of 1996](#), regulates MIDA's National Directorate of Plant Health, and establishes its functions. One of those functions, written on article 2, paragraph 9: "To promote the development and use of biotechnology as a means to solve the problems of the sector, as well as the surveillance, registration and control of transgenic material".
- 5) [Law 23 of 1997](#), which regulates the Animal Health and Agricultural Quarantine.
- 6) [Law 8 of March 25, 2015](#), which created the Ministry of Environment of the Republic of Panama.
- 7) [Law 44 of November 23, 2006](#), that creates the Authority of the Aquatic Resources of Panama (ARAP), unifies the different competences in marine-coastal resources, aquaculture, fishing and related activities of the public administration, and dictates other provisions.
- 8) [Law 206 of March 30, 2021](#), which creates the Panamanian Food Agency (APA) and eliminates the Panamanian Food Safety Authority (AUPSA).
- 9) [Law No. 352 of January 18, 2023](#), which establishes the State Agri-food Policy and dictates other provisions (PADE in Spanish).

The Law 72 of 2001, being an international agreement, is in force but has not been fully implemented.

Law 48 of 2002 was implemented on February 26, 2011, with a first meeting of Commissioners. The Commission Presidency rotates among the Ministers. The Commission is in charge of drafting and implementing the regulations for use, import, commercialization, and research of GE products, and oversees all aspects of production, introduction, consumption, etc. for all biotech products.

The CNB makes a recommendation for the competent authority to authorize the use, production, introduction or consumption of GE events. The final decision will be made through a Ministerial Resolution of the competent authority, considering the CNB and the respective Biosafety Sectorial Committee technical risks assessment and recommendation.

The Minister of Commerce and Industry is the current chair of the CNB. The Presidency of the CNB rotates among its members, annually.

There are three Biosafety Sectorial Committees, under the CNB, which conduct risk analysis and risk assessments on a case-by-case basing using science-based evidence:

- a) [Biosafety Committee on Agriculture](#) (in Spanish): Responsible for conducting risk analysis, risk assessments, monitoring and tracking of all activities for use, research, restricted management,



laboratory testing, release to the environment, greenhouse, and experimental batches of “GMOs” for agricultural uses, such as use as seeds or animal feeds.

b) **Biosafety Committee on Public Health** (in Spanish): Responsible for conducting risk analysis, risk assessments, monitoring and tracking of all activities for use, research, restricted management, laboratory testing, release to the environment, technological development of GE products that may affect human health, such as those intended for human consumption, or for GE animals used in medical research).

c) **Biosafety Committee on Environment** (in Spanish): Responsible for conducting risk analysis, risk assessments, monitoring and tracking of all agricultural biotechnology activities related to use, research, restricted management, laboratory testing, release to the environment, or greenhouse production, as well as use of unprocessed GE products for feed consumption, ornamental plants and bioremediation through microorganisms.

All the [resolutions issued](#) by these Biosafety Sectorial Committees can be found at the Biosafety Clearing House (BCH) of Panama, in Spanish language.

The following ministries and authorities, along with their respective scope of jurisdiction, are the competent authorities who will make the final decision, depending on the recommendation of the CNB:

- The **Ministry of Agricultural Development (MIDA)** is the competent national authority to regulate, control, approve and monitor the use, import, export, research, experiment, release to the environment, reproduction and commercialization and management of GE products such as live animals, semen and embryos, transgenic plants, bio-control agents and seeds for agricultural production.
- The **Ministry of Health (MINS)** is the competent national authority to regulate, control, approve and monitor the use and management of GE products and biotechnology developments, conducted in national territory, affecting human health and the establishment of biosafety standards required for human protection.
- The **Ministry of Commerce and Industry (MICI)** is the competent national authority responsible for ensuring that negotiations and international trade agreements that involve the use of GE products and biotechnology transfer do not affect domestic production and investment, the environment, biodiversity and human health, and ensures the best interests of Panama.
- The **Ministry of Environment (MIAMBIENTE)** is the competent national authority for the implementation of the Cartagena Protocol on Biosafety and of the Convention on Biological Diversity, as the focal point of Panama, as well as management and environmental management of natural heritage and biodiversity of Panama. MIAMBIENTE has the power to regulate and control access to and use of biogenetic resources in general, and establish, approve and monitor compliance with the rules for risk assessment procedures for the release into the environment, and monitor mitigation impacts on biodiversity and the environment, including the protected areas.

- The **Panamanian Food Agency (APA)** is the government agency that is a single window to process all requests for import, transit, export, and transboundary movement of food and feed into Panama.
- The **National Secretariat of Science, Technology and Innovation (SENACYT)**, is the competent national authority for the promotion of research for the development and transfer of biotechnology in general, and for the regulation of GE products for use in scientific research.
- The **Authority of Aquatic Resources of Panama (ARAP)** is the entity with responsibility for the authorization, control, supervision, monitoring, and release to the aquatic environment of GE aquatic organisms that are located outside of protected areas.
- The **Authority for Consumer Protection and Defense of the Competition (ACODECO)** is the entity responsible for protecting and ensuring the process of free economic competition, eliminating monopolistic practices and other restrictions in the efficient functioning of markets for goods and services, monitoring food labeling compliance and preserving the best interests of consumers in Panama.

The plethora of GOP agencies making decisions on GE plants and animals creates a management problem and results in stringent, unclear procedures that delay decision-making on biotechnology issues.

[Law No. 352 of January 18, 2023](#), which establishes the State Agri-food Policy and dictates other provisions (PADE in Spanish), dictates the following State policy regarding “GMOs”:

*“Article 62. The Ministry of Agricultural Development will guide and regulate the use of resources, without conflicting with the competence of the National Biosafety Commission and the ministries and authorities that comprise it, in order to ensure technological change in production and the competitiveness of the agricultural sector is strengthened.*

*Article 63. The State, through the Ministry of Agricultural Development and the National Biosafety Commission, will coordinate the policies related to the regulation, the importation of the use of genetically modified organisms, products and their derivatives and products that contain them to avoid effects on biological diversity, prevent risks and minimize impacts on the environment, human health and agricultural production that may be caused as a result of the activities carried out with these organisms.*

*Article 64. The Ministry of Agricultural Development will promote the transition from conventional agricultural production towards efficient production methodologies in the use of resources and sustainable with the environment.”*

#### **b) APPROVALS/AUTHORIZATIONS:**

The GOP, under Resolution CNB No. 05-2012 of August 2, 2012, of the CNB authorized cultivation of DuPont-Pioneer’s “Herculex I” (DAS-01507-1). However, the company decided not to commercialize this event because the Ministry of Health did not approve the product for human consumption. The intended use of the product was for animal feed.

**c) STACKED OR PYRAMIDED EVENT APPROVALS:** There are no special regulatory treatments for these event approvals. They are treated and reviewed as single GE events.

**d) FIELD TESTING:**

There is no specific policy for managing confined field trials. The CNB authorizes approvals for field trials.

The GOP conducted two official field trials during agricultural crop year 2012-2013 in the province of Los Santos, Panama, using 2,011 bags of the “Herculex I” corn seed. These were conducted with the technical supervision of the *Panamanian Agricultural Research Institute* (IDIAP, in Spanish) and the assistance of the Panamanian importing company.

The first field trial the GOP evaluated: an assessment of pollen dispersal; assessment of populations of insects on crops of corn “Herculex I”; evaluation of biological efficacy; and agronomic validation. The second field-trial evaluated biological efficacy.

**e) INNOVATIVE BIOTECHNOLOGIES**

Panama has not determined the regulatory status or policy for innovative biotechnologies such as genome editing.

**f) COEXISTENCE:**

Panama applies international standards set by the CODEX Alimentarius and ISO Guide 65 governing organic production and operation process of certifying companies producing organic products. Panama has been increasing the number of farms that are exporting to the European Union using MIDA’s National Directorate of Plant Health Organic production certification. MIDA enforces a prohibition on production of GE crops in a radius near organic crops to avoid cross pollination between a GE crop and an organic crop. This authority is based on: National Legislation for Organic production, Law 8 of January 24, 2002, Executive Decree of August 11, 2004, and Ministerial Resolution No. DAL-067.ADM-05 of December 9, 2005.

**g) LABELING AND TRACEABILITY:**

At the international level, Panama accepts the *CODEX Alimentarius* recommendation of voluntary labeling, supporting a policy of not requiring specific mandatory labeling for biotech products, a principle also applied in Panama for all food products, as established in Article 36 of [Law 45 of October 31, 2007](#), in Spanish.

**h) MONITORING AND TESTING:**

Panama does not currently have a monitoring and testing program for GE products.

**i) LOW-LEVEL PRESENCE (LLP) POLICY:**

Panama does not currently have a Low-Level Presence (LLP) policy.

**j) ADDITIONAL REGULATORY REQUIREMENTS**

Prior to use for cultivation, the GE seed has to be registered at the *National Committee of Seeds* for its registration for commercialization. [The National Committee of Seeds](#) is under MIDA's structure. There are currently no GE seeds registered.

**k) INTELLECTUAL PROPERTY RIGHTS (IPRs):**

Panama is party to other international bodies related to intellectual property rights (IPR), which address plant patents, copyright protection, and registration requirements. It is also a member of the *UPOV Convention and the International Treaty on Plant Genetic Resources for Food Agriculture*, among others.

The U.S.-Panama Trade Promotion Agreement, which entered into force on October 31, 2012, has a chapter on [Intellectual Property Rights \(chapter 15\)](#).

**l) CARTAGENA PROTOCOL RATIFICATION:**

Panama is an active party of the *Cartagena Protocol on Biosafety*, under the *Convention of Biological Diversity*. On May 3, 2011, Panama signed the *Nagoya – Kuala Lumpur Supplementary Protocol on Liability and Redress*.

**m) INTERNATIONAL TREATIES AND FORUMS:**

To date, Panama has not negotiated any bilateral agreement or memorandum of understanding with any other country regarding GE products.

Panama is a member of the International Plant Protection Convention (IPPC), the CODEX Alimentarius and the World Organization for Animal Health (WOAH). Because of a lack of resources to send a GOP representative to international discussions related to GE plants and animals, Panama has not been very active in this area, except for discussions on the Cartagena Protocol.

**n) RELATED ISSUES:**

None.

**PART C: MARKETING**

**a) PUBLIC/PRIVATE OPINIONS:**

Most agriculture professionals graduate from local universities that lack advanced training in modern developments in biotechnology. This may hurt perceptions of agricultural biotechnology by many in Panama, including those who tend to distrust big industries and new methods of production of food products. There are two private consumers' associations that express concern about a lack of protection from authorities for consumers of medicines and some food products, mainly from Asia. This could lead to rejection of this technology from consumers and the public sector, depending on the information they receive in the future.

**b) MARKET ACCEPTANCE/STUDIES:**

From time to time, local newspapers publish articles (that appear to come from foreign sources) advising of the alleged dangers to humans posed by foods prepared with "GMOs", and of the

supposedly catastrophic impact on the environment if “GMOs” are produced in the country. With less frequency, articles are published that talk about the benefits of GE products. For example, the *Serilini* study on rats using GE corn caused the Panamanian consumers association to make public statements about not trusting products made from GE corn. When the *Serilini* study was refuted by the European scientific organizations due to lack of scientific and reliable information, the negative public perception of agricultural biotechnology was reduced.

In Panama there is a consumer trend to look for processed food products with “Non-GMO verified product” labeling.

There have been no market studies in Panama to assess consumer acceptance of GE products.

## ***CHAPTER 2: ANIMAL BIOTECHNOLOGY***

### ***PART D: PRODUCTION AND TRADE***

#### **a) RESEARCH AND PRODUCT DEVELOPMENT:**

The CNB, through Resolution CNB No. 08-2017 of October 5, 2017, granted approval for the release of GE strains of New World Screwworm (*Cochliomyia hominivorax-NWS*) flies into the environment as part of a second phase of research by the [Panama – United States Commission for the Eradication and Prevention of Screwworm](#) (COPEG). This phase of research uses a male only strain for the biological control of the Screwworm disease, which will reduce the cost of the program, and benefit Central American and North American livestock production, including benefits to animal and human health. There is a pending request to the *Sectorial Biosafety Committee on Agriculture* to continue the research of GE strains of New World Screwworm (*Cochliomyia hominivorax-NWS*) flies.

There are no other agriculturally - relevant GE or cloned animals in development in Panama that would be commercialized in the next year.

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

On April 16, 2019, *AquaBounty*, a U.S. company that developed GE salmon in Boquete, Panama closed its production and research facilities. *AquaBounty* left Panama due to the Ministry of Health of Panama’s deferred decision on the approval of local consumption. Approval would have required additional studies beyond those already conducted for the Canadian and United States’ Food and Drug Administration approvals.

#### **c) EXPORTS:**

None

#### **d) IMPORTS:**

None.

**e) TRADE BARRIERS:**

There are no trade barriers at this time that would affect U.S. exports for GE animals, cloned animals, or the offspring of cloned animals to Panama.

**PART E: POLICY**

**a) REGULATORY FRAMEWORK:**

<b>Legal term (in official language)</b>	<b>Legal Term (in English)</b>	<b>Laws and Regulations where term is used</b>	<b>Legal Definition (in English)</b>
Organismo Vivo Modificado (OVM)	Living Modified Organism (LMO)	<ul style="list-style-type: none"><li>• Law 72 of December 26, 2001.</li></ul>	Any living organism that possesses a novel combination of genetic material obtained through the use of modern biotechnology.
Organismo Genéticamente Modificado (OGM)	Genetically Modified Organism (GMO)	<ul style="list-style-type: none"><li>• Law 48 of August 8, 2002.</li><li>• Legislative Act No. 855 of October 5, 2022</li></ul>	Organism in which the genetic material has been modified by means of gene technology, in a way that does not occur naturally by multiplication and/or natural recombination.
Material Transgénico	Transgenic Material	<ul style="list-style-type: none"><li>• Law 47 of July 9, 1996.</li></ul>	Artificially modified organism to which recombinant genes have been transferred with the potential to present predictable effects.

No specific regulations have been developed for products of animal biotechnology. General biosafety and biotechnology laws apply for animal biotechnology in Panama.

**b) APPROVALS/AUTHORIZATIONS**

The CNB approved GE strains of New World Screwworm (*Cochliomyia hominivorax*-NWS) flies controlled release into the environment, as part of a second phase of research by the *Panama – United*

*States Commission for the Eradication and Prevention of Screwworm (COPEG)*. This phase of research uses a male only strain for the biological control of the Screwworm disease.

The CNB and MINSA authorized the *Oxitec*'s GE mosquitoes, on a research stage for the control of Dengue virus. This would also help to control the new Chikungunya and Zika viruses, because the vector is the same species of mosquitoes: *Aedes aegypti*. This project has not continued.

The CNB and MIDA authorized the research and development of GE *AquaAdvantage Salmon* is a *genetically modified salmon developed by AquaBounty Technologies Inc. to promote rapid growth during early life. This was achieved by adding a growth hormone gene from the Chinook salmon to an Atlantic salmon.* AquaBounty, a U.S. company that developed GE salmon in Boquete, Panama closed its production and research facilities in 2019. AquaBounty left Panama due to the Ministry of Health of Panama's deferred decision on the approval of local consumption. Approval would have required additional studies beyond those already conducted for the Canadian and United States' Food and Drug Administration approvals.

#### **c) INNOVATIVE BIOTECHNOLOGIES**

Panama has not determined the regulatory status or policy for innovative biotechnologies (such as genome editing). But there are opportunities in animal biotechnology research underway in Panama for innovative GE animals, such as the ongoing research by ARS in COPEG.

#### **d) LABELING AND TRACEABILITY:**

Labeling regulations have not been developed for products of animal biotechnology, including for clones or offspring of clones. The new Traceability Law, which is currently under the development of its implementing regulations, may apply in the future for products of animal biotechnology.

#### **e) ADDITION REGULATORY REQUIREMENTS:**

**None.**

#### **f) INTELLECTUAL PROPERTY RIGHTS (IPR):**

Panama is a party to international bodies related to Intellectual Property Rights (IPR), which addresses plant patents, copyright protection, registration requirements.

The U.S-Panama Trade Promotion Agreement entered into force on October 31, 2012, also has a chapter on [Intellectual Property Rights \(chapter 15\)](#).

#### **g) INTERNATIONAL TREATIES/FORUMS:**

Panama is not an active participant in discussions related to new animal technologies in international organizations such as the International Organization for Animal Health (WOAH) or Organization for Economic Cooperation and Development (OECD).

#### **h) RELATED ISSUES:**

**None.**

## **PART F: *MARKETING***

### **a) PUBLIC/PRIVATE OPINIONS:**

Lawmakers do not think GE animals are a priority for the issuing of new regulations so there have not been any discussions of related regulatory policies for genetic engineering of animals.

Panamanians, after seeing the positive results of the *Oxitec*'s GE mosquitoes, are willing to accept the use of this new technology for the control of Dengue virus. This would also help to control the new Chikungunya and Zika viruses, because the vector is the same species of mosquitoes: *Aedes aegypti*.

### **b) MARKET ACCEPTANCE/ MARKET STUDIES:**

The production of food products from GE animals is not well understood by local consumers. There are no market studies regarding GE animals or cloning acceptance.

## **CHAPTER 3: *MICROBIAL BIOTECHNOLOGY***

### **PART G: *PRODUCTION AND TRADE***

#### **a) COMMERCIAL PRODUCTION**

Currently, in Panama there are no research or commercial production projects working on GE microbes in the agricultural sector or in the food industry.

#### **b) EXPORTS**

None

#### **c) IMPORTS**

None

#### **d) TRADE BARRIERS**

There are no trade barriers at this time that would affect U.S. exports for GE microbes to Panama.

### **PART H: *POLICY***

#### **a) REGULATORY FRAMEWORK**

No specific regulations have been developed for GE microbes in Panama.

<b>Legal term (in official language)</b>	<b>Legal Term (in English)</b>	<b>Laws and Regulations where term is used</b>	<b>Legal Definition (in English)</b>
Organismo Vivo Modificado (OVM)	Living Modified Organism (LMO)	<ul style="list-style-type: none"><li>• Law 72 of December 26,</li></ul>	Any living organism that



		2001.	possesses a novel combination of genetic material obtained through the use of modern biotechnology.
Organismo Genéticamente Modificado (OGM)	Genetically Modified Organism (GMO)	<ul style="list-style-type: none"> <li>• Law 48 of August 8, 2002.</li> <li>• Legislative Act No. 855 of October 5, 2022</li> </ul>	Organism in which the genetic material has been modified by means of gene technology, in a way that does not occur naturally by multiplication and/or natural recombination.
Material Transgénico	Transgenic Material	<ul style="list-style-type: none"> <li>• Law 47 of July 9, 1996.</li> </ul>	Artificially modified organism to which recombinant genes have been transferred with the potential to present predictable effects.

**b) APPROVALS/AUTHORIZATIONS**

No approvals for GE microbes have been granted, as there has been no request for GE microbes' approval, for research, development, or commercialization in Panama.

**c) LABELING AND TRACEABILITY**

Panama has not determined the regulatory status or policy on labeling for innovative biotechnologies such as GE microbes. The new Traceability Law, which is currently under the development of its implementing regulations, may apply in the future for GE microbes.

**d) MONITORING AND TESTING**

Panama does not currently have a monitoring and testing program for GE Microbes

**e) ADDITIONAL REGULATORY REQUIREMENTS**

None

**f) INTELLECTUAL PROPERTY RIGHTS (IPR)**

Panama is a party to international bodies related to Intellectual Property Rights (IPR), which addresses plant patents, copyright protection, registration requirements.

The U.S-Panama Trade Promotion Agreement entered into force on October 31, 2012, also has a chapter on [Intellectual Property Rights \(chapter 15\)](#).

**g) RELATED ISSUES**

None

***PART I: MARKETING***

**a) PUBLIC/PRIVATE OPINIONS**

No public or private opinions has been published in any public media in Panama, regarding GE microbes.

**b) MARKET ACCEPTANCE/STUDIES**

The production or use of GE microbes for agricultural use or for the food industry is unknown by local consumers. There are no market studies regarding GE microbe's acceptance.

**Attachments:**

No Attachments