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**Prepared By:** Omar Gonzalez

**Approved By:** Candice Bruce

**Report Highlights:**

With international funding to develop and implement biosafety regulatory systems drying up in 2019, Caribbean biosafety regulatory efforts remain in idle mode. The region is seeking further funding from the United Nations Environmental Program/Global Environment Program to jump-start activities geared toward having fully functional biosafety frameworks in a dozen Caribbean countries.

## Executive Summary:

Biosafety regulatory efforts in the Caribbean Basin Agricultural Trade Office (CBATO) region have remained largely on pause since 2019, when the United Nations Environment Programme/Global Environment Facility (UNEP/GEF) Regional Project for Implementing National Biosafety Frameworks (NBFs) in the Caribbean Sub-Region came to a close[1]. This project aimed to assist several Caribbean Community (CARICOM) countries meet their obligations under the Cartagena Protocol on Biosafety (CPB) [2][3][4]. Similarly, biotechnology research activities in the region, already stifled by a lack of biosafety regulation, have been on hiatus to a large extent since the COVID-19 lockdown of March 2020.

Pending UNEP/GEF's approval of another project for the region that would be geared toward having participating countries conclude the work of developing and enacting their biosafety legislation and fully implementing their NBFs, the status quo in the region is likely to remain unchanged. This status quo is one where there is no deliberate introduction of genetically engineered (GE) products into the environment (namely field trials or commercial production of GE products), and no biosafety regulatory barriers to trade of GE products. The United States remains the main supplier of food and agricultural products to the CBATO region, which includes supplying nearly 100 percent of the region's corn and soybean needs.

More information on the subject is available in the [2020](#) and [2021](#) versions of this report.

[1] The CBATO region of coverage is comprised of: Anguilla, Antigua & Barbuda, Aruba, The Bahamas, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Cuba, Dominica, Guadeloupe, Guyana, Martinique, Grenada, Montserrat, the former Netherlands Antilles (Curaçao, Bonaire, Sint Maarten, Saba & St. Eustatius), St. Kitts & Nevis, St. Lucia, Saint Martin, St. Barthélemy, St. Vincent & the Grenadines, Trinidad & Tobago, and Turks & Caicos Islands. For purposes of this report, Cuba is excluded.

[2] CARICOM Member States are: Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago (CARICOM Associate Members are: Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Turks and Caicos Islands).

[3] CARICOM Member States that are Parties to the CPB are: Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago.

[4] CBATO region participants in the 2012-2019 UNEP/GEF Regional Project for Implementing NBFs in the Caribbean included Antigua and Barbuda, The Bahamas, Barbados, Dominica, Grenada, Guyana, St. Kitts and Nevis,

St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago. The other non-CBATO region participants were Belize and Suriname.

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## CHAPTER 1: PLANT BIOTECHNOLOGY

### PART A: PRODUCTION AND TRADE

#### a) RESEARCH AND PRODUCT DEVELOPMENT:

There are no GE plants or crops under development in the CBATO region that are poised to be commercialized soon. Overall, agricultural production throughout the region is limited, and countries import most of their agricultural product needs. Total land area is 220,632 sq. km. (85,186 sq. miles), with Guyana representing 89 percent of this area and the 24 island markets that make up the rest of the region accounting for the remaining 11 percent. The percentage of arable land ranges between two and seven percent in most countries. Commercial production in Guyana is concentrated in sugarcane and rice while in the island markets' crop production is focused to a large extent on fruits, vegetables, tubers and spices.

Research institutions throughout the Caribbean have recognized that production of GE plants and crops could lead to increased yields and reduced use of water and inputs. These institutions have identified several local products (sugarcane, cotton, rice, coconuts, cocoa, coffee, peppers, spices, and anthuriums among others) that could be improved using agricultural biotechnologies. The most prominent institutions conducting research on these plants and crops include the University of the West Indies (UWI), the Caribbean Agricultural Research and Development Institute (CARDI), and the National Agriculture Research Institute (NARI) in Guyana.

#### b) COMMERCIAL PRODUCTION:

In the absence of a fully functioning biosafety legal framework to oversee the production or release of GE products, countries in the region are cautious when it comes to GE crop cultivation. There are no known field trials or commercial production of GE products taking place in the CBATO region.

#### c) EXPORTS:

Not applicable.

#### d) IMPORTS:

Currently, the United States is the region's main supplier of food and agricultural products. In some cases, particularly regarding consumer-oriented products, imports from third countries are often transshipped through the United States. The following tables show the region's imports of some key GE products, including the consumer-oriented products category, which largely represents products derived from or containing GE corn, soybean and/or canola.

### Reporting Countries Corn Exports to CBATO Islands Participating in the Biosafety Project

Reporting Country	Unit	Quantity		
		2019	2020	2021
United States	Tons	169,288	188,686	189,820
Brazil	Tons	1,148	1,885	1,710
Belize	Tons	565	635	1,350
Canada	Tons	151	248	203
Barbados	Tons	3	4	70
EU27	Tons	66	1,900	0
Argentina	Tons	0	78	0
UK	Tons	17		0
<b>TOTAL</b>	<b>Tons</b>	<b>171,238</b>	<b>193,436</b>	<b>193,153</b>

Source: Trade Data Monitor.

### Reporting Countries Soybean Exports to CBATO Islands Participating in Biosafety Project

Reporting Country	Unit	Quantity		
		2019	2020	2021
United States	Tons	24,947	25,333	24,386
Canada	Tons	40	100	60
Brazil	Tons	0	0	8
<b>TOTAL</b>	<b>Tons</b>	<b>24,987</b>	<b>25,433</b>	<b>24,454</b>

Source: Trade Data Monitor.

### Reporting Countries Soybean Meal Exports to CBATO Islands Participating in Biosafety Project

Reporting Country	Unit	Quantity		
		2019	2020	2021
United States	Tons	66,552	84,661	83,868
Brazil	Tons	60	18,069	10,038
Barbados	Tons	1,603	2,544	1,930
Canada	Tons	3	56	108
India	Tons	1	0	3
EU-27	Tons	122	0	0
<b>TOTAL</b>	<b>Tons</b>	<b>68,341</b>	<b>105,330</b>	<b>95,947</b>

Source: Trade Data Monitor.

### Reporting Countries Soybean Oil Exports to CBATO Islands Participating in Biosafety Project

Reporting Country	Unit	Quantity		
		2019	2020	2021
United States	Tons	11,493	10,819	5,805
Argentina	Tons	731	2,936	5,522
EU-27	Tons	2,733	2,512	5,374
Brazil	Tons	3,460	4,134	3,295
Barbados	Tons	1,424	1,046	1,265
Canada	Tons	706	837	378
Malaysia	Tons	426	71	376
Mexico	Tons	324	251	278
UK	Tons	138	136	101
Ukraine	Tons	0	0	96
Belize	Tons	25	135	23
Taiwan	Tons	12	4	2
China	Tons	4	0	0
<b>TOTAL</b>	<b>Tons</b>	<b>21,476</b>	<b>22,882</b>	<b>22,515</b>

Source: Trade Data Monitor.

### Reporting Countries Exports of Rapeseed, Colza or Mustard Oil and their fractions to CBATO Islands Participating in Biosafety Project

Reporting Country	Unit	Quantity		
		2019	2020	2021
United States	Tons	1,159	1,772	2,033
EU-27	Tons	166	159	316
Canada	Tons	282	307	252
Brazil	Tons	0	6	10
Mexico	Tons	2	5	7
India	Tons	5	3	4
Malaysia	Tons	541	25	0
Turkey	Tons	1	1	0
<b>TOTAL</b>	<b>Tons</b>	<b>2,156</b>	<b>2,227</b>	<b>2,622</b>

Source: Trade Data Monitor.

### Reporting Countries Cotton Exports to CBATO Islands Participating in Biosafety Project

Reporting Country	Unit	Quantity		
		2019	2020	2021
United States	Tons	34	86	20
India	Tons	100	0	0
TOTAL	Tons	134	86	20

Source: Trade Data Monitor

### Reporting Countries Exports of Consumer-Oriented Products to CBATO Islands Participating in Biosafety Project

Reporting Country	Unit	Value		
		2019	2020	2021
United States	USD	713,579,804	636,112,643	714,971,341
EU27	USD	198,310,826	169,498,513	201,870,873
New Zealand	USD	91,413,853	84,456,463	92,177,737
Brazil	USD	59,139,870	58,855,789	75,623,035
U.K.	USD	65,325,666	58,968,088	71,110,926
Canada	USD	53,279,528	53,566,123	61,641,236
Costa Rica	USD	47,126,723	44,043,997	55,091,212
Dominican Republic	USD	20,926,566	21,727,744	24,872,683
Australia	USD	19,519,854	14,589,040	23,534,405
Uruguay	USD	11,038,882	17,867,633	20,527,843
Other	USD	177,978,923	180,460,377	165,147,793
TOTAL	USD	1,457,640,495	1,340,146,410	1,506,569,084

Note: Numbers above shown in US dollars to avoid inconsistencies created by different units of measure for quantity.

Source: Trade Data Monitor

#### e) FOOD AID:

The CBATO region is not a regular food aid recipient, and the importation of GE food aid is not contemplated in any country's biosafety legislation nor in the CARICOM regional policy. Further, it is unknown whether any GE products have been part of any food aid programs in the region.

#### f) TRADE BARRIERS:

Post is not aware of any specific requirements related to the importation of GE products in the region. Within the Caribbean region, CARICOM is focused on establishing the Caribbean Single Market and Economy to facilitate the free movement of CARICOM-origin products between Member States. It remains to be seen whether CARICOM will develop and implement regional rules affecting trade in GE products.

## PART B: POLICY

### a) REGULATORY FRAMEWORK:

Most of the countries within CARICOM are seeking to address their plant biotechnology requirements through a National Biosafety Framework (NBF). To date, only St. Kitts and Nevis and St. Lucia have enacted any biosafety legislation. While an important first step toward establishing comprehensive NBFs, implementing regulations have yet to be finalized and thus regulatory and institutional structures are not yet fully operational. None of the other CARICOM countries has enacted any biosafety legislation.

To ensure a unified stance on biosafety regulation, CARICOM has also set forth a “Regional Biosafety Harmonization Policy.” Some of the key elements of this harmonized policy involve making a distinction between which aspects of the policy will be managed at the country and regional levels. The regulatory system for biosafety will be country-based and will include decision-making for GE products intended for intentional introduction into the environment and GE products intended for contained use. Activities such as risk assessments, capacity building, public education, information management, and reference laboratory testing, are to be handled at the regional level. This will include risk assessments and decision making for GE products intended for food, feed, or processing.

#### i. Agricultural Biotechnology-related Regulatory Terms Used by Caribbean Countries and CARICOM

<b>Legal Term</b>	<b>Laws &amp; Regulations where used</b>	<b>Legal Definition</b>
Modern Biotechnology	This term, as defined in the CPB, is used in St. Lucia’s Biosafety Act 200, in other draft biosafety legislation being developed throughout the Caribbean region, and in CARICOM’s Regional Biosafety Harmonization Policy.	Refers to the application of: a. In vitro nucleic acid techniques, including recombinant deoxyribonucleic acid (DNA) and direct injection of nucleic acid into cells or organelles, or b. Fusion of cells beyond the taxonomic family, that overcome natural physiological reproductive or recombination barriers and that are not techniques used in traditional breeding and selection;
Living modified organism (LMO)	This term, as defined in the CPB, is used in draft biosafety legislation being developed throughout the Caribbean region and in CARICOM’s Regional Biosafety Harmonization Policy.	any living organism that possesses a novel combination of genetic material obtained through the use of modern biotechnology



Continued.

<b>Legal Term</b>	<b>Laws &amp; Regulations where used</b>	<b>Legal Definition</b>
Living modified organism (LMO)	St. Lucia's Biosafety Act 200	any biological entity capable of transferring or replicating genetic material, including sterile organisms, viruses and viroids that possess a novel combination of genetic material obtained through the use of modern biotechnology
LMO-FFP	This term, as defined in the CPB, is used in draft biosafety legislation being developed throughout the Caribbean region and in CARICOM's Regional Biosafety Harmonization Policy.	living modified organisms intended for direct use as food or feed, or for processing, if available.
Genetically modified organism (GMO)	SKN Biosafety Act 2012	any biological entity including plants, animals, bacteria and all other kinds of micro-organisms, cell cultures (prokaryotic or eukaryotic) created and propagated as such, virus, and plasmids and other kinds of vectors, in which the genetic material has been altered in a way that does not occur naturally, by means of cell or gene technology;
Genetically modified organism (GMO)	St. Lucia's Biosafety Act 200	(a) means an organism whose genetic material has been modified by the activity of manipulating recombinant deoxyribonucleic acid or ribonucleic acid molecules; and (b) includes –(i) a living modified organism; (ii) a product of a genetically modified organism; (c) does not include organisms arising from techniques that imply the direct introduction into an organism, or hereditary material, when this does not involve the use a recombinant deoxyribonucleic acid or ribonucleic acid molecules or genetically modified organisms, modified by processes, such as, in vitro insemination, conjugation, transduction or any other natural process.

## ii. The Regional Project for Implementing NBFs

From 2012 to 2019 the UWI carried out a UNEP/GEF-funded Regional Project for Implementing NBFs in the Caribbean, which assisted 12 of the 13 CARICOM countries that are parties to the CPB with implementation of their obligations [1] under the Protocol. This project was a continuation of previous UNEP/GEF biosafety capacity building efforts in the region dating back to 2001.

The overall goal of the UNEP/GEF project was to implement effective, operational, transparent and sustainable NBFs, and deliver global benefits that are compliant with the CPB in the Caribbean sub-region countries while also protecting against any potential risks from the introduction of GE products. The project concluded in 2019, with only two countries (St. Kitts & Nevis and St. Lucia) enacting their biosafety legislation and without any participating countries fully implementing their NBFs. More information on the project is available in the [2020 Agricultural Biotechnology Annual Report for the Caribbean Basin](#). An evaluation of the project conducted by the Evaluation Office of UN Environment is available at:

[https://wedocs.unep.org/bitstream/handle/20.500.11822/28533/2967\\_2019\\_te\\_unep\\_gef\\_fsp\\_speg\\_regional\\_Caribbean\\_national\\_biosafety\\_frameworks\\_v2.pdf?sequence=2&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/28533/2967_2019_te_unep_gef_fsp_speg_regional_Caribbean_national_biosafety_frameworks_v2.pdf?sequence=2&isAllowed=y). It is important to note, however, that project participants have made a request to UNEP/GEF for a new project that will enable them to conclude the work of developing and enacting their biosafety legislation and fully implementing their NBFs.

### b) APPROVALS/AUTHORIZATIONS:

Without all the legal and regulatory frameworks in place, no GE plants or crops have been approved or registered in the region for food, feed, or processing.

### c) STACKED OR PYRAMIDED EVENT APPROVALS/AUTHORIZATIONS:

Stacked or pyramided events are not contemplated in CARICOM's regional policy.

### d) FIELD TESTING:

No field-testing of GE crops is currently taking place.

### e) INNOVATIVE BIOTECHNOLOGIES:

The use of innovative biotechnologies (such as genome editing) in plants or plant products has not been fully contemplated in national legislation or regional policy. Thus, even when proposed biosafety regulatory systems become operational, the regulatory status of such biotechnologies will be undetermined and may require further assessment.

[1] CBATO Islands participating in the UNEP/GEF project are Antigua and Barbuda, The Bahamas, Barbados, Dominica, Grenada, Guyana, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago. The other CARICOM participants are Belize and Suriname.

f) COEXISTENCE:

There is general recognition that GE products used in food, feed, and processing are widely imported throughout the region. Thus, risk assessments and decision-making are to be handled at the regional level to ensure CARICOM members are implementing a harmonized framework to facilitate trade. However, for GE products intended for introduction into the environment or contained use, the situation is different. Although no rules are currently in place for coexistence of GE and non-GE crops, individual countries in the region have indicated that once biosafety regulatory systems become operational, they will want to retain decision-making on this matter at the national level rather than at the regional level.

g) LABELING AND TRACEABILITY:

As a general pragmatic approach to trade (in recognition of the large volume of food imports from the United States), project participants have reportedly agreed to implement voluntary rather than compulsory negative labeling requirements for foods containing GE ingredients. Food manufacturers will be allowed to voluntarily identify those products that do not contain GE products, with the critical level or limit for negative labeling being five percent GE content. Labeling standards would need to be approved by the appropriate labeling enforcement authority in each country before implementation of any such standards could take place. So far, the CBATO is not aware of any project participants undertaking efforts to this end.

h) MONITORING AND TESTING:

As part of the UNEP/GEF project, the region has developed testing capability for GE events. At the country level, participating countries have acquired laboratory equipment and trained laboratory personnel to conduct basic testing. A list of national designated laboratories is available at <https://caribbeanbiosafety.org/wp-content/uploads/2015/11/Designated-national-laboratories-1-1.pdf>. UWI also has three regional laboratories with more advanced equipment, which national laboratories can use to conduct more advanced tests or validate their results. As a third option, the region would rely on accredited U.S. reference labs. To date, no trade has been affected by any monitoring or testing that may be taking place.

i) LOW LEVEL PRESENCE (LLP) POLICY:

The draft regional biosafety policy calls for countries to implement a five percent LLP allowance.

j) ADDITIONAL REGULATORY REQUIREMENTS:

Not applicable.

k) INTELLECTUAL PROPERTY RIGHTS (IPR):

Given the lack of commercial production of GE crops in the region, Post is not aware of any GE-related IPR issues.

l) CARTAGENA PROTOCOL RATIFICATION:

Ten countries in the CBATO region are parties to the CPB, and while they are all in the process of trying to meet their biosafety obligations under the protocol, none has fully implemented them to date.

**Status of Ratification and Entry into Force of the CPB**

	Date of Signature	Date instrument of ratification or accession was deposited	Accession Mode	Date of entry into force
Antigua and Barbuda	May 24, 2000	Sep 10, 2003	Ratification	Dec 9, 2003
The Bahamas	May 24, 2000	Jan 15, 2004	Ratification	Apr 14, 2004
Barbados	n/a	Sep 6, 2002	Accession	Sep 11, 2003
Dominica		Jul 13, 2004	Accession	Oct 11, 2004
Grenada	May 24, 2000	Feb 5, 2004	Ratification	May 5, 2004
Guyana	n/a	Mar 18, 2008	Accession	Jun 16, 2008
St. Kitts and Nevis	n/a	May 23, 2001	Accession	Sep 11, 2003
St. Lucia	n/a	Jun 16, 2005	Accession	Sep 14, 2005
St. Vincent and the Grenadines	n/a	Aug 27, 2003	Accession	Nov 25, 2003
Trinidad and Tobago	n/a	Oct 5, 2000	Accession	Sep 11, 2003

Source: Convention on Biological Diversity <https://bch.cbd.int/protocol/parties/>

m) INTERNATIONAL TREATIES AND FORUMS:

Post is not aware of any markets in the Caribbean Basin region taking positions pertaining to agricultural biotechnologies, the use of such technologies, and products thereof in international treaties/fora other than the Convention on Biological Diversity and the Cartagena Protocol.

n) RELATED ISSUES:

None.

**PART C: MARKETING**

a) PUBLIC/PRIVATE OPINIONS:

As part of the UNEP/GEF project, participating countries engaged in “awareness raising activities” at the national level to educate the public on biosafety, biotechnology, biosecurity and invasive species. The project also supported stakeholder consultations as part of the national processes to enact biosafety regulations. Nonetheless, overall awareness of agricultural biotechnology and GE products is quite limited. There is practically no public discussion on the matter and there are no NGO’s or public campaigns lobbying for or against agricultural biotechnology, whether for planting GE crops or for consuming foods derived from GE crops.

**b) MARKET ACCEPTANCE/STUDIES:**

There are no significant marketing issues that currently affect U.S. agricultural products.

**CHAPTER 2. ANIMAL BIOTECHNOLOGY:**

**PART D: PRODUCTION AND TRADE**

**a) RESEARCH AND PRODUCT DEVELOPMENT:**

The Caribbean region is not yet developing animal genetic engineering or cloning of animals. Although there has been some biotech research in Barbados on Blackbelly sheep, the region is far from having the capability to engage on specific animal biotechnology projects. However, experts in the region believe that an expansion of animal breeding using conventional and new embryo techniques as well as DNA techniques to characterize regional species would be a positive development. The use of molecular techniques to identify genes for breeding purposes will be high on the research agendas of several countries in coming years.

On a related topic, in 2016 the Government of the Cayman Islands, through its Mosquito Research & Control Unit (MRCU), partnered with the UK based biotechnology firm, Oxitec, to collaborate on a “Friendly *Aedes aegypti* Mosquito Project.” *Aedes aegypti* is a vector for Dengue Fever, Chikungunya, Zika (which has been linked to nervous system disorders and birth defects such as microcephaly), and Yellow Fever. The project uses a pioneering technique involving GE male mosquitos to fight *Aedes aegypti*. The GE males, which cannot bite, are released into the wild to mate with female *Aedes aegypti*, producing offspring that die before reaching maturity. The GE males also die within a few days. The Cayman Islands are believed to be the only country in the CBATO region to have utilized this technology. Media reports indicate that the collaboration on this project between the Cayman Islands and OXITEC concluded in 2019.

**b) COMMERCIAL PRODUCTION:**

Not applicable.

c) EXPORTS:

Not applicable.

d) IMPORTS:

Not applicable.

e) TRADE BARRIERS:

Although there are no known barriers to trade, it is believed that animal health and food safety authorities would treat requests for imports of GE animals, livestock clones, and offspring of clones or products from these animals, with an abundance of caution prior to granting import approval.

## PART E: POLICY

a) REGULATORY FRAMEWORK:

The UNEP/GEF Regional Project for Implementing NBFs in the Caribbean was originally designed to address plant biotechnology only. However, seeing the potential benefits of using biotechnology on mosquitoes as outlined above, several of the project participants have broadened their legislation so that it is no longer specific to plants.

Refer to “Chapter 1, Part B., Sub-paragraph a. Regulatory Frameworks” for a glossary of commonly used terms.

b) APPROVALS/AUTHORIZATIONS

None.

c) INNOVATIVE BIOTECHNOLOGIES:

Not applicable.

d) LABELING AND TRACEABILITY:

Not applicable.

e) ADDITIONAL REGULATORY REQUIREMENTS:

Not applicable.

f) INTELLECTUAL PROPERTY RIGHTS (IPR):

Post is not aware of any GE-related IPR issues.

g) INTERNATIONAL TREATIES AND FORUMS:

Not applicable.

#### h) RELATED ISSUES:

None.

### PART F: MARKETING

#### a) PUBLIC/PRIVATE OPINIONS:

As mentioned previously, overall awareness of agricultural biotechnology and animal biotechnology specifically, is quite limited. There is no public discussion on the matter and there are no NGO's or public campaigns lobbying for or against agricultural biotechnology. However, it is believed that the public is more sensitive to animal biotechnology and would treat issues related with livestock clones, offspring of clones, and GE animals with greater caution.

#### b) MARKET ACCEPTANCE/STUDIES:

Post is unaware of any studies regarding the marketing of animal biotechnology products in the region. Overall acceptance of animal biotechnology by government regulators, producers, the trade and consumers remain unknown, but as mentioned above the subject is likely to be treated with a great deal of caution.

### CHAPTER 3. MICROBIAL BIOTECHNOLOGY

#### PART G: PRODUCTION AND TRADE

#### a) COMMERCIAL PRODUCTION:

As mentioned earlier, agricultural production in the CBATO region is quite limited. The main agricultural producer in the region is Guyana, where commercial agricultural production is largely concentrated in sugarcane and rice. In the Caribbean islands, farm activity is constrained by a long list of factors which results in limited domestic agricultural output and a large volume of imported consumer-oriented food products. Consequently, food processing in the CBATO region is also quite limited. Thus, the use of food ingredients derived from microbial biotechnology is a new subject in the region with few known applications in the food processing sector at present.

#### b) EXPORTS:

There are neither official statistics nor estimates on exports of microbial biotechnology products. However, the CBATO region 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. The CBATO region imports microbial biotech-derived food ingredients, such as enzymes that are traditionally used in alcoholic beverages, dairy products, and processed products. Likewise, the region imports alcoholic beverages, dairy products, and processed products that may contain microbial biotech-derived food ingredients.

**Reporting Countries Exports of Enzymes, Prepared Enzymes NESOI to CBATO Islands Participating in Biosafety Project**

Reporting Country	Unit	Quantity		
		2019	2020	2021
United States	Tons	48	59	46
EU-27	Tons	10	7	12
India	Tons	6	3	7
Mexico	Tons	5	5	5
Brazil	Tons	21	1	1
Guyana	Tons	106	0	0
Turkey	Tons	0	1	0
UK	Tons	0	19	0
<b>TOTAL</b>	<b>Tons</b>	<b>196</b>	<b>95</b>	<b>71</b>

Source: Trade Data Monitor.

**Reporting Countries Exports of Dairy Products\* to CBATO Islands Participating in Biosafety Project**

Reporting Country	Unit	Quantity		
		2019	2020	2021
New Zealand	Tons	10,118	9,076	9,784
United States	Tons	5,356	4,364	5,190
UK	Tons	2,490	2,219	2,706
EU27	Tons	664	664	1,301
Australia	Tons	282	280	1,098
Malaysia	Tons	301	194	65
Canada	Tons	585	628	37
Other	Tons	17	19	21
<b>TOTAL</b>	<b>Tons</b>	<b>19,813</b>	<b>17,444</b>	<b>20,202</b>

\*Includes products from HS code 0406 (Cheese and Curd).

Source: Trade Data Monitor.



**Reporting Countries Exports of Alcoholic Beverages\* to CBATO Islands Participating in Biosafety Project**

Reporting Country	Unit	Quantity		
		2019	2020	2021
United States	L	7,667,242	4,229,005	6,858,028
EU-27	L	5,384,574	2,595,934	4,415,386
Mexico	L	2,179,682	1,109,814	1,174,681
Chile	L	1,199,357	678,341	474,478
Australia	L	308,783	275,130	390,096
South Africa	L	255,631	370,832	364,450
UK	L	596,058	332,797	253,408
New Zealand	L	47,007	25,814	54,640
Brazil	L	11,929	37,609	39,458
Turkey	L	14,205	20,011	24,950
Other	L	2,274	3,067	2,579

\*Includes products from the following HS codes: 2203 (Beer made from Malt) and 2204 (Wine Of Fresh Grapes, Including Fortified Wines; Grape Must (Having An Alcoholic Strength By Volume Exceeding 0.5% Vol.) NESOI. Source: Trade Data Monitor.

**Reporting Countries Exports of Processed Products\* to CBATO Islands Participating in Biosafety Project**

Reporting Country	Unit	Value		
		2019	2020	2021
United States Consumption	USD	161,626,581	155,187,011	156,682,765
Costa Rica	USD	33,879,419	31,866,761	41,856,359
United Kingdom HMRC	USD	15,589,636	16,544,606	20,123,460
Mexico	USD	9,335,444	10,332,480	11,233,061
EU 27 External Trade (Brexit)	USD	8,469,690	7,835,239	10,028,399
Barbados	USD	9,656,747	8,462,748	8,765,594
Canada	USD	7,132,711	7,516,001	8,390,582
Dominican Republic	USD	7,414,242	6,896,321	7,162,001
Chile	USD	6,209,943	5,717,238	5,617,882
Belize	USD	7,600,683	6,541,256	5,368,232
Turkey	USD	2,839,597	2,672,067	3,427,219
Peru	USD	2,330,524	2,467,869	2,361,606
Other	USD	14,591,685	15,869,993	15,524,886
<b>TOTAL</b>	<b>USD</b>	<b>286,676,902</b>	<b>277,909,590</b>	<b>296,542,046</b>

\*Includes products from the following HS codes: 190110,1904,1905,2009,2103, and 2106.

Note: Numbers above shown in US dollars to avoid inconsistencies created by different units of measure for quantity.

Source: Trade Data Monitor.

d) TRADE BARRIERS:

Not applicable.

PART H: POLICY

a) REGULATORY FRAMEWORK:

The UNEP/GEF Regional Project for Implementing NBFs in the Caribbean was originally designed to address plant biotechnology only. Currently, there is no regulatory framework in place for dealing with products derived from microbial biotechnology.

Refer to “Chapter 1, Part B., Sub-paragraph a. Regulatory Frameworks” for a glossary of commonly used terms.

b) APPROVALS/AUTHORIZATIONS:

None.

c) LABELING AND TRACEABILITY:

Not applicable.

d) MONITORING AND TESTING:

Not applicable.

e) ADDITIONAL REGULATORY REQUIREMENTS:

Not applicable.

f) INTELLECTUAL PROPERTY RIGHTS (IPR):

Not applicable.

g) RELATED ISSUES:

None.

PART I: MARKETING

a) PUBLIC/PRIVATE OPINIONS:

Just as with plant and animal biotechnology, overall awareness of microbial biotechnology is quite limited. There is no public discussion on the matter and there are no NGO's or public campaigns lobbying for or against agricultural biotechnology.

b) MARKET ACCEPTANCE/STUDIES:

There are no studies that we are aware of regarding the marketing of microbial biotechnology products in the region. Overall acceptance of microbial biotechnology by government regulators, producers, the trade and consumers remain unknown.

**Attachments:**

No Attachments