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Report Highlights:

Biosafety regulatory efforts in the Caribbean remain stalled, and it is yet to be seen whether countries can regain the will and secure the international financing required to fully implement their National Biosafety Frameworks in a harmonized manner.

Executive Summary:

Biosafety regulatory efforts in the CBATO region have remained largely on pause since 2019, when the UN 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.

[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) 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 most 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 23 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 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 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		
		2018	2019	2020
United States	Tons	188,322	169,228	188,686
EU-27	Tons	0	66	1,900
Brazil	Tons	895	1,148	1,885
Belize	Tons	668	565	635
Canada	Tons	130	151	248
Argentina	Tons	75	0	78
China	Tons	4	0	0
U.K.	Tons	0	17	0
TOTAL	Tons	190,094	171,236	193,432

Source: Trade Data Monitor.

Reporting Countries Soybean Exports to CBATO Islands Participating in Biosafety Project

Reporting Country	Unit	Quantity		
		2018	2019	2020
United States	Tons	31,922	24,947	25,333
Canada	Tons	35	40	100
China	Tons	1	0	0
TOTAL	Tons	31,958	24,987	25,433

Source: Trade Data Monitor.

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

Reporting Country	Unit	Quantity		
		2018	2019	2020
United States	Tons	91,781	66,552	84,661
Brazil	Tons	287	60	18,069
Canada	Tons	0	3	56
EU-27	Tons	0	122	0
TOTAL	Tons	92,068	66,737	102,786

Source: Trade Data Monitor.

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

Reporting Country	Unit	Quantity		
		2018	2019	2020
United States	Tons	14,049	11,493	10,819
Brazil	Tons	3,949	3,453	4,129
Argentina	Tons	7,199	731	2,936
EU-27	Tons	2,637	2,733	2,512
Canada	Tons	569	706	837
Mexico	Tons	133	324	251
U.K.	Tons	20	138	136
Belize	Tons	0	25	135
Malaysia	Tons	0	426	71
Taiwan	Tons	15	12	4
China		35	4	0
TOTAL	Tons	28,528	20,044	21,830

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		
		2018	2019	2020
United States	Tons	3,066	1,159	1,772
Canada	Tons	164	282	307
EU-27	Tons	88	166	159
Malaysia	Tons	6	541	25
Brazil	Tons	5	0	5
Mexico	Tons	1	2	5
India	Tons	2	5	3
Turkey	Tons	0	1	1
TOTAL	Tons	3,333	2,156	2,277

Source: Trade Data Monitor.

Reporting Countries Cotton Exports to CBATO Islands Participating in Biosafety Project

Reporting Country	Unit	Quantity		
		2018	2019	2020
United States	Tons	14	34	86
India	Tons	0	100	0
TOTAL	Tons	14	134	86

Source: Trade Data Monitor

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

Reporting Country	Unit	Value		
		2018	2019	2020
United States	USD	666,994,261	713,564,439	636,675,825
EU-27	USD	195,316,903	198,333,589	169,486,484
New Zealand	USD	91,439,680	91,413,853	84,456,463
U.K.	USD	60,909,460	65,545,408	58,968,088
Brazil	USD	52,662,924	59,139,754	58,855,802
Canada	USD	53,353,863	53,279,528	53,320,872
Costa Rica	USD	39,881,865	46,747,175	43,678,246
Mexico	USD	17,040,626	18,725,175	18,878,885
Uruguay	USD	19,449,161	11,038,882	17,869,583
China	USD	14,830,449	15,530,246	15,697,434
Other	USD	123,876,849	131,888,524	128,018,984
TOTAL	USD	1,335,756,041	1,405,206,573	1,285,906,666

Note: Export numbers 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 or 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.

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.

[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.

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. 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.

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. 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) 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" to evaluate the technology for Aedes aegypti control. 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. The project has since concluded and the Cayman Islands have no immediate plans to evaluate the technology further.

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.

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:

Not applicable. 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:

Not applicable. 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.

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.

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