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Report Highlights:

In January 2024, Nigeria became the second country in Africa to approve the commercial release of four biotech (TELA) maize varieties. On March 6, 2024, the National Biotechnology Development Agency (NABDA) changed its name to the National Biotechnology Research and Development Agency (NBRDA) in recognition of its research mission. At least five biotech crops are in different developmental stages, including rice, cassava, sorghum, and potato.

EXECUTIVE SUMMARY

Given the effects of climate change, especially in the more arid north, Nigeria generally perceives agricultural biotechnology as a tool to address food security. The government and producer groups are generally supportive of biotech research, testing, and commercialization, however there are some producer and civil society groups who distrust science and technology advances in agriculture.

The government has two major agencies responsible for overseeing biotechnology, the National Biosafety Management Agency (NBMA) and NBRDA. NBMA is the authority responsible for biosafety, providing oversight for the use of biotechnology and regulating the commercialization of biotech products. NBRDA is the national focal point to formulate biotechnology policy and acquire, deploy, promote, and facilitate biotech products.

In 2019, Nigeria became the first in Africa to approve the commercial release of its first genetically engineered (GE) food crop, the pod-borer resistant (PBR) cowpea. Since the commercial release of PBR cowpea, TELA maize is the second GE food crop commercially approved. In January 2024, Nigeria approved the commercial release of four TELA maize varieties, which have been genetically engineered for improved insect-resistance and drought-tolerance. This approval implies that seed companies can license rights to produce and commercialize the new TELA hybrids under their private brand from African Agricultural Technology Foundation (AATF). However, an estimated 95 percent of Nigeria's seed companies cannot produce hybrid seeds. Contacts anticipate it will take time to domestically produce TELA maize planting seeds.

GE potato is in the second season of regulatory trials to maintain compliance and integrity. This implies that the government could soon release a report of clinical trials on biotech potatoes and commercially released in 2025.

With rising food prices and lackluster production, many Nigerians are more concerned about food price and availability than the genetic makeup of key food crops. While some civil society groups do not support agricultural biotechnology in the consumer arena, producers generally have positive attitudes toward adopting biotechnology to boost production and reduce costs.

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CHAPTER 1: PLANT BIOTECHNOLOGY

PART A: PRODUCTION AND TRADE

- a) **RESEARCH AND PRODUCT DEVELOPMENT:** In 1987, the Ministry of Science and Technology established the [National Center for Genetic Resources and Biotechnology](#) to conduct research, gather data, and disseminate technical information on matters relating to genetic resource conservation, utilization, and biotechnology. The government, backed by Decree 33 of 1987, regulates the seed, livestock, and fisheries industries through the Varietal Release Committees. The country is seeking to develop and commercialize new biotech crops which include:
 - i. **Herbicide Tolerant Soybeans: In collaboration with Michigan State University and the National Cereals Research Institute (NCRI), Badeggi, Niger State:** Weed management is a critical issue affecting large-scale soybean production in Nigeria, and the introgression of the Herbicide Tolerant (HT) gene into local varieties could alleviate the labor and costs associated with weed management. This technology could reduce weed competition, thereby boosting soybean yield and increasing farmer incomes. Further field morpho-evaluations will assess the yield response of transgenic soybeans to glyphosate protection, marking this initiative as National Biotechnology Research and Development Agency (NBRDA) first transgenic crop and the first transgenic soybeans in Nigeria and Africa.

Project Overview

The HT Soybean project is progressing through the seed multiplication and introgression stages. Prior to this, the project backcrossed with local Nigerian soybean varieties. Additionally, integrity testing through molecular and morphological characterization has confirmed the potential gene uptake. The HT Soybean project is in its preliminary stages, with significant potential to reduce weed invasiveness in soybean cultivation by up to 35%. This advancement is expected to increase farmer yields by as much as 95%.

In 2017, NBRDA signed a Material Transfer Agreement with Michigan State University to obtain two lines of HT soybean germplasm for basic research, field testing, and evaluation alongside a leading Nigerian commercial variety. Subsequently, two lead commercial lines were sourced from the NCRI in Badeggi.

Following an application for a confinement field trial in 2018, the NBMA granted approval for an initial two-year period, recommended by the National Biosafety Committee (NBC). On May 6, 2019, the National Agricultural Quarantine Service granted phytosanitary approval for the delivery of the MSU seeds lines (E14086 and E14017) to NBRDA. However, only fifty seeds of each line were provided, necessitating seed multiplication through two cycles.

Objectives of the Project

The primary objective of the field trial is to evaluate two glyphosate formulations using the MSU lines (E14086 and E14017) in comparison with improved Nigerian commercial soybean varieties.

- Evaluate and screen HT soybeans alongside improved Nigerian varieties at the confinement field trial (CFT).
- Backcross HT soybeans into leading Nigerian commercial varieties to enhance climate resilience.
- Assess the stability and efficacy of the HT gene against glyphosate in subsequent backcrossed progenies.
- Commercialize improved HT soybean varieties for environmental and economic benefits.

- ii. **Nitrogen-Use Efficient, (NUE) Rice:** The NUE Rice project aimed to enhance nitrogen use efficiency in rice cultivation, thereby increasing yields and promoting sustainable agricultural practices. The objective of the NUE Rice project was to develop rice varieties that could utilize nitrogen more efficiently, leading to improved productivity with reduced fertilizer input.
- iii. **Virus Resistant Cassava (VIRCA) Plus:** The National Roots Crops Research Institute (NRCRI) in Umudike and the Donald Danforth Plant Science Centre are collaborating on this project. The VIRCA Plus collaboration is developing two cassava varieties, one for East Africa and the second for Nigeria and other West Africa countries. The Nigerian VIRCA Plus product is a cassava variety with elevated levels of iron and zinc for improved nutrition and biofortification, as well as disease resistance. First year multilocational field trial last year was completed in 2023, the second field trial in should be concluded by the end of 2024, and allegedly heading towards regulatory approval by 2025.
- iv. **Africa Biofortified Sorghum (ABS):** In 2004, Africa Harvest Biotech Foundation International (Africa Harvest) formed a consortium to develop bio-fortified African sorghum through the ABS Project. The consortium members included Corteva Agriscience, Institut del'Environnement et Recherches Agricoles, Burkina Faso, Kenya Agricultural and Livestock Research Organization, Institute of Agricultural Research (IAR), NBRDA, the Council for Scientific and Industrial Research, South Africa, AATF in Kenya, and the International Crops Research Institute for the Semi-Arid Tropics. The CFTs were suspended due to lack of funding.
- v. **Blight Resistant Potatoes:** This project is in collaboration between the NRCRI in Jos Station and AATF. The CFTs were conducted at three sites: Bokokos, Kusuku, and Kuru at Umudike. In 2022, the immunity of biotech potatoes against late blight disease was validated. The GE Potato is currently in the second season of regulatory trials to maintain

compliance and integrity. The project is in the final stages of negotiating a licensing agreement with the International Potato Center (CIP) to ensure availability of quality seeds. The GE potatoes might be [released to farmers in 2025](#).

- b) **COMMERCIAL PRODUCTION:** Bollgard II cotton (Bt cotton), PBR cowpea, and TELA maize are available for commercialization. In 2019 and 2021, producers began planting Bt cotton and PBR crops, respectively.
- i. **Bt Cotton:** In 2018, Nigeria approved the [commercial release of pest resistant Bt cotton](#), its first genetically engineered crop. The project involved Bayer in Nigeria, Mahyco Private Limited, IAR, NBRDA, and the National Agricultural Seed Council (NASC). The two varieties Bt cotton hybrids (Mahyco C 567 BGII & Mahyco C 571 BGII) were commercialized after two years of multi-locational trials conducted by IAR.
- ii. **Bt Cowpea:** In 2019, [the government approved the registration](#), naming, and release of the new PBR cowpea variety for commercialization. The National Committee on Naming, Registration and Release of Crop Varieties approved the crop at its 28th meeting in Ibadan on December 12, 2019. The Bt cowpea is resistant to *Maruca vitrata*, an insect pest that causes up to 90 percent yield loss in severe cases. This new variety is early maturing (70 – 75 days) with semi-erect growth habit, is insensitive to day-length, and has medium large white seeds. It is also resistant to striga and alectra – two parasitic weeds. Bt cowpea is expected to allow farmers to reduce the insecticide applications from 6-7 to only two per cropping season. Bt cowpea is also expected to reduce the 500,000 metric ton annual shortfall in production and improve national productivity by 20%.
- iii. **TELA Maize:** This project was developed to resist fall armyworm and stem borers by IAR-Zaria. The TELA Maize Project was originally known as the Water Efficient Maize for Africa Project. Nigeria first joined the TELA Maize Project in 2019.

In October 2021, [the National Biosafety Management Agency \(NBMA\) granted approval for the environmental release and field trials of TELA maize](#) varieties SAMMAZ 72T, SAMMAZ 73T, SAMMAZ 74T, and SAMMAZ 75T. Nigeria's Institute for Agricultural Research carried out national performance trials of the four varieties across ten states with varied agroecological conditions. The trials reportedly showed average yields achieving 3 tons per hectare.

On January 11, 2024, Nigeria's National Committee on Naming, Registration and Release of Crop Varieties, Livestock Breeds/Fisheries announced the approval of twenty-three new varieties for commercial planting, including four biotech TELA maize varieties. An estimated 95 percent of Nigeria's seed companies cannot produce hybrid seeds; contacts anticipate it will take time to domestically produce TELA maize planting seeds. The first batch of TELA maize planting seeds

were imported from South Africa. Furthermore, the TELA maize has been distributed across several states, including Kaduna, Kano, Zaria, Nassarawa, Abuja FCT, and Jigawa. Production may occur during the 2024 dry season and 2025 raining season, which suggests a growing demand for this GE crop. The market response indicates could possibly result to continued progress in the adoption of TELA maize.

- c) **EXPORTS:** Nigeria does not export biotech products.
- d) **IMPORTS:** Nigeria permits the import of biotech crops for poultry feed, and seeds for research purposes. An approved NBMA-issued biotech seed import permit is required. Applications need to be submitted to the Director General at least 270 days prior to the import date. The agency will reject non-compliant shipments.

In 2020, [NBMA published a new guideline for importing biotech organisms](#) for food, feed, and processing (FFP). These guidelines served as step-by-step instructions for importers of biotech products intended for FFP, including procedures for obtaining biosafety permits. The guidelines highlighted the roles of all relevant border regulatory agencies that play a role in importing biotech products for FFP. In addition, the guidelines also specified the first point of contact for applicants who wish to import biotech products for FFP.

In July 2022, NBMA [approved the import of biotech drought-resistant wheat \(HB4\)](#) from Argentina until July 2025. The import of biotech wheat is mainly for food and processing, not planting. NBMA also [announced a 21-day public notice](#) about an application dossier submitted by Trigall Genetics S. A, for importing biotech wheat.

Relevant legislation and policies for imported FFP biotech products:

- i. [National Biosafety Management Agency Act, 2015 \(As Amended\)](#): This law provides the regulatory framework, which is the institutional and administrative mechanism for safety measures applied to modern biotechnology. The legislation aimed to prevent any potential adverse effects to humans, animals, plants, or the environment. In addition, NBMA published the revised 2017 National Biosafety Policy outlining the institutional arrangements, scope, procedures for regulating the trade and trans-boundary movement of biotech products, risk assessment procedures, labeling, and other factors based on the NBMA Act of 2015.
 - ii. **Plant Quarantine Act 2017:** This law regulates the importing and exporting of plants and plant products and establishes controls for plant pests. Frequently asked questions about the National Agricultural Quarantine Service [can be found here](#).
 - iii. [Customs and Excise Management Act 2004 \(As Amended\)](#): This act regulates the management and collection of customs duties, including biotech products.
- e) **FOOD AID:** Nigeria does not provide food aid. It receives food aid, including biotech corn and soy blended products.

- f) **TRADE BARRIERS:** Nigeria maintains an open market for agricultural commodities and products derived from biotechnology. There are no biotechnology-related trade barriers affecting U.S. food and agricultural exports to Nigeria.

PART B: POLICY

- a) **REGULATORY FRAMEWORK:** NBMA is the government institution responsible for regulating biotech products. The NBC reviews applications. It carries out data analyses of socio-economic considerations of biotech crops alongside risk assessments before recommending products to the agency for approval. The legislation and regulations regarding the approval and release of GE crops, including the [National Biosafety Act 2015](#), National Biosafety Regulations 2017, and National Biosafety Guidelines 2018, can be found [here](#).

INSTITUTIONS INVOLVED IN AGRICULTURAL BIOTECHNOLOGY

- i. [Federal Ministry of Environment:](#) Established the National Biosafety Management Agency (NBMA) as the national focal point and the competent authority for biosafety. It provides biosafety regulations for bringing biotech crops into the country for testing and environmental release. The ministry is the government's liaison with the Secretariat of the Convention on Biological Diversity, as required under the Cartagena Protocol on Biosafety (CPB).
[NBMA:](#) Is an independent biosafety and regulatory body. NBMA is responsible for all correspondence with importers, exporters, and applicants regarding movement of biotech products. Its roles and responsibilities include providing guidance on the safe application of biotech, ensuring that biotech products are safe for the environment and human health, defining offenses and penalties for violations, regulating the use of all living GE products and products for FFP, and considering socio-economic factors in risk assessments and labeling of biotech products. NBMA has developed a slideshow overview of Nigeria's biosafety system. To download this resource, [click here](#).
- ii. [Federal Ministry of Agriculture and Food Security:](#) The ministry formulates agricultural policies relating to biotechnology. It oversees all public agricultural research institutions through its agency, NASC.
[NASC](#) is an agency under the ministry and is responsible for developing and regulating the seed (biotech and conventional) industry.
- iii. [Federal Ministry of Innovation, Science and Technology:](#) Established the NBRDA as the national focal point to formulate biotechnology policy and acquire, deploy, promote, and facilitate biotech activities.
[NBRDA:](#) The agency is active in creating awareness for products derived from biotechnology. It conducts workshops, conferences, outreach with producers, and technical exchanges with international stakeholders.
[Sheda Science and Technology Complex:](#) Under the Ministry of Science & Technology, the center is a government biotechnology research and training facility. It has the mandate to develop and use domestic technologies for the application of biotechnology in health, agriculture, and environment.

[Federal Ministry of Health and Social Welfare](#): Established the National Agency for Food and Drug Administration and Control (NAFDAC). [NAFDAC](#) oversees all food safety product issues including drugs, chemicals, and related products. It also regulates herbicide tolerance to determine maximum residue limits in food and feed products.

- iv. **Nigerian National Universities**: Several national universities are also involved in the research and development of biotech, including CFTs. Most of these universities have institutional biosafety committees.
- v. **National Biosafety Committee (NBC)**: The inter-ministerial NBC serves as the competent national authority for biosafety. The committee has 16 members drawn from the ministries of Agriculture and Food Security, Science and Technology, Environment, Commerce, Education, Health, Industry, Foreign Affairs, Internal Affairs (including the Customs Service), Justice, and the Nigerian Association of Chambers of Commerce, Industry, Mines, and Agriculture, and other private sector organizations. The NBC includes biologists, physical and social scientists, as well as representatives of environmental and non-governmental organizations.

The committee must review all applications for the release of biotech products. Furthermore, the NBC makes recommendations to the Minister of Environment to approve biotech products. It also oversees the implementation of the National Biotechnology Program and addresses issues that may arise within the NBMA Act.

The NBC established the National Biosafety Technical Subcommittees (NBTs) to focus on the interests of sectors such as agriculture, health, industry, and the environment. The subcommittees review research proposals and recommend experimental conditions. The group also provides technical advice to the NBC and contributes to its functions concerning contained use, field trials, release, and market placement.

All applications for imported biotech products for field trials, transit, and contained use must be routed through the NBMA. The NBC acts as a liaison between the relevant NBTs to carry out risk assessments and ensure participation of all relevant stakeholders. Findings of the NBTs are submitted to the NBC and the agreed decision is conveyed to the applicant by NBMA.

- vi. [Open Forum for Agricultural Biotechnology \(OFAB\)](#): OFAB is an information platform that holds outreach activities to enhance the understanding and acceptance of biotech. Officials from the ministries of Agriculture, Environment, and Science and Technology have participated in OFAB activities.
- b) **APPROVALS**: There are distinctions between the regulatory approval for food, feed, processing; and environmental release. Bt Cotton, PBR Cowpea, and TELA Maize are currently the only approved crops for commercial release. The government has approved imported biotech corn and soybean varieties for feed and oil processing. The NBC reviews operational guidelines for biotech crop approvals. The timeline for approvals is usually about 180 days.

- c) **STACKED OR PYRAMIDED EVENT APPROVALS:** The approval process and conditions are the same for stacked event approvals as for single trait approvals.
- d) **FIELD TESTING:** Field testing and evaluations are allowed. With the approval of the NBC, NRCRI-Umudike, IAR-Zaria, and NCRI-Badeggi have carried out CFTs on cassava, cotton, sorghum, cowpea, and rice. The approval is based on the provisions of the National Biosafety Guidelines, which include field-testing of biotech crops. NBRDA collaborates with NRCRI-Umudike, IAR-Zaria, and NCRI-Badeggi for creating awareness among Nigerian cowpea and cassava stakeholders, while NBMA ensures compliance with biosafety guidelines.
- e) **INNOVATIVE BIOTECHNOLOGIES:** In 2020, [NBMA authorized guidelines on genome editing](#), making Nigeria the first African country to issue genome editing guidelines. [The NBMA Act of 2015](#) (as amended) empowers NBMA to provide safety standards, guidelines, and rules to facilitate the development and implementation of genome editing guidelines. Nigeria has determined that genome edited products are subject to appropriate biosafety regulations on a case-by-case basis. The Act defines “Genetically Modified Organism (GMO)” as “any organism living or non-living that possesses a novel combination of genetic material obtained using modern biotechnology and gene-editing.” Nigeria adopted an approach to regulate genome-editing by noting that a product is classified as genetically engineered if recombinant deoxyribonucleic acid (DNA) sequences or the gene edited product has a novel combination of genetic material (e.g., uses a recombinant DNA that remains in the final product). On the other hand, when genome-edited or the product does not lead to or does not have a new combination of genetic material (e.g., does not use a recombinant DNA or uses a recombinant DNA that is removed in the final product), a non-GE regulatory classification is applied. For more information on Nigeria’s genome editing policy, [see here](#).
- f) **COEXISTENCE:** Biotech policy is still evolving. In 2019, [the government reviewed the 2015 Act](#), which incorporated new scientific developments. NBMA develops rules and guidelines to regulate biotech crop cultivation.
- g) **LABELING AND TRACEABILITY:** Regulations stipulate that products with four percent biotech content should be labeled with statements such as:
 - “This product contains genetically modified organisms” whenever there is evidence of the presence of biotech products.
 - “This product may contain genetically modified organisms” when it cannot be proven that the product does not contain biotech ingredients.

The [NBMA Act](#) requires mandatory labeling of all derivatives of agricultural biotechnology to “protect consumers’ right to know.” NAFDAC enforces existing labeling regulations including biotech labeling. NAFDAC regulations require that food labels be informative and accurate.

- h) **MONITORING AND TESTING:** The NBMA Act includes monitoring requirements. It also defines penalties for violating the regulations. Failure to obtain approval or proper permits before importing or releasing biotech organisms into the environment is subject to:

- Individuals can be fined NGN 2.5 million or imprisoned for a period not less than five years or both.
 - Corporations would pay a fine of at least NGN 5 million and the directors or officers of the companies “shall each be liable to a fine not less than NGN 2.5 million or imprisonment for a term not less than five years or to both fines and imprisonment.”
 - False information also results in the same penalty as failure to obtain appropriate approval.
 - Obstruction can also result in NGN 2.5 million fine or imprisonment for not less than three years or both.
- i) **LOW LEVEL PRESENCE (LLP) POLICY:** The tolerance for LLP of approved events by NBMA in the country of origin that are not yet approved is about 4 percent.
- j) **ADDITIONAL REGULATORY REQUIREMENTS:** After NBMA approves a biotech crop, the crop will also need to meet the requirements of other extant laws related to the seed system. Other agencies that regulate new varieties or importation of plants or organisms include the Nigeria Agricultural Quarantine Service (NAQS), the National Varietal Release Committee, NASC, and NAFDAC.

NASC and the National Varietal Release Committee require additional registration of seeds/traits before commercialization. Once the variety is approved and released by the National Varietal Release Committee and deregulated (in the case of seeds), no further registration is required. A NAFDAC registration is required for processed products

- k) **INTELLECTUAL PROPERTY RIGHTS (IPR):** In May 2021, the government signed into law the [Plant Variety Protection Act of 2021](#) to protect breeders’ rights, provide procedures to register varieties, and offenses and penalties for violators of the Act. Government stakeholders have expressed an interest in joining the International Union for the Protection of New Varieties of Plants.
- l) **CARTAGENA PROTOCOL RATIFICATION:** Nigeria signed the CPB in 2000 and its instrument of ratification was signed by the President on November 30, 2002. The protocol came into force in September 2003.
- m) **INTERNATIONAL TREATIES AND FORUMS:** Nigeria signed the Convention on Biological Diversity in 1992 and ratified the instrument in 1994. Officials of key biotech agencies such as the Ministry of Environment, NBRDA, and NMBA regularly attend meetings of international standard-setting bodies. Regulation of biotech products fall in line with *Codex Alimentarius* (Codex) guidelines.
- n) **RELATED ISSUES:** Not applicable

PART C: MARKETING

- a) **PUBLIC/PRIVATE OPINIONS:** The public has mixed opinions about biotech food products. To some, these products are very important in promoting food security and farmer livelihoods. Farmers are generally interested in biotech products to improve yields, increase incomes, and decrease input costs. Nigeria is actively developing biotech products for targeted use in Nigeria’s ecological zones affected by chronic pests and climate change. It is also developing

products that have widespread national popularity (e.g., cowpea, maize, sorghum, and rice) as food staples necessary for food security. On the other hand, there are civil society groups and environmental activists that campaign against biotech crops as being “unnatural.” Many scientists and civil society professionals have been educated in Europe where there may be more resistance to biotechnology. Consumers with more knowledge of biotechnology tend to be more accepting of biotech crops.

- b) **MARKET ACCEPTANCE/STUDIES:** Farmers are viewed as willing and ready to accept the commercialization of Bt Cotton, PBR Cowpea, and TELA Maize because of the expected positive financial benefits. While there are no known biotech acceptance studies focusing wholly on Nigeria, anecdotally it is thought that Nigeria farmers have accepted biotech crops, while the Nigerian public has an overall cordial attitude towards the biotech industry and research institutions.

CHAPTER 2: ANIMAL BIOTECHNOLOGY

PART D: PRODUCTION AND TRADE

- a) **RESEARCH AND PRODUCT DEVELOPMENT:** Efforts are directed toward preventing the loss of genetic diversity in farm animals, to develop value added products, and novel feed ingredients. Although there are no active animal biotech projects, several research projects are looking at innovative breeding practices:
 - i. **Animal Genetic Resources (AnGR)** underscores sustainable management through incorporating the FAO’s Global Plan of Action for collecting, processing, and preserving genetic resources both *in situ* and *ex situ* including sperm/bio banking. This project is in partnership with the Department of Animal Husbandry Services, Ministry of Agriculture and Food Security, and the National Advisory Committee on AnGR.
 - ii. **Assisted Reproductive Techniques in Livestock** focuses on the use of available, adaptive, and accessible reproductive technologies to facilitate the breeding of livestock. With a five-year partnership with Mississippi State University, strategies were set out to adapt these technologies across Africa by modeling them using a climate smart animal agriculture approach. Technologies included artificial insemination, multiple ovulation and embryo transfer, estrous synchronization, local hormone development, and *in vitro* fertilization.
 - iii. **Dairy Value Chain Development** is a priority for the government, with the hope of achieving sustainable genetic improvement and eventual increase in domestic dairy production. Current efforts have yielded positive results, for example, indigenous cows on participating farms produced 15- 20 liters of milk/cow/day compared to the unimproved indigenous breeds that produce about 1-1.5 liters.
- b) **COMMERCIAL PRODUCTION:** Not applicable
- c) **EXPORTS:** Not applicable
- d) **IMPORTS:** Not applicable
- e) **TRADE BARRIERS:** Not applicable

PART E: POLICY

- a) **REGULATORY FRAMEWORK:** Not applicable
- b) **APPROVALS/AUTHORIZATIONS:** Not applicable
- c) **INNOVATIVE BIOTECHNOLOGIES:** For more information on Nigeria's genome editing policy, see the government's approved national biosafety [guidelines on gene editing](#).
- d) **LABELING AND TRACEABILITY:** Not applicable
- e) **ADDITIONAL REGULATORY REQUIREMENTS:** Not applicable
- f) **INTELLECTUAL PROPERTY RIGHTS (IPR):** Not applicable
- g) **INTERNATIONAL TREATIES and FORUMS:** Not applicable
- h) **RELATED ISSUES:**

PART F: POLICY

- a) **PUBLIC/PRIVATE OPINIONS:** Not applicable
- b) **MARET ACCEPTANCE/STUDIES:** Not applicable

CHAPTER 3: MICROBIAL BIOTECHNOLOGY

PART G: PRODUCTION AND TRADE

- a) **COMMERCIAL PRODUCTION:** Post is not aware of commercial production of microbial biotech products.
- b) **EXPORTS:** There are no official statistics nor estimates on exports of microbial biotechnology products. Nigeria exports alcoholic beverages, dairy products, and processed products that may contain microbial biotech-derived food ingredients.
- c) **IMPORTS:** The only microbial biotech-derived food ingredients imported are those traditionally used in producing alcoholic beverages, dairy products, and processed food products.
- d) **TRADE BARRIERS:** There are no regulations that target the import of biotech microbes or their derived products.

PART H: POLICY

- a) **REGULATORY FRAMEWORK:** Not applicable
- b) **APPROVALS/AUTHORIZATIONS:** Not applicable
- 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:** Not applicable

PART I: MARKETING

- a) **PUBLIC/PRIVATE OPINIONS:** Not applicable
- b) **MARKET ACCEPTANCE/STUDIES:** Not applicable

Attachments:

No Attachments