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Report Highlights:

In July 2023, President Tinubu declared an "immediate state of emergency on food insecurity" to address high food prices and lackluster agricultural production. Nigeria is considered by some in Africa to be a leader in agricultural biotechnology as it has researched, tested, evaluated, and commercialized several biotech products, including cowpea, a staple crop for smallholder farmers across West Africa. There are at least eight biotech crops that are in different developmental stages, including staples of rice, cassava, sorghum, tomatoes, and maize. Generally, policy makers, researchers, and producers in Nigeria view products derived from biotechnology as an important tool to reduce food insecurity and bolster rural livelihoods. Nigeria has made no major changes to its biotechnology regulations, however in 2022, it did approve imports of a drought resistant biotech wheat variety from Argentina.

EXECUTIVE SUMMARY

In 2023, President Tinubu declared a food security emergency due to rising food price inflation reaching 30 percent year-over-year. Given that some estimate Nigeria to become the world's third most populous country by 2050, the government and private sector are both interested in utilizing agricultural biotechnology to enhance food security. Agriculture is dominated by smallholder farmers utilizing mostly family labor and traditional production practices. Crop yields are also under threat of climate change, to include higher temperatures, prolonged droughts, floods, and pest migration. As a result, the government and producer groups are generally supportive of biotech research, testing, and commercialization.

Nigeria is considered by many to be a continental leader in biotechnology development and research. It has researched, tested, evaluated, and commercialized several biotech products, including cowpea, a staple crop for smallholder farmers across West Africa. It has established biosafety evaluation institutions and a functioning biotech regulatory framework. In 2001, it established the National Biotechnology Development Agency (NABDA) to promote, commercialize, and regulate biotechnology products. The country also signed the biosafety bill into law, establishing the National Biosafety Management Agency (NBMA), which assumed biotech regulatory authority from NABDA in 2015. NBMA is Nigeria's main focal point and authority on biosafety, providing oversight for the use of biotechnology and regulating the commercialization of biotech products. In December 2020, NBMA authorized guidelines on gene editing, a first for any country in Africa.

The government is advancing and commercializing agricultural biotechnology as a tool to enhance food security and rural livelihoods. Nigeria approved two commercialized products; in 2018 it commercialized its first biotechnology crop, *Bacillus thuringiensis* (Bt) cotton, and in 2019, it commercialized Bt cowpea (Pod-Borer Resistant Cowpea PBR cowpea; AAT709A). There are eight biotech crops that are in different developmental stages, including staples of rice, cassava, sorghum, tomatoes, and maize. Nigeria permits the import of biotech crops for animal feed and seeds for research. In 2022, NBMA approved imports of a drought resistant biotech wheat variety from Argentina.

Generally, civil society is supportive of using biotechnology to enhance Nigeria's food security, reduce food imports, and lower food prices. Nigeria is seen as a leader in biotech research and development in Africa. 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. 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:

Herbicide Tolerant Soybeans: In collaboration with Michigan State University and the National Cereals Research Institute (NCRI), Badeggi, Niger State: The field trials aim to evaluate two glyphosate formulations (MSU lines, E14086 and E14017). Glyphosate-tolerant soybeans will be compared to leading Nigerian commercial varieties. Weed management is one major challenge holding back large-scale soybean production. The introgression of herbicide tolerance (HT) genes into commercial varieties will help to alleviate the struggle and cost of weed management. Confined field trials are ongoing at NABDA's trial plots in Abuja.

Objectives:

1. To screen HT soybean varieties with leading Nigerian commercial varieties.
2. To backcross HT soybean with leading Nigerian commercial varieties.
3. To check for stability and efficacy of HT gene against glyphosate in subsequent backcross progenies of soybean.
4. To commercialize and popularize improved HT soybean varieties.

ii. **TELA Maize:** This project was developed to resist fall armyworm and stem borers by the Institute for Agricultural Research (IAR), Zaria. It has been environmentally approved by NBMA. The variety produces 9MT/ha compared to 3MT/ha of the best producing maize variety in Nigeria.

iii. **Tomato:** This project is being carried out in collaboration with International Institute of Tropical Agriculture (IITA), Ibadan. There are two components of this project: A) Increasing shelf-life; and B) Adoption in the field by producers.

iv. **Nitrogen-efficient, water-efficient, salt-tolerant (NEWEST) Rice**: This project aims to compile national performance trials to submit to NBMA. The proof-of-concept on NEWEST rice has been done through selected farmers who have worked on introgression and backcross projects. The results indicated 10-15% improvement in yield, 30% reduction in nitrogen use, and 15% decrease in total production costs. Multi-locational trials have been completed and data are being compiled by the NCRI, Badeggi, Niger State.

v. **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 former completed confinement field trials (CFTs) at Umudike. 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.

vi. **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 de l'Environnement et Recherches Agricoles, Burkina Faso, Kenya Agricultural and Livestock Research Organization, IAR, NABDA, the Council for Scientific and Industrial Research, South Africa, African Agricultural Technology Foundation (AATF) in Kenya, and the International Crops Research Institute for the Semi-Arid Tropics. The CFTs have been suspended due to lack of funding.

According to the project implementers:

- Sorghum transformation time has been reduced by 60% or from six months to four, and thetransformation frequency was increased by about 100-fold over previous capabilities.
- Enabled the use of direct and indirect transformation of preferred native African sorghum varieties.
- Beta (β)-carotene levels and stability in sorghum increased to 50-70 μg/g; β-carotene stability also increased to nearly 10 weeks.
- Efficient bioconversion of bioavailable β-carotene to retinol, which converts to vitamin A.
- Increased bioavailability of iron and zinc through reduction in phytate, without impacts on seed germination.
- Multiple stacked constructs and "regulatory-ready" events in at least two different popular varieties of sorghum – increased levels of essential nutrients, especially lysine, vitamin A, iron, and zinc.
- Developed procedures for regulated CFTs and transgenes introgression into local varieties, with trials conducted in Nigeria and Kenya.

vii. **Blight Resistant Potatoes:** This project is in collaboration between the NRCRI in Jos Station and AATF. CFTs were completed at Umudike.

b. COMMERCIAL PRODUCTION: Bollgard II cotton (Bt cotton) and PBR cowpea are available for commercialization. In 2019 and 2021, producers began planting these crops, respectively.

i. **Bt Cotton:** This collaborative project involved Bayer in Nigeria, Mahyco Private Limited, IAR, NABDA, and the National Agricultural Seed Council (NASC). In 2018, Nigeria approved the commercial cultivation of two Bt cotton hybrids (Mahyco C 567 BGII & Mahyco C 571 BGII) after two years of multi-locational trials conducted by IAR.

In 2019, Mahyco sought to demonstrate the value of its hybrid seed technology to farmers. It distributed more than 2,000 samples through its partners to select farmers. The company also trained more than 200 farmers on appropriate agronomic practices conducted during various phases of crop growth across 12 states. The training focused on agronomy skills to optimize and sustain yields. In addition, the company conducted seed production training sessions to reduce the impact of

diseases, pests, and weeds. The seed was developed in India, so it is seen as suitable to Nigeria's climate, and involved no backcrossing.

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 highly 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 notorious parasitic weeds. Bt cowpea is expected to allow farmers to reduce the insecticide applications from 6-7 to only 2 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%.

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-complaint shipments and refuse entry. 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. 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 measuresapplied 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 managementand collection of duties of customs and duties. National biosafety regulations, forms, and fees can be found here.

e) FOOD AID: Nigeria does not provide food aid. It receives food aid, including biotech corn-soy blended products.

f) TRADE BARRIERS: Nigeria maintains an open market for agricultural commodities and productsderived 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 National Biosafety Committee (NBC) reviews applications. It carries out data analyses of socio-economic considerations of biotech crops alongside risk assessments beforerecommending 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 at https://nbma.gov.ng

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).

ii. 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.

iii. Federal Ministry of Agriculture and Food Security: The ministry formulates agricultural policies relating to biotechnology. It oversees all public agricultural research institutions. NASC is an agency under the ministry and is responsible for developing and regulating the seed (biotech and conventional) industry.

iv. NABDA: Established in 2001 under the Ministry of Science and Technology with the mandate to formulate biotechnology policy and acquire, deploy, promote, and facilitate biotech

activities. 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.

v. National Agency for Food and Drug Administration and Control (NAFDAC): Part of the Ministry of Health. Oversees all food safety product issues including drugs, chemicals, and related products. Regulates herbicide tolerance to determine maximum residue limits (MRLs) in food and feed products.

vi. 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.

vii. Nigerian National Universities: Several national universities are also involved in the research anddevelopment of biotech, including CFTs. Most of these universities have institutional biosafety committees.

viii. *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 (NBTSs) 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 NBTSs to carry out risk assessments and ensure participation of all relevant stakeholders. Findings of the NBTSs are submitted to the NBC and the agreed decision is conveyed to the applicant by the NBMA. The NBMA is responsible for the safe application, use, and handling of biotech organisms and products.

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 A) food, feed, processing; and B) environmental release. Bt Cotton, Bt Cowpea, and TELA Maize are currently the only approved crops for environmental release (i.e., cultivation). 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. NABDA 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, noting that a product is classified as genetically engineered if recombinant 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 thepresence of biotech products.
- "This product may contain genetically modified organisms" when it cannot be proven that theproduct 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 thecompanies "shall each be liable to a fine not less than NGN 2.5 million or imprisonment for aterm 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 yearsor 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 in Nigeria is 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 (NAQC), 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 containing biotech products. The Ministry of Agriculture requires registering occurrences of insects building resistance to biotech crops. For HT traits, herbicides need to be registered differently by NAFDAC.

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 (UPOV).

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, NABDA, 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. 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 and Bt Cowpea because of the expected positive monetary 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) 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:

a. **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.

b. **Assisted Reproductive Techniques in Livestock** focuses on the use of available, adaptive, and accessible reproductive technologies to facilitate the breeding of livestock. With a 5-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.

c. **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 1-1.5liters.

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: MARKETING

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, however some companies may be researching biopesticides to clean water from industrial waste.

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 inproducing alcoholic beverages, dairy products, and processed food products. Nigeria imports alcoholic beverages, dairy products, and processed products that may contain microbial biotech-derived food ingredients.

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

d) **PUBLIC/PRIVATE OPINIONS:** Not applicable

e) **MARKET ACCEPTANCE/STUDIES:** Not applicable

Attachments:

No Attachments