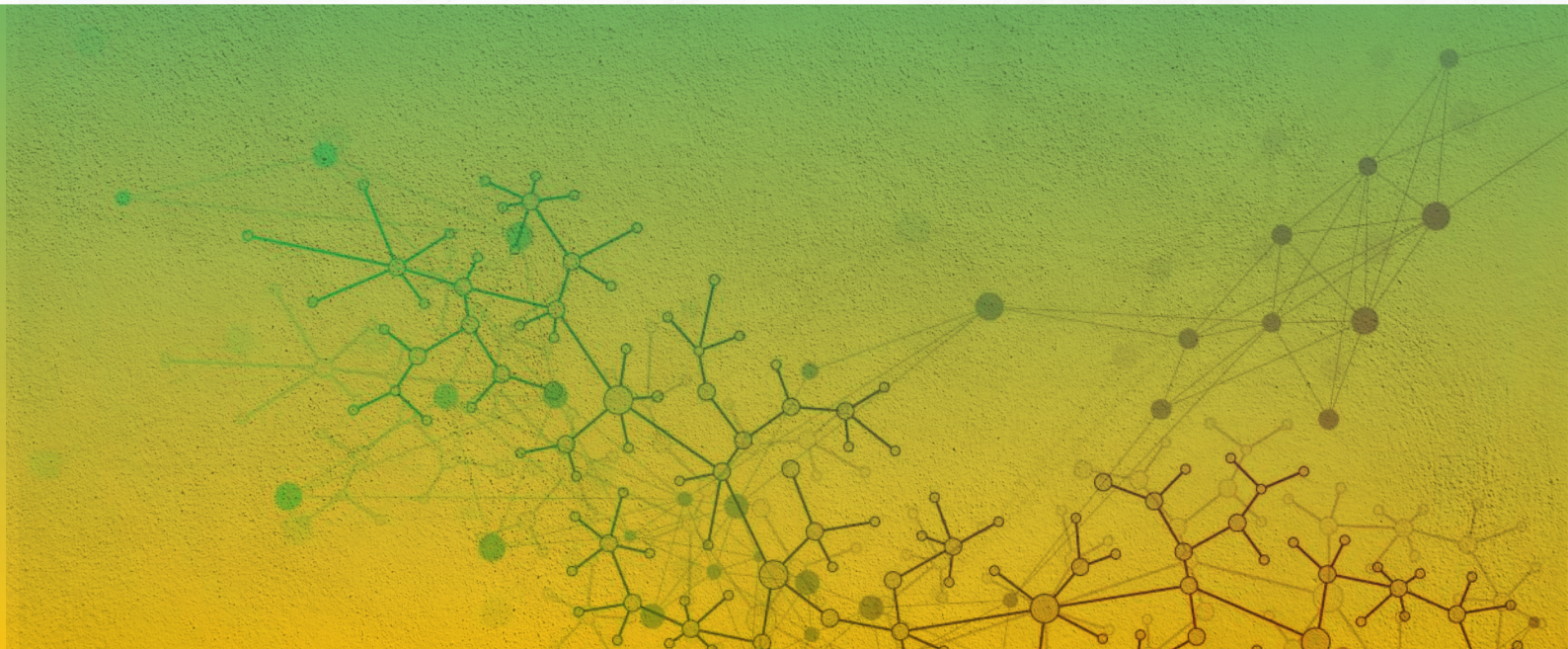




# COMESA **BRIEF**

**BIOSAFETY AND GM COMMODITIES:  
DEVELOPMENTS AND TRENDS BY 2024**





# ABBREVIATIONS

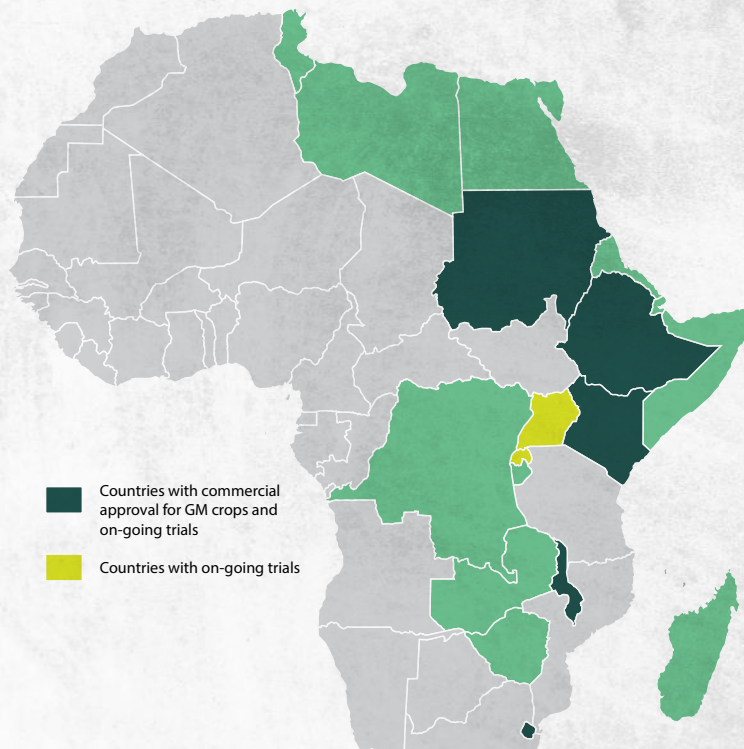
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ACTESA	The Alliance for Commodity Trade in Eastern and Southern Africa
BCH	Biosafety Clearing House
COMESA	Common Market for Eastern and Southern Africa
CPB	Cartagena Protocol on Biosafety
CBD	Convention on Biological Biodiversity
FAO	Food and Agriculture Organization
GM	Genetically Modified
GMO	Genetically Modified Organisms
ISAAA	International Service for the Acquisition of Agri-biotech Applications
LMOs	Living Modified Organisms
NBFs	National Biosafety Frameworks
PBS	Program for Biosafety Systems
RABESA	Regional Approach to Biotechnology and Biosafety Policy in Eastern and Southern Africa
UNEP-GEF	United Nations Environment Program- Global Environment Facility
USDA	United States Development Agency

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# COMESA

## COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA

### BACKGROUND

In order to enhance the operationalization of Common Market for Eastern and Southern Africa (COMESA) Member States' biotechnology and biosafety policy implementation plan, ACTESA and ISAAA AfriCenter in partnership with PBS supported the review and updating of a brief on the status of biotechnology and biosafety policies in the COMESA region. Although most countries in the COMESA region drafted national biosafety frameworks under the UNEP-GEF Biosafety Project in 2006, only 11 countries in the region have stand-alone biosafety laws. They include: Eswatini, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Tunisia and Zambia. In the period since the development of the frameworks, some countries have progressed through research to commercialization of biotech products, while others have utilized the laws for trade and transboundary movement of GM based commodities. Some countries such as Kenya, Eritrea and Tunisia have had phases of ban decisions on importation of GM foods, exemplifying the need for continued awareness creation efforts and capacity building for enabling policy environments.

COMESA strives to promote regional economic integration through trade and investment. The success of this important goal depends to a large extent on the harmonization of policies, laws and regulations affecting trade in the COMESA member states. Agriculture forms the backbone of the economies of member countries. An estimated 80% of the population in member countries depend on agriculture for their livelihoods. Furthermore, agriculture accounts for more than 32% of the COMESA gross domestic product and provides 65% of the raw material for industry. The harmonization of biotechnology and biosafety policies within COMESA is therefore, not only desirable but will be indispensable if free trade, especially of agricultural commodities, is to be achieved.



## **OBJECTIVES OF THE ASSESSMENT**

To document the current status of biotechnology and biosafety in COMESA countries with respect to:

1. Biotechnology and Biosafety policies
2. Biosafety Laws or Bills
3. Biosafety implementing regulations and
4. Any other legislation that may have clauses on biotechnology and biosafety.

The assessment was based on information available in the public domain e.g. in the BCH and is not intended for legal interpretation or opinion on compliance with referenced legislation and regulations.

## **WHY BIOSAFETY FRAMEWORKS FOR COMESA MEMBER COUNTRIES?**

All COMESA countries are signatories to the Cartagena Protocol on Biosafety (CPB), a binding international agreement under the Convention on Biological Biodiversity (CBD). They are therefore bound by the provisions of the Protocol which requires countries to establish biosafety procedures for transboundary movement, transit, handling and use of all living modified organisms that may have adverse effects on the conservation and sustainable use of biological diversity, taking into account risks to human health. COMESA member countries have initiated the process of development of biotechnology/ biosafety policies and biosafety frameworks mainly through the United Nations Environment Programme's - Global Environment Facility (UNEP-GEF). The aim of the frameworks is to ensure that biotechnology is harnessed safely in the context of the members' development priorities. The program was initiated to support countries establish National Biosafety Frameworks (NBFs), promote information sharing and collaboration to assist capacity-building for domestication of the Protocol.

According to UNEP-GEF, main components of a comprehensive Biosafety framework include:

- A government policy on biosafety, often part of a broader policy on biotechnology;
- A regulatory regime for biosafety which could include Acts and regulations;
- A system for handling of notifications or requests for consents to undertake biotech related activities;
- A mechanism for monitoring and inspections; and,
- A system for public information and participation.



**POPULATION**

**12.3 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Coffee, Tea, Maize, Sorghum,  
and Cassava



# BURUNDI

Burundi has a population of approximately 12.3 million as of 2024, occupies a landmass of around 27,830 KM2, with approximately 35% of its land being arable. The country's major agricultural produce includes coffee, tea, maize, sorghum, and cassava.

ISSUE	STATUS
Biotechnology Policy status and year	A Draft National Biosafety Framework, 2006
Biosafety Bill or Law and Year	Law no 1/08 of 23 April 2012 on the organization of the seed sector
Implementing Regulations	Regulated pursuant to Cartagena Protocol on Biosafety (CPB) and in accordance with Law no 1/08 of 23 April 2012 on the organization of the seed sector
GM Crops Approved and Years	None
GM crops under CFT as approved by National Biosafety Committee or Authority	None



Any Trade in GM products?	The country allows imports of GM food or feed upon authorization
Access to Food aid with GM content?	None
Main agricultural exports and destinations	Export destinations: Tanzania, Kenya, Uganda, Rwanda Products: Coffee, tea, cotton, maize
Main agricultural imports and countries sourced	Source countries: Tanzania, Kenya, Uganda, Rwanda Products: Wheat, malt, rice, cereal flours
Key Biotech Challenges	Low human and infrastructural capacity, weak enabling legislation, and lack of financial investments





**POPULATION**

**1.3 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Vanilla, Cloves, Ylang-Ylang,  
Coconuts, and Bananas



# COMOROS

Comoros, has a population of approximately 1.3 million people. The total land area of Comoros is about 2,235 KM<sup>2</sup>, with the arable land being approximately 34.93 %. The nation's agricultural sector is significant, with major produce including vanilla, cloves, ylang-ylang, coconuts, and bananas.

ISSUE	STATUS
Biotechnology Policy status and year	Draft National Biosafety Framework, 2006
Biosafety Bill or Law and Year	Law on Plant Protection of 2006 (Loi sur la protection des végétaux, 2006)
Law on Plant Protection of 2006	Regulated pursuant to Cartagena Protocol on Biosafety and in accordance to the Law on Plant Protection of 2006
GM Crops Approved and Years	None
GM crops under CFT as approved by National Biosafety Committee or Authority	None



Any Trade in GM products?	The country allows imports of GM food or feed upon authorization
Access to Food aid with GM content?	None
Main agricultural exports and destinations	Export destinations: Madagascar, Tanzania, Kenya, Seychelles Products: Vanilla, ylang-ylang, cloves
Main agricultural imports and countries sourced	Source countries: Madagascar, Tanzania, Kenya, Seychelles Products: Wheat, malt, rice, cereal flours
Key Biotech Challenges	Low human and infrastructural capacity, low public awareness, weak enabling legislation, and lack of financial investments





**POPULATION**

**112 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Coffee, Palm Oil, Rubber, Cocoa,  
and Cassava.



# D.R. CONGO

The Democratic Republic of the Congo, has a population of approximately 112 million people and a vast landmass exceeding 2.3M KM<sup>2</sup>, possesses arable land comprising roughly 3% of its territory. The DRC's agricultural sector produces coffee, palm oil, rubber, cocoa, and cassava.

ISSUE	STATUS
Biotechnology Policy status and year	Draft National Biosafety Framework, 2006
Biosafety Bill or Law and Year	Law N 11/009 of July 09, 2011 on Fundamental Principles Relating to the Protection of the Environment and Law on Fundamental Principles of Environmental Protection, 2011 may serve for a number of biosafety regulations
Implementing Regulations	Section 5 of the Law on Fundamental Principles of Environmental Protection, 2011, mainly in its articles 62 and 63 stipulates some measures concerning GMOs, particularly: <ul style="list-style-type: none"> <li>- Risk assessment and management</li> <li>-Intentional introduction into the environment (AIA)</li> <li>-Transboundary movement (import/export)</li> </ul>



GM Crops Approved and Years	None
GM crops under CFT as approved by National Biosafety Committee or Authority	None
Any Trade in GM products?	The country may import GM food or feed and there is no authorization process
Access to Food aid with GM content?	None
Main agricultural exports and destinations	Destinations: Zambia, Tanzania, Uganda, Rwanda Products: Cocoa, coffee, perfumed crops, vegetable saps, palm oil
Main agricultural imports and countries sourced	Source countries: Zambia, Tanzania, Uganda, Rwanda Products: Maize, rice, wheat, wheat flours, dried legumes
Key Biotech Challenges	Low human and infrastructural capacity, low public awareness, weak enabling legislation, and lack of financial investments



**POPULATION**

**1.0 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Fruits and Vegetables.



# DJIBOUTI

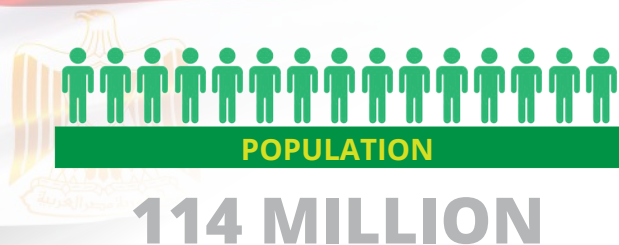
Djibouti has a population of approximately 1.0 million people and a landmass of about 23,200 KM<sup>2</sup>, about only 23% of which is arable. It has a significant agricultural sector focused on producing fruits and vegetables.

ISSUE	STATUS
Biotechnology Policy status and year	Draft National Biosafety Framework, 2006
Biosafety Bill or Law and Year	None
Implementing Regulations	None
GM Crops Approved and Years	None
GM crops under CFT as approved by National Biosafety Committee or Authority	None

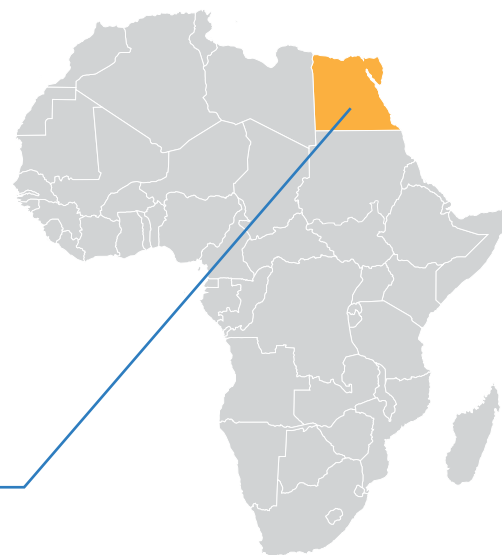


Any Trade in GM products?	The country allows imports GM food or feed upon authorization
Access to Food aid with GM content?	None
Main agricultural exports and destinations	Destination countries: Ethiopia, Somalia, Kenya Products: Vegetables, fruits
Main agricultural imports and countries sourced	Source countries: Ethiopia, Somalia, Kenya, Products: Maize, wheat, sorghum
Key Biotech Challenges	Low human and infrastructural capacity, low public awareness, lack of enabling legislation, and lack of financial investments





Wheat, maize, rice, sorghum and fruits



# EGYPT

Egypt's population stands at 114 million (Worldometer, 2024). The country's landmass is 995,450 KM<sup>2</sup>, with the arable land size being 40, 310 KM<sup>2</sup> (4.05%). Wheat, maize, rice, sorghum and fruits are some of the main agricultural produce from the country.

ISSUE	STATUS
Biotechnology Policy status and year	No Biosafety Law or Regulations
Biosafety Bill or Law and Year	Draft Biosafety Law for Release of Genetically Modified Products, 2006
Implementing Regulations	Implementation of national obligations under the Cartagena Protocol on Biosafety pursuant to Article 2.
GM Crops Approved and Years	Insect Resistant maize, 2010- research and commercialization was halted due to lack of a biosafety act in the country

GM crops under CFT as approved by National Biosafety Committee or Authority	<p>The country allows imports of GM food or feed upon authorization, and so long as the country of origin also consumes the products as food and feed</p> <p>The country imports about 8.8 million metric tons (MMT) of maize and 2 MMT of soybeans annually, largely sourced from the United States and other markets that openly commercialize genetically-engineered (GM) varieties.</p>
Access to Food aid with GM content?	None
Main agricultural exports and destinations	<p>Destination countries: Sudan, Ethiopia, Libya, Kenya</p> <p>Products: wheat, rice, vegetables, fruits, cotton</p>
Main agricultural imports and countries sourced	<p>Source countries: Sudan, Ethiopia, Libya, Kenya</p> <p>Products: Wheat, rice, sugar, tea</p>
Key Biotech Challenges	Lack of political goodwill, low public awareness, negative perception and heightened activism against the technology, lack of enabling legislation, and lack of financial investments







POPULATION

7.3 MILLION



MAJOR AGRICULTURAL PRODUCE

Sorghum, Millet, Barley, and Livestock



# ERITREA

Eritrea, with a population of approximately 7.3 million people, a landmass of about 117,600 Km<sup>2</sup>, the arable land mass being about 5.7%. The country has a diverse agricultural sector producing sorghum, millet, barley, and livestock.

ISSUE	STATUS
Biotechnology Policy status and year	Draft National Biosafety Framework, 2006
Biosafety Bill or Law and Year	Proclamation No. 179/2017. The Eritrean Environmental Protection, Management and Rehabilitation Framework
Implementing Regulations	All functions pursuant to the Cartagena Protocol on Biosafety
GM Crops Approved and Years	None
GM crops under CFT as approved by National Biosafety Committee or Authority	None

Any Trade in GM products?	The country does not import any GM food or feed (banned).
Access to Food aid with GM content?	None
Main agricultural exports and destinations	Destination countries: Ethiopia, Sudan, Kenya Products: Sesame, vegetables
Main agricultural imports and countries sourced	Source countries: Ethiopia, Sudan, Kenya Products: Wheat, barley, sorghum
Key Biotech Challenges	Low human and infrastructural capacity, lack of political goodwill, low public awareness, negative perception and heightened activism against the technology, lack of enabling legislation, and lack of financial investments





**POPULATION**

**1.2 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Sugarcane, Maize, Citrus Fruits, and Forestry Product



# ESWATINI

Eswatini has a population of approximately 1.2 million people and a landmass of around 17,364, with roughly 10% of its land being arable. The country's major agricultural produce includes sugarcane, maize, citrus fruits, and forestry products.

ISSUE	STATUS
Biotechnology Policy status and year	Biosafety Policy, 2006
Biosafety Bill or Law and Year	Biosafety Act of 2012, amended in 2020
Implementing Regulations	Draft Regulations 2023
GM Crops Approved and Years	Insect Resistant (Bt) Cotton, 2018
GM crops under CFT as approved by National Biosafety Committee or Authority	Confined Field Trials of Bt hybrid cotton containing Cry 1Ac gene (Event-1) developed by JK Agri Genetics Ltd, 2016



Any Trade in GM products?	The country allows imports of GM food or feed upon authorization. Most GM food commodities are imported from the Republic of South Africa (RSA)
Access to Food aid with GM content?	The country has not faced any LLP/AP situations in the last 10 years. The country has conditions for LLP at 1% threshold. Requires labelling.
Main agricultural exports and destinations	Destination countries: South Africa, Mozambique, Zambia Products: Citrus, sugar
Main agricultural imports and countries sourced	Source countries: South Africa, Mozambique, Zambia Products: Maize, wheat, sugar
Key Biotech Challenges	Low human and infrastructural capacity, low public awareness, weak enabling policies





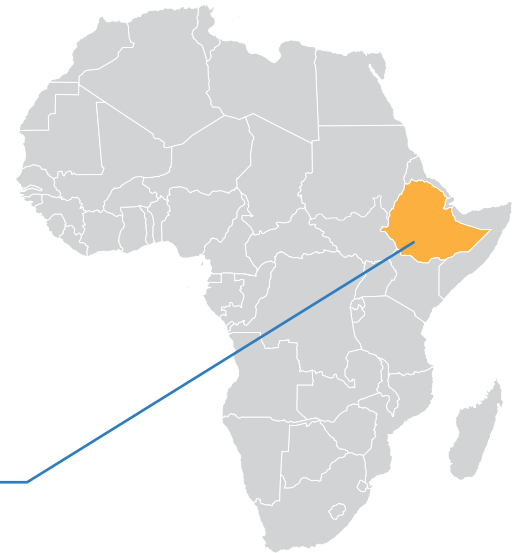
**POPULATION**

**124 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Coffee, Cereals such as Wheat and Maize, Oilseeds, Pulses, and Flowers.



# ETHIOPIA

Ethiopia has a population of approximately 124 million people and a vast landmass of about 1.1 M KM<sup>2</sup>, with an arable land covering approximately 13%. The country's agricultural sector is diverse, producing coffee, cereals such as wheat and maize, oilseeds, pulses, and flowers.

ISSUE	STATUS
Biotechnology Policy status and year	Draft National Biosafety Framework, 2006
Biosafety Bill or Law and Year	Biosafety Proclamation No896/2015
Implementing Regulations	Guidelines (GMO-Research and Training), 2018 Guidelines (GMO Risk Assessment), 2018 Guidelines (GMO Risk Management), 2018 Guidelines (GMO Transport and storage), 2018
GM Crops Approved and Years	Bt cotton, 2018 ( <a href="https://apps.fas.usda.gov/newgainapi/api/report/_">https://apps.fas.usda.gov/newgainapi/api/report/_</a> )

<p>GM crops under CFT as approved by National Biosafety Committee or Authority</p>	<p>Insect resistant and drought tolerant (TELA) maize, 2018)          Enset resistant to Bacteria wilt disease is also in the CFT          Source: (<a href="https://apps.fas.usda.gov/newgainapi/api/report/">https://apps.fas.usda.gov/newgainapi/api/report/</a>)</p>
<p>Any Trade in GM products?</p>	<p>The country allows imports GM food or feed upon authorization.          The country imports processed agricultural products such as soybean and corn oils, as well as breakfast cereals containing GM ingredients.          The country also imports GM-cotton (a non-food commodity) from India and the United States.</p>
<p>Access to Food aid with GM content?</p>	<p>The country allows some food commodities like corn-soy blend (CSB) which are GM products for school feeding and humanitarian program under a special waiver</p>
<p>Main agricultural exports and destinations</p>	<p>Destination countries: Kenya, Sudan, Djibouti, Somalia, South Sudan          Products: Coffee, oilseeds, pulses</p>
<p>Main agricultural imports and countries sourced</p>	<p>Main source countries: Kenya, Sudan, Djibouti, Somalia, South Sudan          Main products: Maize, wheat, sugar</p>
<p>Key Biotech Challenges</p>	<p>Low public awareness, negative perception and heightened activism against the technology, and limited financial investments, need for stewardship training and efforts for the adopting farmers</p>







**POPULATION**

**54 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Tea, Coffee, Horticultural Products, Maize, and Sugarcane.



# KENYA

Kenya, has a population of approximately 54 million people and a landmass of approximately 580,367 KM2, with an arable land covering about 10.2 % of its territory. The country's major agricultural produce includes tea, coffee, horticultural products, maize, and sugarcane.

ISSUE	STATUS
Biotechnology Policy status and year	Kenya National Biotechnology Development Policy, 2006
Biosafety Bill or Law and Year	The Biosafety Act No.2 of 2009 (Amendment 2018)
Implementing Regulations	<p>The Biosafety (Contained Use) Regulations, 2011</p> <p>The Biosafety (Import, Export and Transit) Regulations, 2011</p> <p>The Biosafety (Environmental Release) Regulations, 2011</p> <p>The Biosafety (Labelling) Regulations, 2012.</p> <p>Guidelines for determining the Regulatory Process of Genome Edited Organisms and Derived Products in Kenya, 2022</p> <p>Sampling guidelines for the testing of genetically modified organisms and derived products in Kenya, 2023</p> <p>Guidelines for the testing of genetically modified organisms in Kenya, 2023</p>

<p>GM Crops Approved and Years</p>	<p>2022-Decision to approve commercialization of Bt maize (MON 810)- progress awaiting court's decision</p> <p>2021-Decision to approve environmental release of Virus resistant cassava (Event 4046)-undergoing National Performance Trials (NPTs)</p> <p>2020- Decision to approve commercialization of Bt cotton (MON 15985)</p>
<p>GM crops under CFT as approved by National Biosafety Committee or Authority</p>	<p>2023- Late Blight resistant potato:3 CFTs</p> <p>2023- Maize with Drought tolerance and insect resistance stacked traits (MON89034 &amp; MON87460): 2 CFTs.</p>
<p>Any Trade in GM products?</p>	<p>Although the government through a Cabinet Memorandum on October 3, 2022 approved the importation, cultivation and use of GM derived products, the trade has not happened s due to court cases (and an injunction of the High Court) filed against this decision</p>
<p>Access to Food aid with GM content?</p>	<p>Although the government through a Cabinet Memorandum on October 3, 2022 approved the importation, cultivation and use of GM derived products, movement of the products for aid has not happened due to court cases (and an injunction of the High Court) filed against this decision</p>
<p>Main Agricultural exports and destinations</p>	<p>Destination countries: Uganda, Ethiopia, Rwanda, Egypt, Sudan, Madagascar</p> <p>Products: Tea, coffee, vegetables</p>
<p>Main Agricultural imports and countries sourced</p>	<p>Source countries: Uganda, Tanzania, Ethiopia, Rwanda, Egypt, Zambia</p> <p>Products: Maize, wheat, sugar, rice</p>
<p>Key Biotech Challenges</p>	<p>Low public awareness, negative perception and heightened activism against the technology, and limited financial investments, need for stewardship training and efforts for the adopting farmers</p>



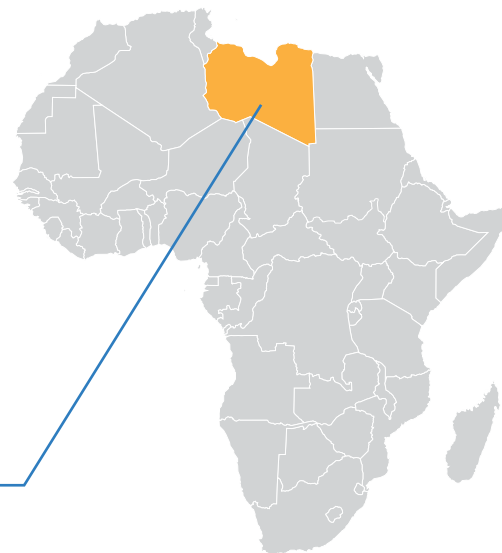
**POPULATION**

**7.5 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Wheat, Barley, Olives, Dates, and Citrus Fruits.



# LIBYA

Libya has a population of approximately 7.5 million people and a landmass of about 1.75 M KM2, with the arable land being approximately 1.03% of its territory. The country's major agricultural produce includes wheat, barley, olives, dates, and citrus fruits.

ISSUE	STATUS
Biotechnology Policy status and year	No stand-alone biosafety policy
Biosafety Bill or Law and Year	Law No.15/2003 on Protection and Improvement of Environment
Implementing Regulations	In accordance to Law No.15/2003 on Protection and Improvement of Environment and pursuant to the Cartagena Protocol on Biosafety (CPB)
GM Crops Approved and Years	None



GM crops under CFT as approved by National Biosafety Committee or Authority	None
Any Trade in GM products?	Information not available
Access to Food aid with GM content?	Information not available
Main agricultural exports and destinations	Destination countries: Tunisia, Egypt, Algeria, Sudan Products: Fruits, vegetables, olive oil
Main agricultural imports and countries sourced	Source countries: Tunisia, Egypt, Algeria, Sudan Products: Wheat, rice, sugar
Key Biotech Challenges	Low human and infrastructural capacity, low public awareness, , lack of enabling legislature, and lack of financial investments





**POPULATION**

**31.9 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Vanilla, Cloves, Coffee, and Rice.



# MADAGASCAR

Madagascar has a population of approximately 31.9 million people and a landmass of about 587,041 KM<sup>2</sup>. The arable land size is approximately 5.5% of its territory. The country's major agricultural produce includes vanilla, cloves, coffee, and rice.

ISSUE	STATUS
Biotechnology Policy status and year	Draft National Biosafety Framework, 2006 Source: BCH
Biosafety Bill or Law and Year	Decree No. 2012- 833 relating to the powers of the biosafety bodies in Madagascar)
Implementing Regulations	All functions pursuant to Cartagena Protocol on Biosafety
GM Crops Approved and Years	None

GM crops under CFT as approved by National Biosafety Committee or Authority	None
Any Trade in GM products?	None
Access to Food aid with GM content?	The country has faced LLP/AP situations in the last 10 years, concerning importation of Bt maize
Main agricultural exports and destinations	Destination countries: Kenya, Tanzania, Mauritius, Comoros Products: Vanilla, cloves, lychees
Main agricultural imports and countries sourced	Source countries: Kenya, Tanzania, Mauritius, Comoros Products: Rice, wheat, sugar
Key Biotech Challenges	Low human and infrastructural capacity, low public awareness, weak enabling policies, and lack of financial investments



**POPULATION**

**22.9 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Tobacco, Tea, Sugarcane, and Maize



# MALAWI

Malawi, has a population of approximately 22.9 million people with a landmass of around 118,484 KM2, with the arable land covering approximately 35% of its territory. The country's major agricultural produce includes tobacco, tea, sugarcane, and maize.

ISSUE	STATUS
Biotechnology Policy status and year	National Biotechnology and Biosafety Policy of 2008
Biosafety Bill or Law and Year	Biosafety Act 2002 (currently under review)
Implementing Regulations	Regulations No. 15A of 2007
GM Crops Approved and Years	Commercial cultivation of insect resistant (Bt cotton, 2019)
GM crops under CFT as approved by National Biosafety Committee or Au-thority	Bt maize Source: Biosafety registrar, Malawi



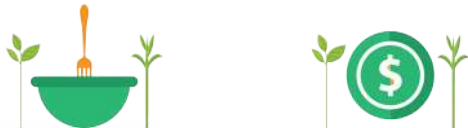
Any Trade in GM products?	Malawi allows imports of GM food or feed upon authorization.
Access to Food aid with GM content?	None
Main agricultural exports and destinations	Destination countries: Zambia, Tanzania, South Africa, Mozambique Products: Tobacco, tea, sugar
Main agricultural imports and countries sourced	Source countries: Zambia, Tanzania, South Africa, Mozambique Products: Maize, Wheat, Sugar
Key Biotech Challenges	Low public awareness, negative perception and heightened activism against the technology, and limited financial investments, need for stewardship training and efforts for the adopting farmers





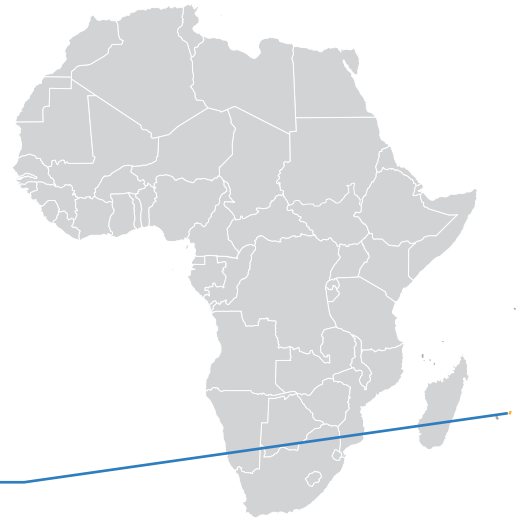
**POPULATION**

**1.3 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Sugarcane, Tea, Fruits, and Vegetables



# MAURITUS

Mauritius has a population of approximately 1.3 million people and a landmass of about 2,040 KM<sup>2</sup>, with an arable land covering approximately 49% of its territory. The country's major agricultural produce includes sugarcane, tea, fruits, and vegetables.

ISSUE	STATUS
Biotechnology Policy status and year	No stand-alone policy
Biosafety Bill or Law and Year	The Genetically Modified Organisms Act 2004 – Mauritius The Plant Protection Bill 2006
Implementing Regulations	All functions pursuant to the Cartagena Protocol on Biosafety
GM Crops Approved and Years	None
GM crops under CFT as approved by National Biosafety Committee or Authority	None

Any Trade in GM products?	The country may import GM food or feed and there is no authorization process
Access to Food aid with GM content?	None
Main agricultural exports and destinations	Destination countries: Kenya, Madagascar, South Africa, Products: Sugar, fruits, vegetables
Main agricultural imports and countries sourced	Source countries: Kenya, Madagascar, South Africa, Tanzania Products: Rice, wheat, sugar
Key Biotech Challenges	Low public awareness, negative perception and heightened activism against the technology, and limited financial investments



**POPULATION**

**13.3 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Coffee, Tea, Pyrethrum, and Bananas.



# RWANDA

Rwanda has a population of approximately 13.3 million people and a landmass of around 26,338 KM<sup>2</sup>, with an arable land covering approximately 47% of its territory. The country's major agricultural produce includes coffee, tea, pyrethrum, and bananas.

ISSUE	STATUS
Biotechnology Policy status and year	Draft National Biosafety Framework, 2006
Biosafety Bill or Law and Year	Law No 05/2024 of 16/02/2024 governing Biosafety
Implementing Regulations	All functions pursuant to the Cartagena Protocol on Biosafety
GM Crops Approved and Years	None
GM crops under CFT as approved by National Biosafety Committee or Authority	Virus resistant Cassava, 2020



Any Trade in GM products?	Authorisation granted for import of GM soybean and maize
Access to Food aid with GM content?	Data not available yet
Main agricultural exports and destinations	Destination countries: Kenya, Uganda, Tanzania, Burundi Products: Coffee, tea, fruits
Main agricultural imports and countries sourced	Source countries: Kenya, Uganda, Tanzania, Burundi Products: Maize, Wheat, Sugar
Key Biotech Challenges	Low public awareness





**POPULATION**

**98,000**



**MAJOR AGRICULTURAL PRODUCE**

Fish, Coconuts, and Cinnamon



# SEYCHELLES

Seychelles has a population of approximately 98,000 people and a landmass of about 459 KM<sup>2</sup>. The country relies on its marine resources due to limited arable land. The country's major agricultural produce includes fish, coconuts, and cinnamon.

ISSUE	STATUS
Biotechnology Policy status and year	Draft National Biosafety Framework, 2005
Biosafety Bill or Law and Year	Animal and Plant Biosecurity Act 2014, Environment Protection Act 2016
Implementing Regulations	All functions pursuant to the Cartagena Protocol on Biosafety
GM Crops Approved and Years	None
GM crops under CFT as approved by National Biosafety Committee or Authority	None

Any Trade in GM products?	Information not available yet
Access to Food aid with GM content?	Information not available yet
Main agricultural exports and destinations	Destination countries: South Africa, Madagascar, Kenya, Tanzania Products Fish, canned Tuna
Main agricultural imports and countries sourced	Source countries: South Africa, Madagascar, Kenya, Tanzania Products: Wheat, rice, sugar
Key Biotech Challenges	Low human and infrastructural capacity, lack of political goodwill, low public awareness, weak enabling policies, and lack of financial investments



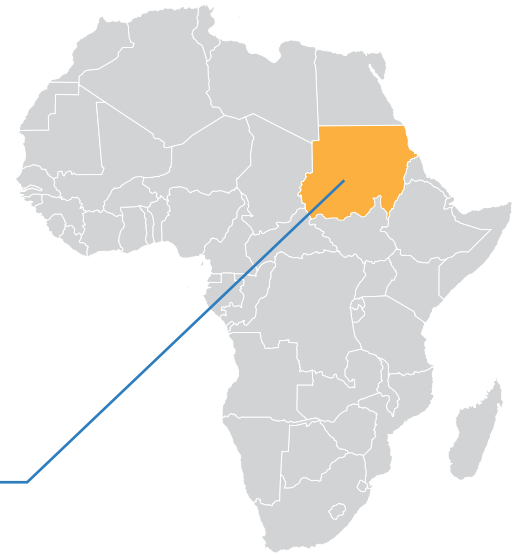
**POPULATION**

**53.9 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Sorghum, Millet, Wheat, and Cotton



# SUDAN

Sudan has a population of approximately 53.9 million people and landmass of about 1.8 M KM<sup>2</sup>, with an arable land covering approximately 6% of its territory. The country's major agricultural produce includes sorghum, millet, wheat, and cotton.

ISSUE	STATUS
Biotechnology Policy status and year	Draft National Biosafety Framework, 2006 (Developed under the UNEP- GEF Biosafety Project)
Biosafety Bill or Law and Year	National Biosafety Law 2010
Implementing Regulations	In accordance to the Cartagena Protocol on Biosafety and pursuant to the National Biosafety Law, 2010
GM Crops Approved and Years	Approval for environmental release of one transgenic Bt cotton variety (Seeni 1) containing Cry 1A gene developed by Chinese Academy of Agricultural Science, 2012  Approval for environmental release of two Bt cotton hybrids expressing Cry 1Ac gene (Event 1) for commercial planting developed by JK Agri Genetics, India, 2015

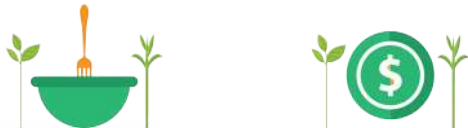


GM crops under CFT as approved by National Biosafety Committee or Authority	Insect resistant (Bt) cotton
Any Trade in GM products?	The country allows imports GM food or feed upon authorization.
Access to Food aid with GM content?	The country has faced LLP/AP in the last 10 years
Main agricultural exports and destinations	Destination countries: Egypt, Ethiopia, Kenya, Uganda Products: Sorghum, gum Arabic, oilseeds, cotton
Main agricultural imports and countries sourced	Source countries: Egypt, Ethiopia, Kenya, Uganda Products: Wheat, sorghum, sugar
Key Biotech Challenges	Low public awareness, need for stewardship training and efforts for the adopting farmers



**POPULATION**

**17.7 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Livestock (Particularly Goats, Sheep, and Camels), Bananas, Sorghum, Maize, and Sesame Seeds.



# SOMALIA

Somalia has an estimated population of approximately 17.7 million people, encompassing a landmass of about 637,657 KM2. Arable land covers approximately 13% of its territory. The country's major agricultural produce includes livestock (particularly goats, sheep, and camels), bananas, sorghum, maize, and sesame seeds.

ISSUE	STATUS
Biotechnology Policy status and year	No policy on biosafety
Biosafety Bill or Law and Year	No law on biosafety
Implementing Regulations	None
GM Crops Approved and Years	None
GM crops under CFT as approved by National Biosafety Committee or Authority	None

Any Trade in GM products?	The country may import GM food or feed and there is no authorization process
Access to Food aid with GM content?	There's no monitoring in the country, and therefore no data concerning LLP/AP in the last 10 years
Main agricultural exports and destinations	Destination countries: Kenya, Ethiopia, Djibouti, Products: Oily seed, insect resins, citrus, processed cereals
Main agricultural imports and countries sourced	Source countries are Kenya, Ethiopia, Djibouti, Burundi, Rwanda, Eswatini Products: Rice, wheat flours, dried legumes, sorghum, maize, tea
Key Biotech Challenges	Low human and infrastructural capacity, lack of enabling legislature, and lack of financial investments





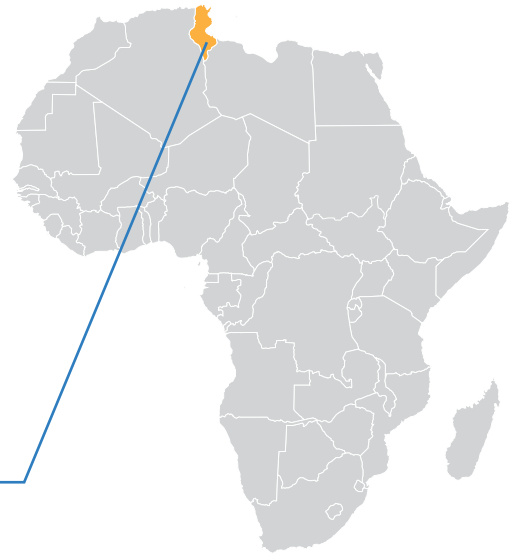
**POPULATION**

**12.3 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Olives, Grains (Such as Wheat and Barley), Citrus Fruits, and Dates.



# TUNISIA

Tunisia has a population of approximately 12.3 million people and occupies a landmass of about 163,610 KM2. The country's arable land covers around 19% of its territory. Tunisia's major agricultural produce includes olives, grains (such as wheat and barley), citrus fruits, and dates.

ISSUE	STATUS
Biotechnology Policy status and year	No Biosafety Law or Regulations
Biosafety Bill or Law and Year	National Strategy and Action Plan on biosafety
Implementing Regulations	None
GM Crops Approved and Years	None
GM crops under CFT as approved by National Biosafety Committee or Authority	None



Any Trade in GM products?	The country does not import any GM food or feed (banned).
Access to Food aid with GM content?	None
Main agricultural exports and destinations	Destination countries: Algeria, Libya, Morocco, Egypt Products: Olive oil, citrus fruits
Main agricultural imports and countries sourced	Source countries: Algeria, Libya, Morocco, Egypt Crops: Wheat, barley, sugar
Key Biotech Challenges	Lack of political goodwill, low public awareness, lack of enabling policies, lack of financial investments





**POPULATION**

**51.6 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Coffee, Tea, Cotton, Maize, and Bananas.



# UGANDA

Uganda has a population of approximately 51.6 million people and a landmass of around 241,551 KM2, with an arable land covering approximately 25% of its territory. The country's major agricultural produce includes coffee, tea, cotton, maize, and bananas.

ISSUE	STATUS
Biotechnology Policy status and year	National Biotechnology and Biosafety Policy 2008
Biosafety Bill or Law and Year	No biosafety Act yet, but National Environment Act 2019 acts in place
Implementing Regulations	The National Environment Act 2019 provides for prescription of guidelines and regulations for management of genetically modified organisms <ul style="list-style-type: none"> <li>Guidelines for contained use</li> <li>Guidelines for Food Safety Assessment</li> <li>Draft Standard Operating Procedure (SOP) for GMO imports and handling</li> </ul>
GM Crops Approved and Years	None

GM crops under CFT as approved by National Biosafety Committee or Authority	<ul style="list-style-type: none"> <li>• Parasitic nematode resistant bananas</li> <li>• Biofortified (pro-Vitamin A) bananas</li> <li>• Cassava Brown Streak Disease (CBSD) resistant cassava demonstration CFTs</li> <li>• Late blight disease resistant potato</li> <li>• GM mosquitoes for Malaria Control</li> <li>• Recombinant vaccine trials for anti-tick vaccine</li> </ul>
Any Trade in GM products?	The country may allow imports of GM food or feed upon authorization
Access to Food aid with GM content?	None
Main agricultural exports and destinations	Destination countries: Kenya, Tanzania, Rwanda, South Sudan Products: Coffee, tea, fruits
Main agricultural imports and countries sourced	Source countries: Kenya, Tanzania, Rwanda, South Sudan Products: Maize, wheat, sugar
Key Biotech Challenges	Low public awareness, negative perception against the technology, lack of enabling legislature, lack of political good will and low financial investments





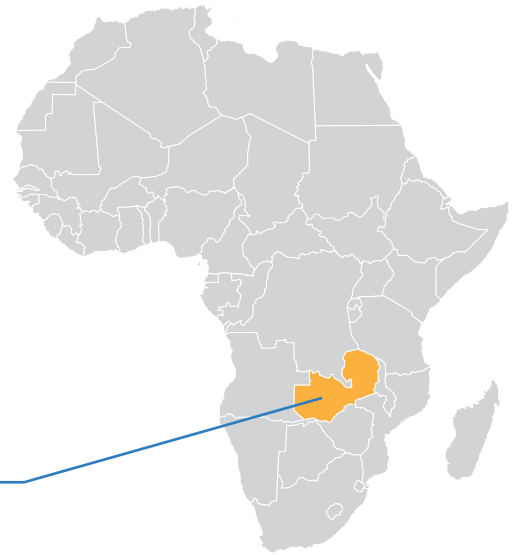
**POPULATION**

**20.1 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Maize, Sugarcane, Soybeans,  
and Wheat



# ZAMBIA

Zambia has a population of approximately 20.1 million people with a landmass of about 752,614 KM<sup>2</sup>. The arable land covers approximately 8.7% of its territory. The country's major agricultural produce includes maize, sugarcane, soybeans, and wheat

ISSUE	STATUS
Biotechnology Policy status and year	National Biotechnology and Biosafety Policy, 2003
Biosafety Bill or Law and Year	The Biosafety Act, 2007
Implementing Regulations	Statutory instrument No. 42 of 2010; The Biosafety (Genetically Modified Organisms for Food, Feed and Processing), Regulations, 2010



GM Crops Approved and Years	None
GM crops under CFT as approved by National Biosafety Committee or Authority	None
Any Trade in GM products?	The country allows imports of GM food or feed upon authorization, for example: -Approval of the import and/or use of the LMO(s), for food and feed without conditions
Access to Food aid with GM content?	<ul style="list-style-type: none"> <li>• No LLP policy</li> <li>• Labelling required</li> </ul>
Main Agricultural exports and destinations	Main destination countries: South Africa, Zimbabwe, Malawi, Tanzania, Kenya Main products: Tobacco, maize, sugar
Main Agricultural imports and countries sourced	Source countries: South Africa, Zimbabwe, Malawi, Tanzania Products: Maize, wheat, sugar
Key Biotech Challenges	Low human and infrastructural capacity, weak enabling policies, low public awareness, negative perception against the technology and lack of financial investments



**POPULATION**

**15.6 MILLION**



**MAJOR AGRICULTURAL PRODUCE**

Tobacco, Maize, Cotton, and Wheat



# ZIMBABWE

Zimbabwe has a population of approximately 15.6 million people and occupies a landmass of about 390,757 KM<sup>2</sup>. The arable land covers approximately 10.5% of its territory. The country's major agricultural produce includes tobacco, maize, cotton, and wheat.

ISSUE	STATUS
Biotechnology Policy status and year	A signatory to the Cartagena protocol since 2005, no stand alone policy
Biosafety Bill or Law and Year	National Biotechnology Authority Act of 2006 [Cap14:31]
Implementing Regulations	<p>Statutory Instrument 157 of 2018.</p> <p>Procedures for assesment of a clinical trial release or general release of a human vaccine</p> <p>Procedures for assesment of a trial release or general release of biofertilizers</p> <p>National Biotechnology Authority (Food, Feed, Food and Feed Additives and Seeds) (Import, Export, Transit) regulations, 2018</p> <p>National Biotechnology Authority (Genetically Modified Food and Feed) (Labelling) Regulations, 2018.</p>

GM Crops Approved and Years	None
GM crops under CFT as approved by National Biosafety Committee or Authority	None
Any Trade in GM products?	<p>The country may allow the importation of GMO grain in times of severe drought, when non- GMO grain cannot be secured for food,. Such imports are transported and milled under the supervision of the National Biotechnology Authority (NBA)</p> <p>Due to a continued maize production below the consumption demand, the country lifted restrictions on the importation of GM maize late in 2019)</p>
Access to Food aid with GM content?	<p>Yes. The country has faced LLP/AP situations in the last 10 years</p> <ul style="list-style-type: none"> <li>• Labelling is required above 1%</li> <li>• No LLP policy</li> </ul>
Main Agricultural exports and destinations	<p>Destination countries: South Africa, Zambia, Botswana, Malawi</p> <p>Products: Tobacco, maize, cotton</p>
Main Agricultural imports and countries sourced	<p>Source countries: South Africa, Zambia, Botswana, Malawi</p> <p>Products: Maize, wheat, sugar</p>
Key Biotech Challenges	<p>Low human and infrastructural capacity, low public awareness, weak enabling policies and lack of financial investments</p>



# CONCLUSION AND RECOMMENDATIONS

Biotechnology presents significant opportunities for advancing agriculture across African regional economic blocks such as COMESA. Genetically modified (GM) products, may be harnessed countries can enhance resilience, increase yields, and effectively tackle food security challenges amidst changing climatic conditions and limited arable land. GM crops offer the potential to develop varieties that are drought-resistant, pest-resistant, and nutrient-enriched, thereby improving agricultural productivity and ensuring food availability for growing populations. Furthermore, adoption of GM crops aligns with global agricultural standards, opening doors for increased trade opportunities and reducing dependency on food imports during times of scarcity. Emphasizing biotechnological innovation can also pave the way for sustainable agricultural practices that conserve resources and mitigate environmental impacts, promoting long-term agricultural sustainability and economic growth.

Despite the potential benefits, several challenges hinder the widespread adoption of GM-based commodities across COMESA. A primary obstacle is the persistently negative public perception and low awareness regarding biotechnology. Misconceptions about the safety and environmental impact of GM products often lead to resistance from consumers, civil society organizations, and policymakers. Weak or outdated biosafety policies and regulatory frameworks further complicate the approval process for GM products, delaying their introduction into markets. Insufficient human and infrastructural capacity in biosafety management, research, and agricultural extension services also pose significant barriers. These challenges collectively impede the timely realization of the agricultural and economic benefits associated with GM technology, hindering progress towards food security and sustainable development goals.

To overcome these challenges and capitalize on the opportunities presented by biotechnology, African countries must adopt a multifaceted approach. First and foremost, there is a critical need to enhance public engagement and education on biotechnology. Transparent communication campaigns stand to effectively address misconceptions and build public trust in the safety and benefits of GM products. Simultaneously, governments should prioritize the review and updating of biosafety laws and regulations to streamline approval processes while ensuring rigorous safety assessments aligned with international standards. Investing in capacity building is essential, including training programs for biosafety officials, researchers, and agricultural extension workers. Strengthening regional collaboration and harmonization of biosafety regulations can facilitate intracontinental trade of GM products and enhance regional food security. Moreover, sustained investment in biotechnological research and innovation is crucial to developing locally adapted GM products tailored to regional agricultural challenges and consumer preferences.



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