



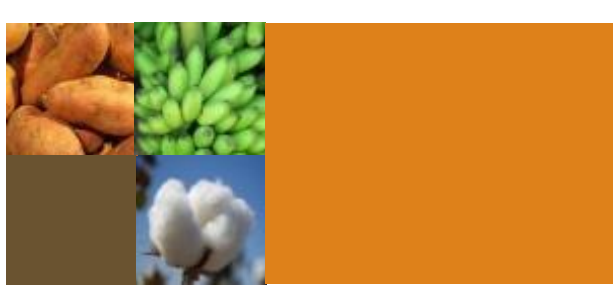
# ABNE in Africa

## Towards Building Functional Biosafety Systems in Africa



# African Biosafety Network of Expertise (ABNE)

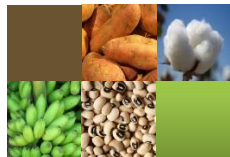
2019



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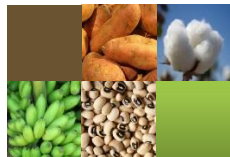
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## Message of ABNE Director

### Dear friends and partners

As you know, ABNE is a project of the African Union Development Agency NEPAD (AUDA-NEPAD), established to support African Member states in their efforts to build biosafety regulatory systems to harness science, technology and innovations opportunities for agricultural and economic development of the continent. ABNE was formally established in the year 2010 and has been running for close to 10 years now. A first 5-year Phase of the project ended in December, 2015 and the second Phase is being implemented since January 2016 and will end in December 2019.

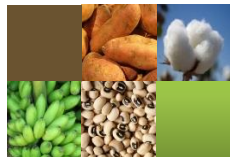
The past year started off with the approval of the work plan by the ABNE Technical Advisory Committee and the AUDA-NEPAD CEO. 2018 witnessed substantial progress in the biosafety sector in Africa at national and continental levels. This progress was made possible thanks to the concerted efforts of the management team, the Technical Advisory Committee as well as the technical team.

2018 was a landmark for technology and innovation in Africa, especially with the adoption and subsequent launch of the reports of the African Union High Level Panel on Emerging Technologies (APET). This strong stand of African leaders for Science and technology is clearly serving the cause of the continent as it already helped African delegates speak with one voice and come up with a common position during the Convention on Biodiversity negotiations in November 2018, in Egypt.

With the support of AUDA-NEPAD ABNE and partners, significant progress was made in countries like eSwatini, Ethiopia and Nigeria with the commercial release of Bt cotton. Ethiopia, Kenya, Nigeria and Mozambique are also making significant progress towards the the cultivation of GM food crops, especially maize.

In the year 2019, last year of the second phase of the project, ABNE will continue supporting these countries to help them consolidate their achievements but will also provide support to the other African countries covered by the present project and the other emerging countries that have officially called upon our expertise.

**Dr. Jeremy T. Ouedraogo**



## I: Capacity building Support in Africa in 2018

The African Biosafety Network of Expertise (ABNE) is an Africa-based, Africa-led initiative established by the NEPAD Agency since 2010. It is a continent-wide biosafety service network that was conceptualized under the NEPAD Agency's Africa's Science and Technology Consolidated Plan of Action (CPA). It has buy-in from the African governments and was officially approved in 2008 by the African Ministerial Council on Science and Technology (AMCOST).

NEPAD Agency ABNE's overall goal is to support advancement of science and technology for agricultural development in Africa through the establishment of functional biosafety systems in African countries. ABNE offers biosafety capacity building services aimed at empowering African regulators with science-based information. ABNE services are targeted towards members of National Biosafety Committees (NBCs), Institutional Biosafety Committees (IBCs), and Plant Quarantine Officers (PQs) and their support structures, as well as biosafety policy and decision makers so that they can make informed decisions on biotechnology products.



Training on IBC guidelines and requirements in May, 2018, in Bobo Dioulasso, Burkina Faso



## ABNE in Africa

Building Functional Biosafety Systems in Africa



In the capacity building sector, ABNE offer services in four primary formats depending on the technical needs of biosafety stakeholders: training workshops and seminars, seeing-is-believing study tours, high level advocacy, short courses.

In 2018, NEPAD Agency ABNE facilitated 18 major capacity building activities for 596 African biosafety stakeholders. From February 26 to March 7, 2018, ABNE particularly organized a biosafety study tour to India, in partnership with Michigan State University, mainly for parliamentarians and government officials from Nigeria, Senegal and Zambia. ABNE and MSU also organized study tour to the US in June 2018, for Nigeria high officials.

NEPAD Agency ABNE successfully implemented high level advocacy missions to a number of African countries, especially in Ethiopia, Malawi and Mozambique.

In partnership with the National Biosafety management Agency of Nigeria and the Godfrey Okoye University (GOUUni) of Enugu, ABNE implemented the first biosafety short course ever organized in Nigeria. 40 participants took parts in this short course and GOUUni pledge to make this short course sustainable for the benefit of Nigeria and the whole continent.

## II: Facilitating Expert Resource Networks and Contributing to International Meetings and fora

### Expert Resource Networks

In the past 2 years, NEPAD Agency ABNE has engaged in efforts to mobilize the African Experts through networking to support decision makers in their critical role to make informed decisions on STI opportunities for the development of the continent. Four key resource networks are now functioning: Food Safety Resource Network, The Socio-Economic Resource Network, The African Biosafety Lawyers Network, and The African Biosafety Communication Network. Through each of the networks, the ABNE team is capitalizing experts and making human resources available for the needs of African countries at national and regional levels. The ABNE Program Officers are developing general guidelines for the operation and expansion of the networks in Africa.

The standard-bearer of ABNE resource network is certainly the **African Biosafety Lawyers' Network**, stretching across 18 countries within Sub-Saharan Africa. The members have been introduced to Basic aspect of Biotechnology and they received considerable training on



Biosafety Aspect of Agricultural Biotechnology. In 2018, the network organized two capacity building workshops for Ethiopian Lawyers in Addis Ababa and for other Lawyers in Eastern Africa in Nairobi. The members were also engaged on virtual conversations about Biotechnology and Biosafety Developments on the continent and around the world.

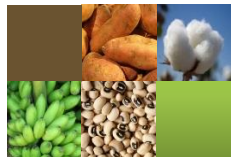


These lawyers are readily available to take on tasks that may arise within their national jurisdictions.

The **African Biosafety Communication Network**, launched in July 2017 is functioning and information sharing with media stakeholders is ongoing especially through group emailing, a WhatsApp platform, Facebook and Youtube. The capacity of media practitioners was strengthened in Cameroon and a national network of biosafety communication network was launched in this country in December 2017.

The members of **Food Safety Resource Network** are also engaged on virtual conversations. Current studies and other informational resources were shared with members through the Network's e-mail ListServe.

This year, Members of **The Socio-Economic Resource Network** were updated on guidance proposed by the Ad-Hoc Technical Expert Group on socio-economic considerations in biosafety decision-making. This initiative contribute to improve their understanding of the complexity in developing conceptual clarity on socio-economic considerations in biosafety decision-making.



## COP-MOP and OECD

AU-NEPAD Agency ABNE, within African Union mandate, developed online engagement with members of the African Group of Negotiators (AGN) on the agenda issues of The Conference of the Parties serving as the meeting of the Parties to the Protocol on biosafety (**COP-MOP**).

In collaboration with the AUC, an online portal for coordination was developed and piloted. The portal was to help the coordination of the AGN through an online communication system. Features of the system included users being able to post, edit and comment on documents and participate in a discussion forum. The system was successfully piloted and was made available to all negotiators.

In the preparation of the COP-MOP in Egypt, the AGN members who attended the meetings of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA/SBI) in July 2018 received briefing notes and daily updates on technical and administrative matters. Daily meetings were attended by 44 delegates from 20 AU member states.

43 biosafety regulators and policy makers from 31 AU member states also attended a pre-MOP 9 meeting in September 2018 and benefitted from a 2-day training on negotiation skills and techniques.

With respect to the Organisation for Economic Co-operation and Development (**OECD**), NEPAD-ABNE attended the 2017 session of OECD Harmonization of Regulatory Oversight in Biotechnology (HROB) and the OECD working group for the Safety of Novel Foods and Feeds, in June 2018. In addition, POs participated in the OECD Conference on Genome Editing: Applications in Agriculture – Implications for Health, Environment and Regulation which took place at the OECD Conference Center. The two OECD working groups were informed about NEPAD/ABNE activities and achievements through a written statement submitted to the OECD secretariat prior to the meetings and oral presentations during the meetings.

## III: Progress in regional harmonized biosafety frameworks

The draft Harmonised Biosafety Regulations that has been under development for the last 10 years by the ECOWAs and WAEMU Commissions jointly with the CILSS Executive Secretariat is now reaching its final step of adoption through the ECOWAS structures.





In 2017, NEPAD Agency ABNE provided support and technical assistance to the ECOWAS commission for the review of latest version of the draft Regulations. Substantive modifications were proposed. In 2018 ABNE continued to improve the draft Regulations through technical meetings to ensure legal coherence of the text and alignment with new developments in the area of biosafety and biotechnology. In 2018 also, based on a request from the Heads of the biosafety institutions in the West African Region, NEPAD Agency ABNE provided support to conduct consultations aimed to establish a regional platform for emerging technologies which features in the African Union Structures.

The outcomes of ABNE interventions in 2018 resulted mainly in a thorough legal and technical analysis of the ECOWAS draft Regulations and also the development and adoption of a constitution establishing the West Africa Biosafety Regulators Forum. Outcomes of the technical and legal analysis served as basis for discussions at a last technical meeting in December, 2018.

NEPAD Agency ABNE will continue to engage with WAEMU and ECOWAS to improve partnership and cooperation through high level consultations, education and awareness creation on biosafety and to provide Secretariat support to the newly established West Africa Biosafety Regulators Forum

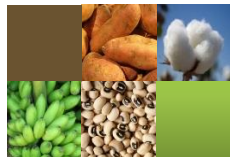
## IV: Biosafety status overview by country involved in the ABNE programme

### Burkina Faso

#### Biosafety Regulatory Framework

- Burkina Faso signed the Cartagena Protocol in May 2000 and ratified it in August 2003.
- 2004 : Establishment of a National Biosafety Committee
- 2004 : Adoption by the government of the Biosafety Guidelines for Biotechnology
- 2005 : Establishment of the National Biosafety Agency
- 2006 : Passage of the Biosafety Law
- December 2012 : Passage of a revised biosafety law after two years process
- December 2012 : Ratification of the Nagoya Kuala Lumpur Supplementary Protocol on Liability and Redress





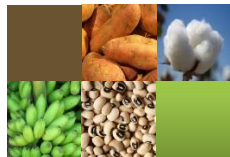
- 7 years of consecutive commercial cultivation of Bt cotton (Bollgard II) until late 2015. In 2016, due to a shorter cotton fibre length issue, the cotton consortium decided to suspend Bt cotton cultivation across the country and to go back to conventional until the fibre length issue is resolved.
- 2016: Application approved for lab testing of transgenic mosquito; CFT currently ongoing
- Burkina Faso is actively involved in the implementation of the West Africa biosafety governance platform

### Biotech R&D Status in Burkina Faso

Crop	Trait	Institutions involved	Status
Cowpea	Insect ( <i>Maruca vitrata</i> ) resistance (Bt)	INERA, AATF	MLT
Non crop organisms : Transgenic mosquitoes	Reduce malaria vector population ( <i>Anopheles gambiae</i> )	IRSS, Target Malaria	Small scale release permit

### Summary of ABNE capacity building activities for Burkina Faso (2009 – 2018)

Activity	Venue and Date	Number of stakeholders empowered
Training workshop on Agricultural Biotechnology	Senegal, July 2009	1
ABNE Regulators and Scientists Forum	Burkina Faso, April 2010	60
In-country workshop on Liability and Redress (L&R) workshop for Deputies, senior government officials, scientists and other stakeholders	Burkina Faso, July 2010	30
COP MO5 on Liability and Redress preparatory meeting	Kenya, July 2010	1
Study tour, South Africa	November 2010	2
West Africa regional training workshop on coexistence	Burkina Faso, November 2010	60
E-Biosafety Programme	Italy and Burkina Faso, July 2011	1
Internship	South Africa, November 2010	1
Science Technology Communication short course	MSU – USA, August 2010 2011	2
Agricultural Biotechnology short course	MSU – USA, September 2011	2

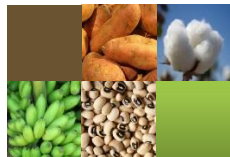


# ABNE in Africa

## Building Functional Biosafety Systems in Africa



International meeting (ABIC Conference)	Egypt, 2011	1
BCH training, Tunisia	November 2011	1
Biotechnology and Biosafety Internship and Study Tour Programme for African Regulators	South Africa, May 2012	1
Environmental Biosafety short course,	MSU – USA, August 2012	1
Training of Trainers (ToT) Programme	MSU – USA, July 2012	2
1-year Biosafety Certificate Programme (Long Term Training Programme)	MSU – USA, 2012-2013	1
Sensitization workshop for Members of Parliament in Burkina Parliamentarians	Burkina Faso, December 2011 and October 2012	143 (95 MPs + 48 officials)
Technical meeting on Burkina Faso revised draft Law	Burkina Faso, 2011 and 2012	56
Scientists and Regulators Forum	Tanzania, September 2012	2
Information sharing workshop for the preparation of the biosafety short course to be conducted in the Polytechnic University of Bobo-Dioulasso	Bobo-Dioulasso, May 2012	9
Training of Trainers (ToT) Programme	MSU – USA completed in May 2013	2
Biosafety for lawyers short course	MSU – USA, July-August, 2013	2
Sensitization workshop on the key issues contained in the ECOWAS–CILSS-WAEMU regional draft biosafety framework	Togo, October, 2013	2
Study tour to India	India, October, 2013	1
International training programme on biosafety for African regulators, policy, and decision makers	PUB, Bobo-Dioulasso, November 2013	4
Regulatory study tour	South Africa, June 4 – 11, 2014	4
Risk communication workshop,	Dakar, Senegal, August 2014	80
Training for Journalists and opinion leaders on biosafety	Ouagadougou, Bobo Dioulasso and Fada N'Gourma, August-September 2014	135
Participation in the COP MOP meeting	South Korea, September-October 2014	2
Training on Food Safety	MSU – USA, 2015	1
Training on Biosafety Fundamentals	Ghent University, Belgium, 2015	03
Training on Post Release Environmental Monitoring	Ouagadougou, 2015	13



Sensitization and awareness creation workshop	Ouagadougou, April 2016	60
Online Legal training (Master program)		1
Biosafety Lawyers training workshop,	Ouagadougou, October 2016	4
Inception training workshop for members of Institutional Biosafety Committee	Bobo-Dioulasso, May, 2018	32
<b>Total</b>		<b>728</b>

## Cameroon

### Biosafety Regulatory Framework

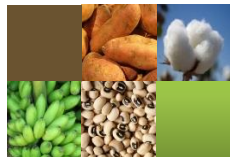
- Cameroon signed the Cartagena Protocol in February 2001 and ratified it in 2003.
- A national law laying down safety regulations governing modern biotechnology in Cameroon exists since April 2003 and implementing regulations were adopted in May 2007 covering various aspects such as transboundary movement, contained use, LMOs for direct use as food, transit, pharmaceuticals, handling, transport, packaging and identification, LMOs for direct use as feed, LMOs for processing.

### Biotech R&D Status in Cameroon

Crop	Trait	Status
Cotton	Insect resistance-Lepidopteran pests/Herbicide Resistant- Glyphosate	CFT

### Summary of ABNE capacity building activities for Cameroon (2016 – 2018)

Activity	Venue and Date	Number of stakeholders empowered
Consultative meeting with key stakeholders	Yaounde, May 2016	4
Training workshop for regulators and other stakeholders	Yaounde, October 2016	50



Training workshop on biosafety communications	Yaounde, November, 2018	89
<b>Total</b>		<b>143</b>

## Cote d'Ivoire

### Biosafety Regulatory Framework

- Côte d'Ivoire ratified the Cartagena Protocol in 2015, after a first attempt made many years ago which failed due to a technical mistake that occurred in the file submitted to the secretariat of the Protocol
- A biosafety law, *Loi No 2016-553 du 26 Juillet 2016 portant Regime de Biosecurite*, was enacted in July 2016
- NEPAD Agency ABNE is providing technical support to the national biosafety authority to develop implementing regulations.
- Cote d'Ivoire is actively involved in the implementation of the West Africa biosafety governance platform

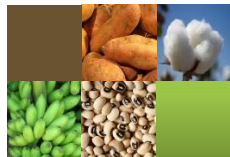
## eSwatini

### Biosafety Regulatory Framework

- The country ratified the Cartagena Protocol in January 2006.
- The competent national authority is eSwatini Environment Authority.
- A Biosafety Act exists since 2012 but has been revised to make it more workable.

### Biotech R&D status in eSwatini

Crop	Trait	Institutions involved	Status
Cotton	Insect resistance to Lepidopteran pests- cotton bollworm, Pink Bollworm and Spotted Bollworm	Swaziland Cotton Board, JK Agri Genetics	Commercial release approved



# ABNE in Africa

Building Functional Biosafety Systems in Africa



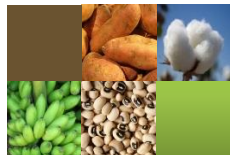
## Summary of ABNE capacity building activities for eSwatini (2016 –2018)

Activity	Venue and Date	Number of stakeholders empowered
Biosafety workshop for general stakeholders	eZulwini, July 2, 2015, Swaziland	43
Biosafety Short Course	Makerere University, July 13-15, 2015, Kampala Uganda.	1
Consultative Planning Meeting for Intercessional MOP for the African Group	Pretoria, December 2, 2015, South Africa	1
Consultation Planning meeting on Roadmap	eZulwini, December 4, 2015, Swaziland	5
India Study tour for the lawyers	India, January 2016	1
Study tour to South Africa (MP)	Pretoria, May 2016	
Technical guideline in the revision of the biosafety Act of 2012	Manzoni, July 2016	28
Biosafety Short course in MSU training 1 (Bongani)	MSU, July 2016	1
ANBAA meeting	Nairobi, 2016	1
Biosafety Short course in Innovation in agriculture research management, IPR technology transfer and product stewardship	Michigan State University (MSU), August 21 - September 1, 2016	1
Lawyers network training (Addis)	Ethiopia, September 2016	2
COP MOP 6 participation	Ghana, October 2016	1
COP MOP 6 participation	Mexico, December 2016	1
Workshop on Risk Analysis, and Regulatory Compliance Monitoring and Inspection for GMOs	Ezulwini, March 26 – 31, 2017	32
<b>TOTAL</b>		<b>118</b>

## Ethiopia

### Biosafety Regulatory Framework

- Ethiopia ratified the Cartagena Protocol in October 2013e
- Biosafety Proclamation and Biosafety Directives adopted since 2009.
- Revision of the Biosafety Directives started in 2016 and being finalized
- Revision of the Biosafety Directives started in 2016 and being finalized
- Biosafety organized as a directorate under the Ministry of Agriculture, Forest and Climate Change



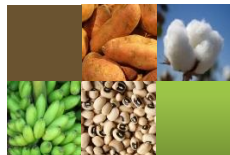
- A Director named and four new biosafety officers recruited
- Government has approved budget for the recruitment of more staff

### Biotech R&D status in Ethiopia

Crop	Trait	Institutions involved	Status
Cotton	Insect resistance to Lepidopteran pests- cotton bollworm, Pink Bollworm and Spotted Bollworm.	EIAR, JK Agri Genetics - India	Commercial release
Maize	WEMA, Drought tolerance + Lepidopetran Insect Resistance	EIAR, AATF	CFT

### Summary of ABNE capacity building activities for Ethiopia (2014 – 2018)

Type of intervention	Venue and date	Number of stakeholders empowered
Basics of Building Functional Biosafety System in Ethiopia” from	Ambassador Hotel, Addis Ababa, 8 - 10 October, 2014	60
International Short Course on Biosafety /Biotechnology for Lawyers	July 28 - August 2, 2013	1
Regulatory study tour to India	October 2013	1
Regulatory study tour	South Africa, June 4 – 11, 2014	1
Biosafety short course	Makerere University, Uganda, 14-17 July 2014	3
International Short Course on Environmental Biosafety of Agricultural Biotechnology	Michigan State University, August 3 – 8, 2014	1
International Short Course on Agricultural Biotechnology	Michigan State University, September 8 – 20, 2014 at MSU	2
Biosafety /Biotechnology Sensitization and Awareness Creation for Parliamentarians and Decision Makers	Harmony Hotel, Addis Ababa, 27 - 29 March 2015	70
African Biosafety Lawyers Roundtable Meeting	Ghana, 29 – 31 July 2015	1



Technical Support for the Revision of Biosafety Directives	Addis Ababa, 11 – 15 January 2016	12
Meeting to Consolidate & Edit the Revisions on the Biosafety Directives	Addis Ababa, 25 – 29 March 2016	5
Training Workshop on GM Crop CFT Regulatory Handling	Addis Ababa, 28-29 July 2016	17
Seeing is Believing: Biotechnology and Biosafety Study Tour to India	India, January 17 – 27, 2016	1
Research Management, Technology Transfer, and Commercialization	MSU, August 21 – Sept 1, 2016	4
A Pan-African Biosafety Lawyers training workshop	Addis Ababa, 26-28 September 2016	6
<b>Total</b>		<b>185</b>

## Ghana

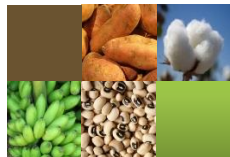
### Biosafety Regulatory Framework

- Ghana ratified the Cartagena Protocol in May 2003
- Ghana passed its Biosafety act in 2011
- 2015: inauguration of the Board of the National Biosafety Authority (NBA), appointment of a Chief Executive Office of the NBA, completion of an office complex to house the administrative staff of the NBA, creation of a cost centre for the Authority by the Ministry of Finance to enable it operate on its own budget, and allocation of some budget by the Sector Ministry.
- Currently, forms and other administrative documents have been developed, and appeals tribunal has been established.

### Biotech R&D status in Ghana

Crop	Trait	Institutions involved	Status
Cowpea	Insect resistant - Maruca Resistant	AATF, SARI	CFT





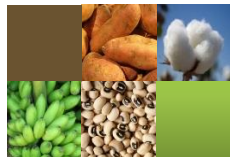
# ABNE in Africa

## Building Functional Biosafety Systems in Africa

Rice	Nitrogen-use, water-efficient and salt-tolerance	CRI, IITA	AATF,	CFT
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### Summary of ABNE capacity building activities for Ghana (2010 – 2018)

Activity	Venue and Date	Number of stakeholders empowered
Training workshop on biosafety decision-making	Ghana, March 2010	40
Environmental biosafety short course	Michigan State University – USA, July 2010 and August 2012	3
Food safety short course	Michigan State University – USA, August 2010	1
Internship	South Africa, November – December 2010 and May 2012	3
Study tour	South Africa, November – December 2010 and May 2012	4
Study tour	India, December 2010	1
Training workshop on administrative handling of biosafety applications and operating a functional biosafety secretariat	Ghana, November 2010	27
Sensitization workshop for Members of Parliament in Ghana on the Biosafety Bill	Ghana, 22 January 2011	40
Training to strengthen regulatory capacity for application review, decision making and compliance	Ghana, January, 2012	31
Training to strengthen biosafety communication capacity	Ghana, August 2012	25
Technical guidance for risk assessment review of applications for confined field trials for Maruca-resistant cowpea; protein-enriched sweet potato; and nitrogen-use efficiency, water-use efficiency and salt-tolerant rice (NEWEST) in Ghana	Ghana, August 2012	30
Preparatory meeting on multi-location trial of GE crops in Ghana; Case of Bt cotton	Ghana, April 2013	12
Technical support for application review of multi-location trials of Bt cotton in Ghana	Ghana, April 2013	27
Technical support for decision making on multi-locational trials in Ghana (case of Bt cotton)	Ghana, May 2013	15
Training to strengthen biosafety communication capacity	Ghana, May, 2013	13
Strengthening regulatory capacity of inspectors for inspection, monitoring and compliance of single cite/multi-locational trials in Ghana	Ghana, June 2013	30
Training to strengthen regulatory capacity of Institutional Biosafety Committees (IBCs) in Ghana	Ghana, July 2013	20
Biosafety for lawyers short course	Michigan State University – USA, July – August 2013	1

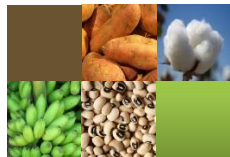


# ABNE in Africa

## Building Functional Biosafety Systems in Africa



Follow-up and technical support for the drafting of a biosafety communication strategy	Ghana, May 2013	13
Training of Trainers (ToT) programme	Michigan State University – USA, May 2013	2
Regulatory study tour	India, October, 2013	1
International training programme on biosafety for African regulators, policy, and decision makers	Polytechnic University of Bobo-Dioulasso – Burkina Faso, November 2013	3
Regional food/feed safety workshop	Accra, Ghana, 2014	1
Workshop to strengthen biosafety awareness of selected stakeholders in Accra, Ghana	Accra, Ghana, March 2014	26
Follow-up (refresher) training workshops on dossier evaluation/risk assessment and biosafety decision making on applications for field testing of GMOs	Accra, Ghana, May 2014	26
Workshop to strengthen biosafety awareness of selected stakeholders in the northern sector, Ghana	Kumasi, Ghana, August, 2014	26
Participation in Biotechnology Short-course in Michigan State University	Lansing, Michigan, 2014	1
High level tour of CFT sites in Tamale	Tamale, Ghana, October, 2014	3
Biosafety for lawyers short course	Ghana, February 2015	8
Training workshop on biosafety administration; application handling and biosafety decision-making, Socio-economic considerations	Ghana, May 2015	16
Food safety short course	MSU, USA, July 2015	1
Biosafety short-course in partnership with African Universities	University of Ghana, Accra, July, 2015	35
Biotechnology and Environmental biosafety short course	MSU, USA, August 2015	1
Biosafety awareness workshops for stakeholders (Farmers, Media, Editors, Policy makers, etc.)	Ada, Ghana, September, 2015	27
Biosafety for lawyers short course	Nairobi, Kenya, October 2015	4
Biosafety awareness workshops for stakeholders (Farmers, Media, Editors, Policy makers, etc.)	Accra, Ghana, November, 2015	47
Food safety short course	MSU, USA, July, 2016	2
Biotechnology and Environmental biosafety short course	MSU, USA, August, 2016	1
Biosafety for lawyers short course	Ouagadougou, October, 2016	3
Training workshop on biosafety administration; application handling and biosafety decision-making, Socio-economic considerations	Ghana, September 2016	15
Strengthening Quality Management Systems towards Increased Functionality of the Biosafety Framework in Ghana	Accra, September 4 – 5, 2017	15
Meeting on Biotechnology Development and Management in Ghana: The Case of Cotton	Accra, September 6, 2017	10



Review Meeting on Communication Strategy for Ghana	Accra, September 7, 2017	12
Strengthening Quality Management Systems towards Increased Functionality of the Biosafety Framework in Ghana	Accra, September 8, 2017	17
<b>TOTAL</b>		<b>639</b>

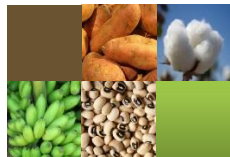
## Kenya

### Biosafety Regulatory Framework

- Kenya ratified the Protocol of Cartagena in January 2002.
- The country adopted its Biosafety Act in 2009 and its implementing regulations in 2011.
- Since 2013, the focus has shifted from commercialization of the GMOs product to the removal of the ban that was imposed the same year.
- Despite this situation, the National Biosafety Authority (NBA) claimed that the issue of the ban does not stop them from commercializing biotech crops in Kenya. True to this statement, two applications for commercial release of GM Maize (WEMA) and Bt cotton have been submitted for review to the NBA in 2015.

### Biotech R&D status in Kenya

Crop	Trait	Institutions involved	Status
Cotton (Mon 15985)	Resistance to lepidopteran pests-cotton bollworm, pink bollworm, tobacco budworm.	KALRO, Monsanto	Conditional approval for environmental release
Gypsophila paniculata	Pink coloration of petals	Danziger -Dan Flower Farm, Israel	Review for environmental release
Maize (Mon 87460)	Drought tolerance	AATF, CIMMYT, KALRO	CFT
Maize (Mon 810)	Resistant to Lepidoptera- Corn Borer	AATF, CIMMYT, KALRO	Conditional approval for environmental release
Maize (Mon 87460 x Mon 810)	Drought tolerance + insect resistance	AATF, CIMMYT, KALRO	CFT
Maize (Mon 87460)	Drought tolerance	AATF, CIMMYT, KALRO	CFT



# ABNE in Africa

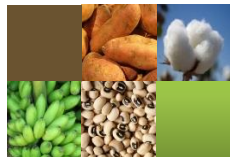
## Building Functional Biosafety Systems in Africa



Cassava	Brown streak virus disease Introgression into CMD tolerant background materials	KALRO, Danforth Plant Science Center	CFT
	Cassava Brown streak virus (CBSV) and African Cassava Mosaic Virus (ACMV)	Masinde Muliro University of Science and Technology	CFT
Banana	Banana bacterial - Xanthomonas Wilt (BXW) resistance	KALRO, IITA	CFT
Sorghum	Enhanced pro-Vit. A levels, Bio-available Zinc and Iron	Africa Harvest, Pioneer Hi-Bred, a Dupont Business and KALRO	CFT
Sweet potato	siRNA resistance to Sweet potato virus disease	KALRO, Danforth Plant Science Center	CFT
Cassava	Brown streak virus disease Introgression into CMD tolerant background materials	KALRO, Danforth Plant Science Center	CFT

### Summary of ABNE capacity building activities for Kenya

Activity	Venue and Date	Number of stakeholders empowered
Workshop on risk assessment, risk management, and decision making processes for Kenyan regulators	Kenya, July 2010, March 23 – 24, 2015	69
Training workshop on biosafety regulatory processes in agricultural biotechnology for the National Biosafety Authority	Kenya, April 2011	17
IBC training	Lukenya June 2015, Nairobi October 5 – 6 2015	40
Short courses in Agricultural Biotechnology; Environmental Biosafety; Food Safety; Science and Technology Communication; and Biosafety Training for Lawyers	Michigan State University – USA, July - September, 2011; July – September 2012; and July – August 2013, August 2015	14
Regulatory study tours	South Africa, November 2010; February 2012, USA February 23 – 26, 2015, Brazil March 14 – 21, 2015	16
Strengthening biosafety communication capacity of the Board of the National Biosafety Authority	Kenya, September 2012	22
Building decision making capacity for commercialization of genetically modified crops in Kenya	Mombasa, Kenya, November 2012	20



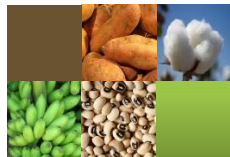
# ABNE in Africa

## Building Functional Biosafety Systems in Africa



International training programme on biosafety for African regulators, policy, and decision makers	Polytechnic University of Bobo-Dioulasso – Burkina Faso, November 2013	1
Masters e-biosafety course	Italy, January – December 2013	1
Regulatory study tour	India, October 2013	2
Biosafety internships	Pretoria, South Africa, November – December 2010; May 2012	2
International Meetings	Burkina Faso, South Africa and Sri Lanka, December 2010 and 2013	16
Training for African Lawyers in Biosafety	Cape Town, South Africa, March 2014; Ghana 2015, Kenya October 28-29, 2015	13
Biosafety study tour to South Africa	Pretoria, June 2014	1
Biosafety Short Course	Makerere University, Kampala Uganda 14 <sup>th</sup> -17 <sup>th</sup> July 2014	6
International Short Course on Environmental Biosafety of Agricultural Biotechnology	Michigan State University, August 3 – 8, 2014	4
Study Tour of Bt Cotton and Seed Industry in India- Organized by MSU	India	2
Board of Management of National Biosafety Authority	Sagana Gateway Lodge Kenya, March 21 to 23 March, 2016	15
Capacity Building of the Institutional Biosafety Authorities in Kenya	Maazoni Lodge, Nairobi Kenya June 29-30, 2016	21
Food Safety Short Course	Michigan State University	3
Capacity Building of Regulatory Agencies involved testing and Commercial release of improved seeds	Maazoni Lodge, June 27-28, 2016	22
High level consultative meeting between government executives and board of directors of the NBA, KEPHIS, KALRO and NEMA towards establishing a coordinated working approach on GMO matters	Nairobi, May 12, 2017	24
6 <sup>th</sup> Annual Biosafety Conference Pre-conference Courses	Nairobi, 3 -5 October, 2017	57
7 <sup>th</sup> Annual Biosafety Conference	Nairobi, August 16, 2018	66
Workshop on Sharing Experiences on NPT, NVR and GR on GMOs in Kenya	Nairobi, August 28 – 29, 2018	17
<b>TOTAL</b>		<b>471</b>

## Malawi



## Biosafety Regulatory Framework

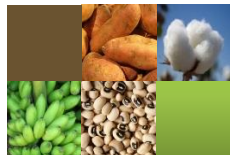
- Malawi signed the Cartagena Protocol in May 2000 and ratified it in February 2009.
- A biosafety act was adopted since 2002.
- A national Focal Point was established in December 2011.
- In 2013, a National Competent Authority was established and afterwards all the necessary regulations and guidelines were put in place.

## Biotech R&D status in Malawi

Crop	Trait	Institutions involved	Status
Cowpea	Insect resistance- Maruca Resistant	LUNAR, DARS, Monsanto, Quton	Approved for general release
Cotton	Resistance to lepidopteran pests-cotton bollworm, pink bollworm, tobacco budworm.	DARS, Queensland University of Technology	CFT
Banana	Bunchytop virus resistance	AATF, IIAM	CFT

## Summary of ABNE capacity building activities for Malawi (2010 – 2018)

Type of intervention	Venue and date	Number of Stakeholders empowered
Environmental biosafety short course	Michigan State University, 25– 30 July, 2010	1
Study tour	South Africa, 28 November – 4 December, 2010	2
Study tour	India/ Sri Lanka, 6– 18 December, 2010	1
Malawi Biotech/Biosafety Net-mapping in collaboration with IFPRI/PBS	Livingstonia Beach Hotel, Malawi 7-8 April, 2011	34
ABNE Scientist and Regulators' Forum	Arusha, Tanzania, September, 2012	1
1-year Biosafety Certificate Program	Michigan State University, 2012-2013	1

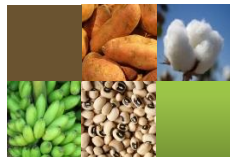


# ABNE in Africa

## Building Functional Biosafety Systems in Africa



Strengthening the Capacity of Inspectors in CFT Inspection, Monitoring, and Compliance	Pacific Hotel, Lilongwe, Malawi, 26 - 28 February, 2013	23
Bt Cotton Confined Field Trial Regulatory Progress Review and Training	Pacific Hotel, Lilongwe, Malawi, 9 – 11 July, 2013	15
Biosafety and Biotechnology for Lawyers	Michigan State University, July 28 - August 2, 2013	1
Training workshop on regulatory handling of GM crop multi-location trials	Pacific Hotel, Lilongwe, Malawi, 19-20 March, 2014	24
Regulatory study tour	South Africa, June 4 – 11, 2014	1
Biosafety short course	Makerere University, Uganda, 14-17 July, 2014	3
International Short Course on Environmental Biosafety of Agricultural Biotechnology	Michigan State University, August 3 – 8, 2014	1
International Short Course on Agricultural Biotechnology	Michigan State University, September 8 – 20, 2014	2
Biosafety short course	Makerere University, Uganda, 13-17 July, 2015	2
Training Workshop for Regulators on key issues of a Food Crop Confined Field Trial and Workshop for Enhancing Communication/ Interaction among Regulators and Agricultural Researchers in Malawi	Mpatsa Lodge, Salima, Malawi, March 17 - 19, 2015	38
Food Safety – Ensuring a safe food supply for the global community	MSU, July 17 – 23, 2016	1
Research Management, Technology Transfer, and Commercialization	MSU, August 21 – Sept 1, 2016	1
A Pan-African Biosafety Lawyers training workshop	Addis Ababa, 26-28, September 2016	1
Regulators and Scientists Forum on Biosafety of GMOs in Malawi	Lilongwe, 11 - 12 October 2016	24
Technical Backstopping for Stakeholders' Meeting Organized by Parliamentary Standing Committee for Agriculture to Support the Fast-tracking of Bt Cotton Variety Registration in Malawi	Lilongwe, 11 -12 September, 2018	15
Sensitization and Awareness Creation Workshop on Biosafety for Lawyers in Malawi	Lilongwe, November 6, 2018	21



<b>Total</b>		<b>213</b>
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# Mali

## Biosafety Regulatory Framework

- Mali signed the Cartagena Protocol in April 2001 and ratified it in August 2002.
- A biosafety law, *Loi n°08-042 relative à la sécurité en Biotechnologie* was enacted in 2008, with two implementing regulations adopted in 2010 .

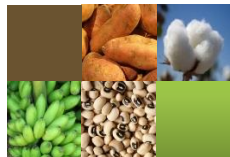
## Biotech R&D status in Mali

Crop	Trait	Institutions involved	Status
Non crop organisms : Transgenic mosquitoes	Reduce malaria vector population (Anopheles gambiae)	INRSP, Target Malaria	Contained research

## Summary of ABNE capacity building activities for Mali (2009 –2016)

Activity	Place and date	Number of stakeholders empowered
Biotech workshop in Dakar in July 2009	Dakar, July 2009	2
International meeting in Ouagadougou	Ouagadougou, April 2010	2
Training workshop in Bobo-Dioulasso, Burkina Faso	Bobo-Dioulasso, November 2010	6
Information sharing workshop and reflection on Malian Biosafety regime	Bamako, July 2011	60
Biosafety Short course	Michigan State University, August 2011	1





Farmers' day: farmers' experience sharing on agricultural biotechnology (jointly organized by Africa Harvest and ABNE	Bobo-Dioulasso, December 2011	5
ABNE biotechnology and Biosafety study tour program	Pretoria, May 2012	1
Study tour to laboratory and Insectaries for transgenic mosquitoes	Washington DC, May 2015	4
Training on risk assessment and pre-submission dialogue	Ouagadougou, July 2015	1
Training on Application Review and decision making for contained used of transgenic male sterile mosquitoes	Dakar, August 2016	11
Training on Problem Formulation on Gene Drive applied to mosquitoes	Accra, October 2016	1
Workshop on dossier review for GM mosquito trials application	Dakar, 8 – 11 august, 2016	10
<b>Total</b>		<b>104</b>

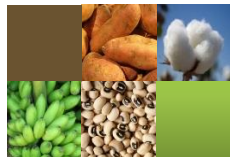
## Mozambique

### Biosafety Regulatory Framework

- Mozambique signed the Cartagena Protocol in May 2000 and ratified it in October 2002.
- Establishment of an inter-institutional working group (GIIBS - Grupo Inter-Institucional Sobre Bio-Segurança) in 2002 to serve as the National Biosafety Committee(NBC)
- Designation of the Ministry of Science and Technology to serve as the National Biosafety Authority,
- A decree on biosafety regulation was adopted in 2007.
- A revised decree was adopted in 2014
- The National Biosafety Authority (GIBBS) was officially constituted in December 2018

### Biotech R&D status in Mozambique

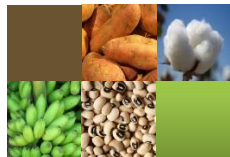




Crop	Trait	Institutions involved	Status
Maize	WEMA, Drought tolerance + Lepidopetran Insect Resistance	IIAM, AATF	CFT

### Summary of ABNE capacity building activities for Mozambique (2010 -2018)

Activity	Venue and date	Number of stakeholders empowered
International meeting in Ouagadougou	Ouagadougou, April 2010	1
Training workshop on CFTs	Maputo, March 2010	30
Environmental Biosafety Short Course	Michigan State University July 2010	3
Science and Technology communication and Short Course	Michigan State University, August 2010	1
Study tour	South Africa, November 2010 and India, December 2010; Brazil March 2015	4
Technical assistance workshop on Mozambique biosafety regulations	Maputo, May 2011	14
1-year Biosafety Certificate Program	Michigan State University, 2012- 2013	1
Regulatory study tour	South Africa, June 4 – 11, 2014	1
Biosafety short course	Makerere University, Uganda, 14-17 July 2014	2
International Short Course on Environmental Biosafety of Agricultural Biotechnology	Michigan State University, August 3 – 8, 2014	1
International Short Course on Agricultural Biotechnology	Michigan State University, September 8 – 20, 2014, September 2016	2
Training of GIIBS Members in Biosafety Communications and WEMA Maize Dossier Technical Backstopping	Maputo, 12 – 13 October, 2017	39



National Seminar on the Implementation of the Biosafety Regulation on the Management of Genetically Modified Organisms in Mozambique	Maputo, 11 – 12 July, 2018	45
<b>Total</b>		<b>144</b>

# Namibia

## Biosafety Regulatory Framework

- The country signed the Cartagena Protocol in May 2000 and ratified it in February 2005.
- The competent national authority is National Commission on Research, Science and Technology.
- A national biosafety Act exist since 2006, and provides for transboundary movement, contained use, LMOs for direct use as food, intentional introduction into the environment (AIA), transit, pharmaceuticals, handling, transport, packaging and identification, LMOs for direct use as feed, LMOs for processing.

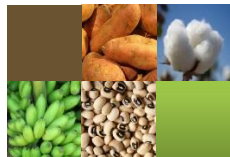
## Biotech R&D status in Namibia

None

## Summary of ABNE capacity building activities for Namibia (2015 -2018)

Activity	Venue and Date	Number of stakeholders empowered
Technical support for administrative handling and review of application for GM imports	Lusaka, 23 – 26 February, 2015	1
Mock-up Application Evaluation Training Workshop on GMOs and GM products	Windhoek, September 2017	20
Training Workshop on Food and Feed Safety Assessment and Environmental Risk Assessment	Windhoek, 10 – 12 April, 2018	21
<b>Total</b>		<b>42</b>





# Nigeria

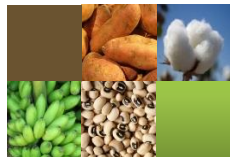
## Biosafety Regulatory Framework

- Nigeria signed the Cartagena Protocol in May 2000 and ratified it in July 2003.
- Biosafety law has been enacted in 2015
- Implementing measures have been developed and adopted
- National Biosafety Management Agency (NBMA) established and exercising its mandate since 2015
- DG of NBMA appointed and significant number of staff recruited and trained

## Biotech R&D status in Nigeria

Crop	Trait	Institutions involved	Status
Cotton (Mon 15985)	Resistance to lepidopteran pests-cotton bollworm, pink bollworm, tobacco budworm.	IAR/Zaria , Monsanto Agriculture Nigeria Ltd	Commercial release
Sorghum	Biofortified (bioavailability of Iron, Zinc, and increase in protein and vitamin A)	IAR/Zaria, NABDA, Africa Harvest, Pioneer Hi-Bred, a Dupont Business	CFT
Cowpea	Insect resistance- Maruca Resistant	IAR Zaria and NABDA, AATF	Commercial release
Cassava	Biofortified (increased iron content)	National Root Crops Research Institute/Umudike, DDPSC	CFT
	Mosaic virus resistance	National Root Crops Research Institute/Umudike, DDPSC	CFT
	Brown streak virus resistance	National Root Crops Research Institute/Umudike, DDPSC	CFT
	Biofortified (increased level of beta-carotene, provitamin A)	National Root Crops Research Institute/Umudike, DDPSC	CFT
Rice	Nitrogen-use, water-efficient and salt-tolerance	NCRI, Badeggi	CFT Permit granted
Maize NK 603 x Mon 810	Herbicide tolerance (Glyphosate) and Insect Resistant- Lepidopterans)	IAR/Zaria, Monsanto Agriculture Nigeria Ltd	Multi-locational trials

## Summary of ABNE capacity building activities in Nigeria

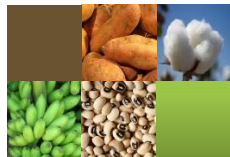


# ABNE in Africa

## Building Functional Biosafety Systems in Africa



Activity	Venue and Date	Number of stakeholders empowered
<b>1. Creating an enabling legal environment</b>		
Induction Training for NBMA Staff on Biosafety Administration towards Increased Functionality of the Biosafety System in Nigeria	Abuja, 11 – 12 September, 2017	187
National Biosafety Application Review Meeting of the NBC and NBTS For IITA CFT Of GM Cassava	Abuja, 13 – 15 September, 2017	25
Legal and Technical Review Meeting on Impending Lawsuit	Abuja, 5 October, 2017	9
Consultative Forum/Workshop With Seed/Grain Importers	Abuja, December 4, 2017	9
Review Meeting on Biosafety Application Forms for Import and Export Of Gm Food, Feed and for Processing Permit in Nigeria	Abuja, December 5, 2017	9
Technical support for review of biosafety applications	Nigeria, February and April, 2016	30
Technical support for the development and review of implementing regulations	Nigeria, April, 2013; May, 2013; August 2015	121
Training workshop on biosafety decision-making	Ghana, March, 2010	12
High level meeting on the importance and provisions of the Biosafety Bill	Nigeria, September 2013	28
Technical support for the review of guidelines on socio-economic considerations in biosafety	Nigeria, December 2013	28
Sensitization workshop for stakeholders in Nigeria on the importance and provisions of the Biosafety Bill (including legislators)	Nigeria, February 2011; September 10, 2013; March 2014	229
Biosafety Bill harmonization conference (for stakeholders including legislators)	Nigeria, March 2015	200
Farmers' conference on the importance of having a biosafety law	Nigeria, March 2015	161
<b>2. Building a critical mass of regulators with enhanced competencies</b>		
Biosafety Short course in Enugu	Enugu, July 16 – 18, 2018	63
Nigeria Biosafety Management Agency 3 <sup>rd</sup> National Biosafety Conference	Abuja, 14 September, 2017	298
National Biosafety Application Review Meeting of the NBC and NBTS For IITA CFT Of GM Cassava	Abuja, 13 – 15 September, 2017	25
International short course in environmental biosafety; International short course in agricultural biotechnology and biosafety	Michigan State University (USA), July 2010; July – August 2011; August 2013; August 2014; August 2015; August 2016	12
Science and technology communication short course	Michigan State University (USA) August, 2011	1
International short course on biosafety for lawyers	Michigan State University (USA), July – August, 2013; Ghana, February 2015	14

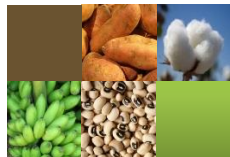


Food safety short course	Michigan State University (USA), July 2016	2
Technology transfer, IPR, technology commercialization and product stewardship program	Michigan State University (USA), August – Sept., 2016	1
International biosafety short course for African regulators, policy-, and decision-makers	Polytechnic University of Bobo-Dioulasso – Burkina Faso, November 2013; University of Ghana, Legon, July 2015	16
Masters e-biosafety course	Italy, January – December 2011 - 2014	2
Training workshop on CFT compliance and in- country study tour (including field visits to CFT sites)	Nigeria, September 2010	52
Training to strengthen regulatory capacity for CFTs and multi-location trial inspection, monitoring, compliance and biosafety communication	Nigeria, June 2012; July 2013	83
Training to strengthen regulatory capacity of Institutional Biosafety Committees	Nigeria, November 2012; April 2014	90
Regional food/feed safety assessment of GM crops	Ghana, March 2014	5
Regulatory study tours	South Africa, November – December 2010, May 2012; India, December 2010; India, October 2013; Brazil 2015	14
Biosafety internships for African regulators	South Africa, May 2012	1
1-year Biosafety Certificate Programme (Long Term Training Programme)	Michigan State University (USA), 2012 – 2013	1
<b>3. Enhancing biosafety communication and cooperation</b>		
Strengthening biosafety communication capacity of the Competent National Authority and stakeholder institutions	Nigeria, November 2012	52
Technical support for review of national biosafety communication strategy	Nigeria, December 2013	32
Sensitization seminar for farmers in Nigeria on biosafety issues	Nigeria, December 2013	34
Biosafety policy roundtable for stakeholder institutions in Nigeria	Nigeria, August 2016	42
<b>TOTAL</b>		<b>1888</b>

## Senegal

### Biosafety Regulatory Framework

- Senegal signed the Cartagena Protocol in October 2000 and ratified it in October 2003.



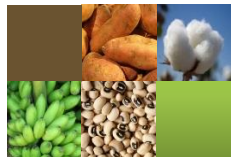
- A biosafety law was enacted in 2009, and two implementing decrees were adopted the same year
- In 2015 Senegal Government decided to revise the national biosafety law and ABNE provided support to start the revision with national consultants.
- The revised draft has been validated by stakeholders and is expected to be adopted by Parliament soon.

### Biotech R&D status in Senegal

None

### Summary of ABNE capacity building activities for Senegal (2009 – 2018)

Activity	Place and date	Number of stakeholders empowered
Biotech workshop in Dakar in July 2009	Dakar, July 2009	70
Sensitization workshop, Dakar, September 2013	Dakar, September 2013	50
Sensitization on the key issues contained in the ECOWAS –CILSS-WAEMU regional draft biosafety framework, October 17 – 18, 2013	Lomé, 17 – 18 October, 2013	1
Training on biosafety for African regulators, policy and decision makers	Bobo-Dioulasso Polytechnic University, November 3 – 9, 2013	2
Sensitisation of Parliamentarians and Members of the Socioeconomic and Environmental Council, Dakar, September 2015	Dakar, September 2015	40
Consultative workshop on the draft revised law	Dakar, August 2016	20
Training on risk assessment of gene drive applied to transgenic mosquitoes	Accra, October 2016	1
Workshop on the Applications of the Gene Drive Technology in Public Health Systems	Saly Portudal, October 10 – 11, 2017	31
<b>Total</b>		<b>215</b>



# Sudan

## Biosafety Regulatory Framework

- The country ratified the Cartagena Protocol in June 2005.
- The competent national authority is the National Biosafety Council.
- A Draft National Biosafety Framework was developed under the UNEP-GEF Biosafety Project and a National Biosafety Law exists since 2010.

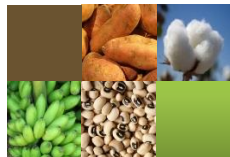
## Biotech R&D status in Sudan

Crop	Trait	Institutions involved	Status
Cotton	Insect Resistant	Biotechnology and Biosafety Research Center; Chinese-Aid Agricultural Technology Demonstration Center, Elfaw	Commercial release

## Summary of ABNE capacity building activities in the Sudan (2015 – 2018)

Type of intervention	Venue and date	Numbers of stakeholders empowered
A Biosafety in Agricultural Biotechnology Training Workshop for Regulators and other Stakeholders in the Sudan	Corinthia Hotel, Khartoum, Sudan, 2 - 4 June 2015	50
Biosafety short course	Makerere University, Uganda, 13-17 July 2015	4
International Short Course on Agricultural Biotechnology and Biosafety	Michigan State University, August 2 – 14, 2015	1
International Short Course on Agricultural Biotechnology and Biosafety	August 7 – 19, 2016	1
A Pan-African Biosafety Lawyers training workshop	Addis Ababa, 26-28 September 2016	1
Workshop for Regulators with a Focus on Environmental Risk Management of GM Crops	Khartoum, 12 – 13 July, 2017	27





<b>Total</b>		<b>84</b>
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## Tanzania

### Biosafety Regulatory Framework

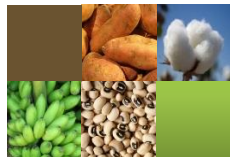
- Tanzania ratified the Cartagena Protocol in March 2003
- National environment act adopted in 2004
- National biosafety legal framework adopted in 2007
- Biosafety regulations were adopted in 2009
- National Biotechnology policy adopted in 2010
- Biosafety guidelines completed in 2012

### Biotech R&D status in Tanzania

Crop	Trait	Institutions involved	Status
Maize	Drought tolerant WEMA	AATF, COSTECH	CFT suspended due to admin issues

### Summary of ABNE Activities for Tanzania

Activity	Venue	Numbers of stakeholders empowered
Regulatory Study tour	India, December 2010	1
Collaboration meeting with PBS	Tanzania, August 2012	15
Study tours and internship	South Africa and Burkina Faso, February and November 2012	20
International Meetings	Various meetings	2
Collaboration Meeting with PBS	Tanzania, May 2013	27
Biosafety Short Course	Michigan State University-USA, August 2013	2
Biosafety training for African Lawyers	Cape Town, March 2014	5



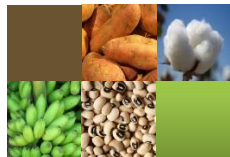
Biosafety Short Course	Makerere University, Kampala, Uganda 14 <sup>th</sup> -17 <sup>th</sup> July 2014	3
High Level Meetings with Government officials	Dar-Salam, Tanzania July 2014	3
Meeting with Journalists	Dar-Salam, Tanzania, July 2014	3
Participation in the COP-MOP7	Pyeongchang, South Korea 29 <sup>th</sup> - 4 <sup>th</sup> September/October 2014	1
Bisafety Needs Assessment Workshop 16-18 June 2015	Dar-es Salaam	20
Biosafety Short Course, Makerere University Kampala, July 2015	Makerere University	6
2 <sup>nd</sup> African Biosafety Lawyers Meeting 29-30 October 2015	Nairobi, Kenya	2
Training for Regulators and Inspectors	Kunduchi Beach Hotel and Resort, Dar salaam, Tanzania- 19 <sup>th</sup> – 20 <sup>th</sup> September 2016	23
Training for African Biosafety lawyers	Addis Ababa, Ethiopia- 26 <sup>th</sup> – 28 <sup>th</sup> September 2016	2
Workshop on Risk Analysis and Regulatory Compliance Monitoring and Inspection for GMOs	Dar es Salam, 19 – 20 September, 2017	32
CFT Management Training	Dodoma, 26 – 27 October, 2018	27
<b>Total</b>		<b>194</b>

## Togo

### Biosafety Regulatory Framework

- Togo signed the Cartagena Protocol in May 2000 and ratified it in July 2007.
- The country passed a biosafety law, in January 2009.
- Togo was also the fifth African country to sign the Nagoya Kuala Lumpur Supplementary Protocol on Liability and Redress in Septembers 2011.
- In 2015, a revised version of the law along with 04 implementing regulations were ready, and were deposited at the Secretariat of the Government for submission to the Parliament.
- An inter-ministerial ad hoc committee was established to oversee the progress of the revision process.

### R&D status



# ABNE in Africa

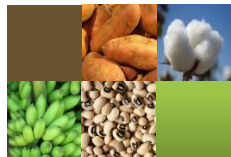
Building Functional Biosafety Systems in Africa



None

## Summary of biosafety and biotechnology related activities benefiting Togolese stakeholders from 2009 - 2016

Activity	Venue and Date	Numbers of stakeholders empowered
Capacity building workshop on biotechnology and biosafety for regulators and trainers	Senegal, July 2009	2
ABNE launch and Regulators-Scientists' Forum	Burkina Faso, April 2010	1
West Africa regional training workshop on coexistence	Burkina Faso, November 2010	5
Biosafety initiatives coordination meeting	Kenya, April 2010	1
Information sharing workshop and reflection on Togolese Biosafety regime	Togo, June 2011	55
Workshop on the Togo biosafety law No 2009-001	Togo, April 2012	20
Biosafety Summer Academy	Netherlands, June 2012	2
COP-MOP6 preparatory meeting	South Africa, August 2012	1
ABNE Scientist and Regulators' Forum	Tanzania, September 2012	1
Technical meeting with Togolese government officials	Togo, December 2012	3
Training on roles and responsibilities of IBCs	Togo, June 2013	15
Training on biotechnology and biosafety for lawyers	MSU, July – August, 2013	1
Technical meeting on the key issues contained in the ECOWAS –CILSS-WAEMU regional draft biosafety framework, October 17-18, 2013	Togo, October 2013	6
International training programme on biosafety for African regulators, policy, and decision makers	Polytechnic University of Bobo-Dioulasso – Burkina Faso, November 2013	4
Study tour to Bt cotton farms in Burkina Faso	Burkina Faso, December 2013	5
Stakeholders' consultative workshop to validate the Togo revised biosafety law	Lomé, April 28 – May 2, 2014	60
Technical meeting on the revision process	Lomé, March 2015	8
Workshop on biosafety communication for journalists in Togo	Lome, 14 – 15 June, 2016	25
Training on Food Safety / Michigan State University	Michigan State University	1
Lawyers training	Addis Ababa and Ouagadougou, 2016	2
Training workshop on Problem Formulation applied to Gene Drive technology	Accra, October 2016	1
<b>TOTAL</b>		<b>207</b>



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## Uganda

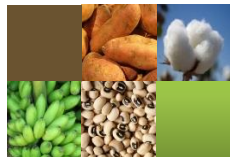
### Biosafety Regulatory Framework

- Uganda ratified the Cartagena Protocol in April 2004. Since then industry and biotechnology stakeholders have been waiting for a revision of the law to make it functional.
- National Agricultural research Organization (NARO) established in 2005
- Uganda National Council of Science and Technology (UNCST) established in 2008 with the mandate to formulate policies and strategies for science and technology in all fields of science and technology;
- National Biotechnology and Biosafety Policy adopted in 2008
- National Environmental Management Authority (NEMA) established with the responsibility of conducting environmental impact assessment (EIA) before any project likely to have an impact on the environment is undertaken
- Uganda Biotechnology and Biosafety Consortium (UBBC) launched in April 2011
- A new biosafety law was approved by the Parliament in 2017 but yet to be assented by the President.

### Biotech R&D status in Uganda

Crop	Trait	Institutions involved	Status
Cotton	Insect resistance + Herbicide tolerance	NARO, Monsanto	Multi-location trials completed
Cassava	Cassava mosaic disease virus	NARO, DDPSC	CFT completed
	Cassava mosaic disease virus, cassava brown streak disease virus resistance	NARO, DDPSC	Multi-locational trials
Banana	Banana bacterial - Xanthomonas Wilt (BXW) resistance	NARO, IITA	Multi-locational trials





# ABNE in Africa

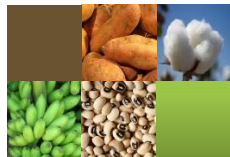
## Building Functional Biosafety Systems in Africa



	Banana parasitic nematode resistance	NARO, University of Leeds,	CFT
	Nutrition enhancement (Fe and Pro-Vitamin A)	NARO, Queensland University of Technology	Latest staggered planting done on-going
	Black sigatoka resistance	NARO, AATF	CFT completed
Sweet potato	Weevil resistance		GHT completed
Maize (Mon 87460 x Mon 810)	Drought tolerance + insect resistance	NARO, AATF, Monsanto, CIMMYT	Multi-locational trials
Maize (Mon 810)	Resistant to Lepidoptera- Corn Borer	NARO, AATF	CFT completed
Maize (Mon 87460)	Drought tolerance	NARO, AATF	CFT completed
Rice	Nitrogen Use Efficiency/Water Use Efficiency	NARO, AATF, Arcadia Biosciences	CFT
Soybean	Herbicide tolerance	Makerere University and MSU	GHT
Potato	Disease resistance	NARO, CIP	CFT

### Summary of ABNE capacity building activities for Uganda

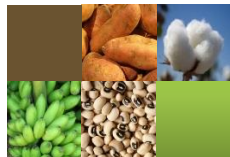
Activity	Venue and Date	Number of Stakeholders empowered
Workshops	Uganda December, 2012	30
Biosafety and Biotechnology Courses	Michigan State University-USA, July September, 2012	7
Study tours and internship	South Africa, February 2012	2
International Meeting	Various	4
1- year Biosafety certificate Programme (Long Term training programme)	Michigan State University- USA, 2012-2013	1
Biosafety short courses (environmental and food safety and lawyers training)	Michigan State University- USA, 2013	1
Regulatory study tour	South Africa, March, 2013	25



Regulatory study tour	India, October 2013	2
Biosafety training for African Lawyers	Cape Town South Africa, March, 2014	6
Biosafety short Course	College of Agriculture and Environmental Science, Makerere University, Kampala, Uganda, 14 <sup>th</sup> -17 <sup>th</sup> July 2014	25
Collaboration meeting and MOU with College of Agriculture and Environmental Science, Makerere University	College of Agriculture and Environmental Science, Makerere University, Kampala Uganda, July 2014 and October 2014	2
Support to the NBC January 28 <sup>th</sup> -29 <sup>th</sup> 2015	A two day residential meeting held at Rider Hotel, Mukono	22
Biosafety short Course for African Regulators	College of Agriculture and Environmental Science, Makerere University, Kampala, Uganda, 13 <sup>th</sup> -17 <sup>th</sup> July 2015	30
Enhancement of capacities of expert	A summer course at the Michigan State University for Technical Biosafety Experts in Food and Feed safety, 2015	1
Training of Biosafety lawyers for African Lawyers	NEPAD Agency- ABNE in collaboration with Michigan State University. The Meeting held in Accra, Ghana and the 2 <sup>nd</sup> held in Nairobi, Kenya, 2015	2
Training in Michigan State University for Food and Feed experts	Michigan State University organized training for food and feed experts on the continent August, 2016	2
Training for African Biosafety lawyers	NEPAD Agency-ABNE organised training for lawyers in Biosafety matters. The three day training took place in Addis Ababa, Ethiopia , 26 <sup>th</sup> – 28 <sup>th</sup> September 2016	3
<b>Total</b>		<b>165</b>

## Zambia

### Biosafety Regulatory Framework



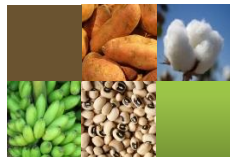
- The country ratified the Cartagena Protocol in April 2004.
- The competent national authority includes the Ministry of Tourism, Environment and Natural Resources and National Institute for Scientific and Industrial Research (NISIR).
- A national biotechnology and biosafety policy exists and biosafety act was adopted in 2007.
- In the capacity building sector, NEPAD Agency ABNE sponsored the participation of Zambian regulators in biosafety study tours and biosafety short courses. Several biosafety training workshops have also been organized in Lusaka since February 2015.

### R&D status

None

### Summary of ABNE capacity building activities for Zambia (2012 – 2018)

Activity	Venue and Date	Numbers Benefited
Regulatory study tour	South Africa, May 2012	1
Zambia Regulators Exchange Visit to the National Biosafety Authority of Kenya	Kenya, July 2012	11
International biosafety short course for African regulators, policy-, and decision-makers	Makerere University (Uganda), July 2015	3
Technical support for administrative handling and review of application for GM imports	Zambia, February 23 - 26, 2015	26
Technical support to Zambia for review of the Biosafety Law and development of Statutory Instrument	Zambia May 26 - 29, 2015; June 16 – 17, 2016	47
International short course in agricultural biotechnology and biosafety	Michigan State University (USA), August 2015	2
Lawyers' biosafety course	Ethiopia September 26 – 28, 2016	2
Stakeholder Consultative Meeting on the Biotechnology and the Biosafety Policy	Livingstone, 25 – 26 September, 2017	36
Biosafety Workshop	Lusaka, 5 – 8 December, 2018	39
<b>TOTAL</b>		<b>167</b>



## ABNE in Africa

Building Functional Biosafety Systems in Africa



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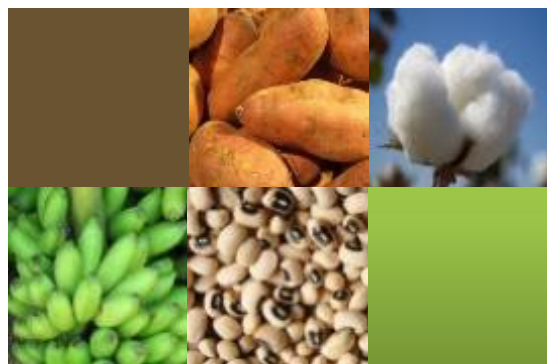
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# ABNE in Africa

Towards Building  
Functional Biosafety  
Systems in Africa