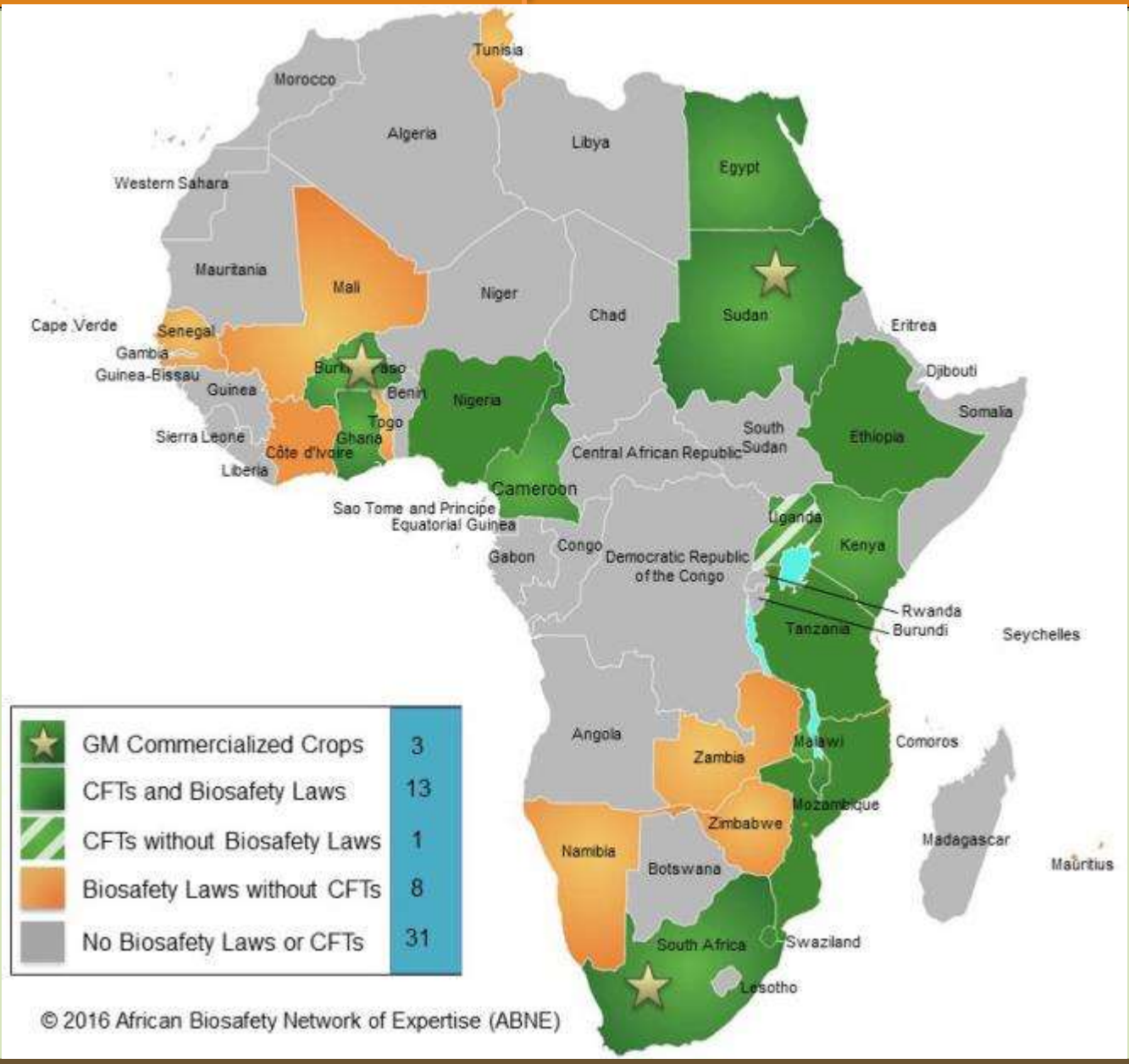
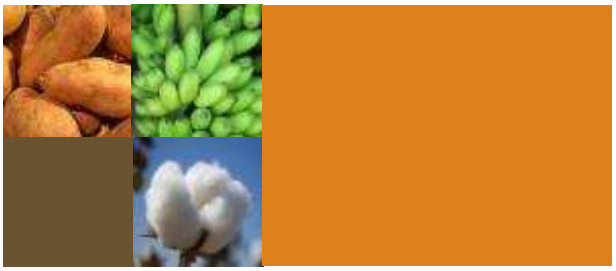
ABNE in Africa

Towards Building Functional Biosafety Systems in Africa



African Biosafety Network of Expertise (ABNE)

December 2016



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Message from NEPAD Agency ABNE Director

Partners and stakeholders in biosafety regulation and policy making in Africa, we are delighted to issue once more our 'ABNE in Africa' booklet for the year 2016 activities. 2016 marks the second year of ABNE new 5-year programme started in 2015.

Important changes have occurred at different levels that made 2016 very special at ABNE: I have been welcomed as the new Director, a new node was also opened in Dakar where is now located ABNE's main office and finally ABNE has successfully implemented most of its planned activities to support the development of workable biosafety frameworks across Africa.

In the past year, important milestones have been achieved in ABNE target countries. Among the results achieved in collaboration with our strategic partners, we can highlight the implementation of new workable legal frameworks in countries like Nigeria and Cote d'Ivoire, while other countries like Ethiopia, Swaziland, Uganda and Zambia are also in the process of adopting new functional regulations.

Interestingly, a big leap has also been made in the sector of biotechnology research and development and several countries including Ethiopia, Mozambique, Swaziland, Tanzania, have started CFTs of crops like cotton or maize in 2016.

ABNE leadership has been commended in the various countries for the technical support and the constant follow-up provided. I would like to seize this opportunities to express once more NEPAD Agency ABNE's gratitude to our partners and all the people in Africa and abroad we are working with, whose support is necessary to make a positive change in African countries, especially in the biotechnology and biosafety areas.

With best wishes to you all as we celebrate the festive season!

Dr. Jeremy Ouedraogo
Director, NEPAD Agency ABNE
November 2016

Burkina Faso

Developing a policy on biosafety and agricultural biotechnology to implement the political will

Despite the issue facing the country on Bt cotton, Burkina Faso keeps moving with agricultural and non-agricultural biotechnology applications thanks to a national biosafety systems that has reached a matured stage and now serves as a model for many West African countries.

Confined field trials of Bt maize is going on for the second consecutive year at various research stations. Furthermore, Burkina Faso again made history by approving for the first time in the continent an application for transgenic mosquitoes to be tested by the National Health Research Institute in Bobo-Dioulasso as part of the national strategy to halt malaria.

Learning from the experience in handling the issue with Bt cotton, the Biosafety Agency has decided to take the initial steps towards developing a clear policy on biosafety and biotechnology which will strengthen the political will to move forward with the biotechnology agenda. Such a policy is expected to be incorporated in all relevant sectorial ministry programs for implementation. Based on its mandate drawn from African Union and NEPAD Agency and the credibility gained in the country, ABNE has been requested to facilitate this process which will require an efficient policy dialogue.

Information sharing and stakeholder consultative meeting, Ouagadougou, April 2016

Insights on the cotton fibber issue in Burkina Faso

In 2016, after eight consecutive years of commercialization of Bt cotton, cotton companies in Burkina Faso decided to suspend the cultivation of the genetically improved cotton line while farmers still express their full satisfaction with the benefits gained from the insect resistance trait. The decision was taken after several rounds of negotiations between the national cotton board and Monsanto which is the owner of the Bt gene and the co-owner of the variety being cultivated. The rationale behind this decision centres on the length of the cotton fibre which was found shorter compared to what it was before the adoption of the genetically improved cotton. The communiqué that was issued by the cotton board on this matter states that before the adoption of Bt cotton, the majority (94%) of fibre sold by the cotton companies on the international market had an average length of 28.58 mm. Then the phenomenon was reversed with the large scale cultivation of Bt cotton. Now the major portion of the fibre sometimes measures less than 26.98 mm which was classified as short fibres. This resulted in economic and financial consequences including the loss of Burkina fibre label, of premium quality for about 20 CFA francs/kg of fibre, the loss of customer confidence, and poor sales of Burkinabe cotton at the international market. The overall shortfall was evaluated about 50 billion CFA francs over 5 years which the cotton companies requested Monsanto to be compensated for.

Despite this, the cotton companies clearly recognize that 'Under eight adoption cropping seasons, the record shows that genetically modified cotton has better control. of pests and fostered a good pest control in cotton" and that "Monsanto GM technology has allowed a better control of the targeted pests of cotton, as well as comfort in the work of cotton farmers. This confirms the rightness of the option taken in favour of the adoption of biotechnology" (communiqué of 20th April, 2016, by AICB).

Overall, the decision to suspend Bt cotton has had critical consequences including cotton farmers loosing benefits of reduced chemical sprayings which was most beneficial to their health; the country returning to even more environmentally threatening agricultural practices while the global trend is to fast track environment friendly systems, and finally the country leadership position threatened.

Status of modern biotechnology applications

Agricultural biotechnology

- Cotton: confined field trial of stacked insect resistant and herbicide tolerant cotton are going on at the INERA Research stations. Data that have been collected and preliminary conclusions show promising benefits including a fibre length longer than Bollgard II and its conventional counterpart.
- Cowpea: Confined field trials (CFT) for Bt cowpea has been experimented now for four years. Currently the Maruca resistant gene is being introgressed into commercial varieties.

- Maize is the second food crop after cowpea to be approved for field trials in Burkina Faso. CFTs of insect resistant maize (Bt maize) and a stacked insect resistant and herbicide resistant maize (Bt X RRF) are on-going.

Contained used of transgenic male sterile mosquito

Similarly to many other countries in sub-Saharan Africa, Burkina Faso pays the heavy burden of malaria which causes thousands deaths every year in the country. Dengue also has started appearing in the country, worsening the overall situation. Therefore, national health research scientists have decided to join the global efforts in exploring new tools to fight mosquitoes that are vectors to these diseases. It is actually believed that unless new approaches are used against mosquitoes, it will not be possible to eradicate their borne diseases. Together with Mali and Uganda, Burkina Faso forms the three pilot African countries partnering with the Target Malaria Project to conduct such experiment. Burkina Faso seems the most advanced with the containment facility completed and approved by the national biosafety agency.

Early this year, the biosafety agency granted an approval to the national health research institute (IRSS) to start contained experiments with transgenic mosquitoes. Importation of the transgenic mosquito eggs is expected before the end of the year.

NEPAD-AGENCY NSTHI, AMRH and ABNE conducted a consultative meeting on Transgenic Mosquito strategy, at the Burkina Faso National Health Research Institute (IRSS) and the ECOWAS /West African Health Organization (WAHO) IN Bobo-Dioulasso, October, 2016

Table 1 below summarises an updated status of biotech applications in Burkina Faso. Bio-fortified sorghum which was approved for greenhouse testing many years ago which is yet to be implemented has been removed from the list, as well as the Bt cotton the commercialization of which was suspended this year.

Table I: Status of agricultural biotechnology in Burkina Faso

Crop	Trait	Status
Cotton	Stacked : Insect resistance (Bollgard II) x Herbicide tolerance (RRF) :	CFT
Cowpea	Insect (Maruca vitrata) resistance (Bt)	4th year of CFT
Maize	Stacked : Insect resistance (Bollgard II) x Herbicide tolerance (RRF)	CFT : approval given in 2015
Non crop organisms : Transgenic mosquitoes	Reduce malaria vector population (Anopheles gambiae)	Application submitted in 2016

Regulatory capacity building efforts

Last year the Government approved a new status for the National Biosafety Agency (ANB) providing it with enough autonomy to operate independently. Consequently, ANB has put a priority on the empowerment of its technical staff in order to constitute the critical mass that is required to meet the new challenges.

In view of the new developments regarding the decision on Bt cotton, ANB also gave priority to sensitization efforts and policy development

Biosafety and biotechnology related activities carried out in 2016 can be summarized as follows:

1. **Information sharing and sensitization workshop for Members of the parliament and government officials.**

This was conducted in April 2016, in partnership with the national biosafety agency, the Agricultural Research Institute (INERA) and several other international partners. More than 60 stakeholders benefited. Outcomes included i) Government officials better informed on the fibre length issue, (ii) Improved communication over the fibre length issue; (iii) policy dialogue initiated

2. **High level advocacy and Preliminary consultation on the development of biosafety and biotechnology policy**

ABNE director conducted a number of high level policy advocacy actions to facilitate positive dialogue over the cotton issue. This involved the national scientific community and the cotton board stakeholders. Preliminary consultations were also conducted in conjunction with the national biosafety agency in order to lay down the initial steps towards the development of a national policy on biosafety and biotechnology.

3. **Consultations to strengthen Burkina Faso leadership on the regulatory aspects of the transgenic mosquitoes strategy**

Under the auspices of the NEPAD-Agency NSTIH and in partnership with African Medicine Regulatory Harmonization (AMRH), ABNE facilitated field visits and consultative meetings in Ouagadougou and Bobo-Dioulasso aimed at assessing the needs for strengthening the regulatory capacity on the transgenic mosquitoes.

ABNE also facilitated experience sharing using Burkina Faso expertise to train Malians' regulators, on risks assessment, application review and decision making for contained use of transgenic mosquitoes. The training workshop was conducted in Dakar, Senegal from August, 2016.

Table 2 Summary of ABNE capacity building activities for Burkina Faso Regulators and Stakeholders (July 2009 – December 2016)

Activity	Venue and date	Numbers benefited
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	2

	2010	
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	Michigan State University –USA, August 2010 2011	2
Agricultural Biotechnology short course	Michigan State University –USA, September 2011	2
International meeting (ABIC Conference)	Egypt	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	Michigan State University –USA, August 2012	1
Training of Trainers (ToT) Programme	Michigan State University –USA, July 2012	2
1-year Biosafety Certificate Programme (Long Term Training Programme)	Michigan State University –USA, 2012- 2013	1
Sensitization workshop for Members of Parliament in Burkina Parliamentarians	Burkina Faso, December 2011 and October 2012	143 (95 MPs + 48 representatives from ministries and institutions)
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	Burkina Faso, May 2012	9
Training of Trainers (ToT) Programme	Michigan State University –USA completed in May 2013	2
Biosafety for lawyers short course	Michigan State University –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	Polytechnic University of Bobo-Dioulasso – Burkina Faso, November 2013	4
Regulatory study tour	South Africa, June 4 – 11, 2014	4

Risk communication workshop	Dakar, August 2014	80
Training for Journalists and opinion leaders on biosafety issues (in collaboration with the American Embassy)	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	Michigan State University, 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
TOTAL		**696**

Areas of focus for future intervention in Burkina Faso

In view of the new developments on agricultural biotechnology in Burkina Faso, ABNE will focus its future interventions in the country towards the following objectives:

- Provide support for the development of policy on biosafety and biotechnology
- Focus on the ANB comparative advantage on the biosafety of transgenic mosquitoes and build the necessary capacity in this area.
- Continue to support ANB building a critical mass of trained agricultural biosafety experts
- Continue to create awareness and build knowledge,
- Improve public communication on the safety of biotechnology
- Facilitate biosafety experience sharing using Burkina Faso experts, especially within the francophone region.

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Cameroon

'Promising progress'

Cameroon signed the Cartagena Protocol in February 2001 and ratified it in September 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.

The Cameroon cotton company, Sodecoton, in partnership with Bayer Crop Science, has tested combined herbicide resistant and insect resistant cotton in confined field conditions for four years and is currently conducting multi-locational trials which are the last stage before application for environmental release can be approved. It is expected that commercialization could start in the next two years.

At the last COP-MOP meeting in Pyeongchang in 2014, South Korea, ABNE team met with Cameroonian regulators and the potential applicant to discuss the needs. Subsequently an official request was submitted to ABNE so that a tailored need-based intervention programme for Cameroon can start as soon as possible.

ABNE interventions in Cameroon

In May 2016, ABNE conducted a consultative visit to Cameroon for biosafety gap analysis and to explore areas of possible collaboration. This led to the identification of capacity gaps and the development of a roadmap to assist Cameroon to augment their biosafety regulatory system to make it more functional.

During this meeting, ABNE was very well received was given considerable pledge of political support for its capacity building activities in Cameroon.

The roadmap for strategic intervention in Cameroon had the following key components;

i. Augmenting functionality of the Biosafety Secretariat for biosafety administration and decision making
ii. Attaining a critical mass of regulators and scientists with adequate technical capacity building for risk assessment
iii. Enhancing capacity for biosafety communication and stakeholder cooperation
iv. Improving access to biosafety Information resources and support for issues management

In October 2016, ABNE commence the implementation of the roadmap developed during the consultative meeting by organizing a training workshop in Yaounde covering aspects that were identified as top priority interventions by the competent authority for biosafety in Cameroon. The five-day back-to-back training workshop focused on

i. administrative handling of biosafety regulatory packages and the review and interpretation of information in biosafety regulatory dossiers
ii. Sharing country examples and experiences from around the world in relation to best practices for biosafety administration and dossier review
iii. Working sessions involving a hands-on, page-by-page review of a sample dossier

The overall aim was to assist the country build the necessary capacity to aminisitratively process an application, technically review and make recommendation to decision makers and confidently make a decision regarding the safety or otherwise of a GMO for the environment and human health.

Photo of participants during the workshop

Steady and promising progress in Cameroon

Critical factors for informed and timely decision making on biosafety applications by national systems with limited experience include;

i. willingness of the political authority to openly declare support for the process and commit to its implementation
ii. the Competent National Authority (CNA) being empowered through technical support for enhanced competencies and functionality
iii. the CNA and other stakeholders who are involved in decision making being open to technical backstopping from appropriate local and international experts
iv. a clear gap analysis of the biosafety system and a plan of action to address identified gaps and opportunities for informed and timely decisions
v. existence of external technical and financial support to augment domestic resources

On all of these factors, Cameroon rated favourably, and it is our considered opinion that with the right support, an informed and timely decision would be made on any form of application, including that for general release, in due course.

Areas of focus for future intervention in Cameroon

ABNE plans to collaborate with the biosafety secretariat to review and revise the existing roadmap for strategic intervention in Cameroon, following some key observations that were made during the five-day workshop. The broad areas of intervention to be targeted will be based on the five broad thematic areas earlier identified and will include;

i. assisting to draft and/or revising key guidelines, SOPs, application forms, checklists and other quality management instruments that could help streamline biosafety administration in Cameroon
ii. assistance in the establishment and training of technical sub-committees that will provide scientific advice to the NBC for decision making support for outreach and communication to help sensitize key stakeholders particularly with focus on cotton.

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Cote d'Ivoire

Moving fast …..

In June 2015, the Government of Côte d'Ivoire ratified the Cartagena Protocol on Biosafety after the process was stalled for many years due to various reasons. The same year an international service provider was selected to assist the country develop a strategic plan for biotechnology and biosafety. The preliminary discussions that emerged from this process showed the determination of the Ivoirians to move forward and experience agricultural biotechnology by themselves, in spite of the recent activists' manipulative communication spreading from the neighbouring country Burkina Faso.

In July 2016, the Government enacted a biosafety law, the ***"Loi No 2016 – 553 du 26 juillet 2016 portant régime de biosécurité"*** to govern biosafety matters in the country. This is indeed a key milestone, increasing to 21 the number of African countries with biosafety laws.

NEPAD-ABNE, though was not associated in the process of developing the law, was immediately approached to assist develop implementing regulations and provide the initial training sessions on the basics of biosafety including roles and functions of biosafety institutions.

A quick appraisal shows a number of issues within the just enacted law, including the scope covering products thereof. However in response to their official request and considering the driving power of Côte d'Ivoire within the West Francophone community, ABNE will endeavour to value the effort and progress made by the country.

Mr Augustin Kone, representing Côte d'Ivoire at the African Group preparatory meeting, organized by NEPAD-ABNE, Accra, October 26 -17, 2016

Focus areas for ABNE future interventions

Based on the request recently submitted to ABNE, we will focus on

- providing technical assistance to develop implementing regulations
- providing initial training on biosafety standards
- providing training opportunity to key stakeholders

Prior to any engagement, ABNE plans to conduct a high level exploratory mission in Côte d'Ivoire aiming to assess the political intention and will support the enactment of the law which seems to have happened very fast.

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Ethiopia

In the year 2016, Ethiopia has continued making progress by planting Bt cotton multi-location trials and by strengthening its biosafety office at the Ministry of Environment, Forest and Climate Change (MEFCC). The country has employed 4 new biosafety officers and has also appointed a Director to lead its biosafety office at the MEFCC. Ethiopia started the year by embarking on the work of revising the Biosafety Directives to align them with the amended Biosafety Proclamation. ABNE coordinated partners such as ICGEB and PBS to provide expert comments on the draft Biosafety Directives, liaised with the actors on the ground to catalyse the revision of the Directives and also supported a workshop to incorporate the comments on the draft Biosafety Directives in January 2016. Following the initial working group meeting in January, ABNE supported the consolidation and editing of the Directives in March followed by its translation into the Amharic Language. The final revised Directives have been tabled for signing by the Minister of MEFCC.

Workshop participants during the Revision of the Biosafety of Directives (11 – 15 January 2016). The event primarily focused on validating and incorporating the comments provided by partners on the draft Biosafety Directives

Ethiopia secured Bt cotton seeds for testing from India and the Sudan and started its first CFT of Bt cotton multi-location trials in July 2017. The trials were planted at seven locations in the major cotton growing agro-ecologies of the country. MSU was instrumental in liaising with J.K. Agri-Genetics Ltd. to secure two hybrid Bt. cotton varieties from India.

ABNE Provided Technical Support for the Revision of Biosafety Directives (11 – 15 January 2016). The meeting abridged the seven Biosafety Directives into five merging Directives 3 and 6 into one (Risk management) and Directives 4 and 5 into another (Directive for Transport & Storage)

ABNE conducted training on CFT regulatory handling in July 2016. Considering the pace at which things are evolving in the country and the still inadequate biosafety capacity that is apparent in the country, there is a lot of need for ABNE's intervention in the country. Particularly, training of the National Biosafety Advisory Committee on the implementation of the Biosafety Directives (NBAC) and NBAC and researchers on CFT planning, execution, inspection and monitoring of compliance is critical.

Also there is a need to deepen understanding in the broad areas of biosafety including administrative handling of applications, application review and decision making. Training on risk assessment, risk management and risk communication is also critical.

Participants of a Training Workshop on GM Crop CFT Regulatory Handling, 28-29 July 2016

Biosafety Capacity Building Efforts in Ethiopia

Table 3: Summary of ABNE Human Capacity Development Activities in Ethiopia

Type of intervention	Venue and date	Number of regulators / 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
Total		**185**

Looking Ahead: Biosafety Needs and Gaps

Considering the rapid unfolding of biotechnology /biosafety issues in Ethiopia, there is a need to intensify capacity building activities in the broad areas of biosafety in the country. Some of the areas that may need further action include the following:

- Training on the Biosafety Directives
- Backstopping on the development of application forms
- Technical support for the establishment and training of the National Biosafety Advisory Committee members
- Backstopping on IBCs formation & capacity building
- Technical backstopping to strengthen the functionality of the biosafety unit at the Ministry of EFCC
- Training on administrative handling, application review and decision making on biosafety applications
- Training on inspection and compliance monitoring
- Training on biosafety communication and awareness creation
- Training on risk assessment, risk management and risk communication

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Ghana

Biosafety Administrative System – robust and operational

Ghana remains a key focus for ABNE's biosafety capacity building. The country has made good progress in establishing a workable biosafety administrative system for the safe management of biotechnology. Currently, Ghana has established its National Biosafety Authority (NBA) and inaugurated its governing Board. An office space to house the operational staff of the NBA has been established and efforts are underway to recruit more technical staff. An appeals board was also recently inaugurated. ABNE provided a lot of support and guidance in establishing and getting the administrative system functional. This was done through various capacity building activities including workshops on biosafety administration and decision making for the NBA and members of the board. Currently, Ghana biosafety system does have the right level of competence and structures to administratively process any application in accordance with the biosafety Act for review and decision making.

One important component of the biosafety administrative system is mechanism for decision making. Ghana's biosafety act requires that socio-economic issues are considered before a decision is made. The law is however silent on how to do this. As the biosafety system inches closer to handling and processing applications for general releases, it has become important to lay down modalities and mechanisms for incorporating socio-economic issues in decision making to avoid any possible future delays in decision making. Upon the request of the NBA, ABNE conducted a training workshop to provide clarity on how to consider socio-economic issues in decision making. ABNE has been given the mandate by the NBA Board to work with the secretariat to come up with clear guidelines for considering socio-economic issues in decision making.

"Training for the NBA Board on best practices for socio-economic consideration in decision makings in decision making"

Legal framework – ready for general release

Ghana has a Biosafety Act (Act 831, 2011), that is considered workable in many respect. This Act recognizes an existing implementing regulations titled Biosafety (Management of biotechnology) Regulations, 2007 (LI 1887) which is limited in terms of the activities it permits, i.e. LI1887 permits applications for research purposes only (contained and confined use of GMOs). To ensure that the NBA exercises its full mandate under the biosafety act (Act 831, 2011), efforts were made to revise the regulations and broaden its scope to include all activities permitted by the parent Act. One of our key focus in 2016 was to assist Ghana to revise this existing regulations to provide the biosafety system of Ghana with adequate legal authority to ensure the safe management of biotechnology. This process has been quite slow but following several attempts, ABNE made very useful inputs to help align the regulations with international best practice thus ensuring that they are workable and enforceable. The document was finalized this year and was subsequently adopted by the NBA board for implementation. However, there is a final step required in that the final document has to go back to the sector minister for approval and subsequently to parliament where after a given number of days, it will mature into a regulations baring any adverse comments.

Fortunately, Ghana's biosafety Act also empowers the NBA to issue guidelines in respect of any activity under the Act. This means that the NBA can issue guidelines to implement the Act vis-à-vis areas that are not currently covered under the old implementing regulations (which is still in force). A decision was therefore made by the Board of the NBA to develop guidelines to help implement the Act in entirety whiles awaiting action on the regulations, knowing that the regulations provide a better legal authority to the Board in pursuance of their mandate under the Act. With assistance from ABNE and other service providers, these guidelines together with an application form were developed, finalized and adopted by the NBA board. **This means that Ghana now has capability to receive and process any application within the scope of the biosafety act (including general release applications).**

Expertise for risk assessment

Ghana has a fair number of technical experts with adequate exposure and experience in matters of biosafety risk assessment. These experts have benefited from capacity building opportunities provided by ABNE in the past (see Annex below) and have been involved in the risk assessment of various confined trial applications. However, the technical expertise required for assessing the safety of GMOs for general release are often one step above those required for confined trials, including expertise for food safety. To augment the food safety capacity for Ghana, two regulators from the Food and Drugs Authority (FDA) were given the opportunity to participate in and become members of the Food Safety Resource Network for Africa (FSRN), organized in collaboration with Michigan State University (MSU). In addition, two regulators have been nominated to be trained on environmental risk assessment.

Political will

We have seen some degree of political will in Ghana with regards to biosafety and willingness to safely harness the potentials of biotechnology for national development. ABNE made several attempts in advocating for some national prioritization of biosafety in Ghana including during a breakfast meeting held in Dakar with the sector minister. This year, government of Ghana took bold steps to make some budget allocation available for the operations of the NBA. In addition, government has made some budgetary commitment to operations of the NBA in next year's budget. These are positive indications that there is some commitment from Government towards prioritizing and strengthening the biosafety system in Ghana.

Empowering lawyers

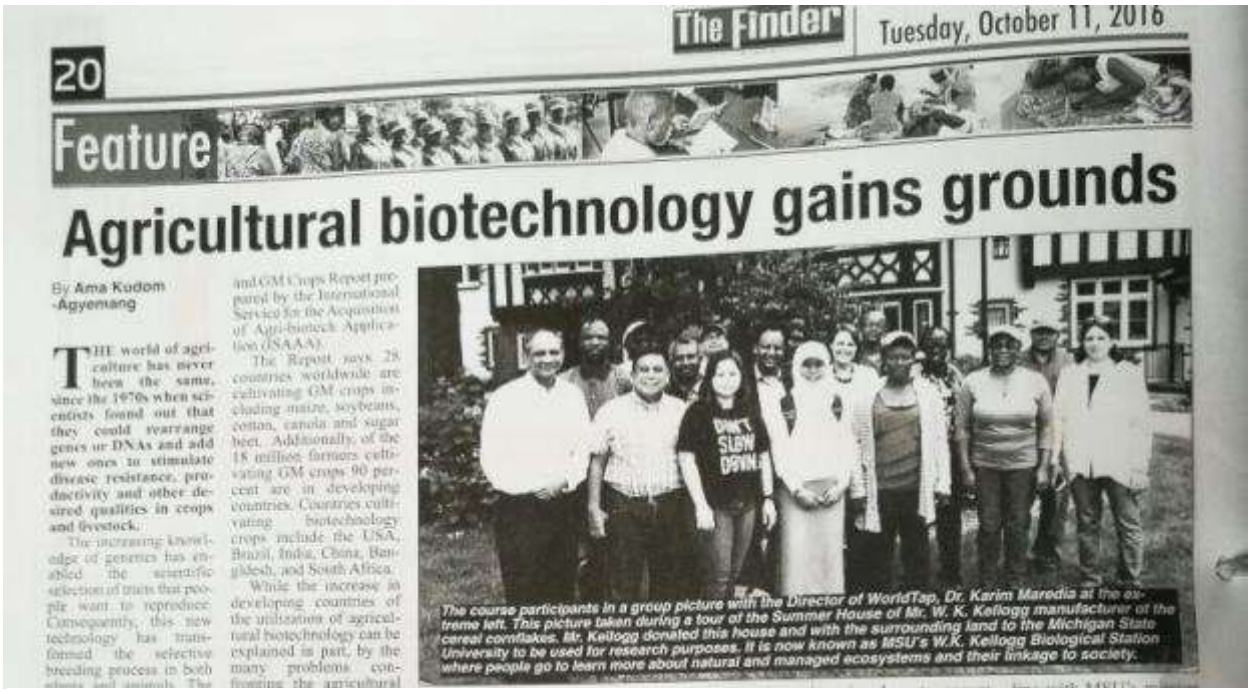
Ghana has a core group of lawyers who have a fair understanding of the issues relating to biosafety. This is important to ensure strict enforcement adherence to biosafety provisions of the law. It is also necessary to ensure adequate legal protection for the biosafety system and its operators, particularly the regulators who will be involved in regulating various biosafety related activities. Through the Network of lawyers, ABNE continues to engage lawyers from Ghana to make sure they are up-to-date on current developments in the area of biosafety. In October this year (2016), three of these lawyers received training in Ouagadougou.

Civil society activism and biosafety litigations

There are several civil society groups in Ghana but one in particular appears to be very active in their opposition to the safe management of biotechnological tools in general and genetic engineering in particular, i.e. Food Sovereignty Ghana (FSG). It will be recalled that the biosafety system of Ghana exhibited considerable resilience following a legal suit that challenged the setup, mandate and operations of the NBA (previously NBC). FSG filed this suit against the NBA and other state actors seeking an interlocutory injunction on the development and release of GMOs in Ghana. Ultimately, the group wanted a ban on the release of GMOs in Ghana for any purpose. A high court of the republic of Ghana currently hearing the case has dismissed the application for injunction on the grounds that it lacked merit. FSG has indicated it will file for an appeal against this ruling. This opens up the case, and ABNE will continue to provide technical support to Ghana as and when needed.

Facilitating biosafety communication and outreach

Communication and outreach is very important in ensuring adequate information sharing to facilitate public participation in biosafety decision making. ABNE has in the past supported communication and outreach activities and has supported Ghana to develop a communication strategy to help the competent national authority. This year, ABNE supported two individuals with communication background to augment their understanding in the area of biosafety. Some of the beneficiaries have already started producing articles in the daily newspapers on subjects of agricultural biotechnology (see photo below).



The Finder Tuesday, October 11, 2016

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Feature

Agricultural biotechnology gains grounds

By Ama Kudom -Agyemang

THE world of agriculture has never been the same, since the 1970s when scientists found out that they could rearrange genes or DNAs and add new ones to stimulate disease resistance, productivity and other desired qualities in crops and livestock.

The increasing knowledge of genetics has enabled the scientific selection of traits that people want to reproduce. Consequently, this new technology has transformed the selective breeding process in both

and GM Crops Report prepared by the International Service for the Acquisition of Agri-biotech Applications (ISAAA).

The Report says 28 countries worldwide are cultivating GM crops including maize, soybeans, cotton, canola and sugar beet. Additionally, of the 18 million farmers cultivating GM crops 90 percent are in developing countries. Countries cultivating biotechnology crops include the USA, Brazil, India, China, Bangladesh, and South Africa.

While the increase in developing countries of the utilization of agricultural biotechnology can be explained in part, by the many problems con-

The course participants in a group picture with the Director of WorldTap, Dr. Karim Maredia at the extreme left. This picture taken during a tour of the Summer House of Mr. W. K. Kellogg manufacturer of the cereal cornflakes. Mr. Kellogg donated this house and with the surrounding land to the Michigan State University to be used for research purposes. It is now known as MSU's W.K. Kellogg Biological Station where people go to learn more about natural and managed ecosystems and their linkage to society.

An article written by one of the beneficiaries of ABNE capacity building in Michigan State University (MSU)

Status of biotech R&D in Ghana

Crop currently being tested under confinement include cowpea, cotton and rice. Even though High protein potato was approved for CFT earlier, it was not conducted. See summary in **table 4** below:

Table 4: Status of CFTs and MLTs in Ghana

TRIAL (TRAIT)	RESPONSIBLE INSTITUTION	APPROVAL CATEGORY	CURRENT STATUS
Herbicide tolerant Cotton	Savanna Agricultural Research Institute (SARI)	Confined Field Trials	On-going

Herbicide tolerant cotton x Bt cotton (Stacked traits)	Savanna Agricultural Research Institute (SARI)	Confined Field Trials	On-going
Nitrogen-use efficiency (NUE) rice	Crop Research Institute (CRI)	Confined Trials	On-going
Nitrogen-use efficiency, Water Use efficiency and Salt Tolerant Rice (NEWEST) triple stack	Crop Research Institute (CRI)	Confined Trials	On-going
Bt (Maruca resistant) Cowpea	Savanna Agricultural Research Institute (SARI)	Confined Field Trials at SARI	On-going
Bt (Maruca resistant) Cowpea	Savanna Agricultural Research Institute (SARI)	Multi Location Confined Field Trials	On-going
High protein sweet potato	Crop Research Institute (CRI)	Confined field trials	*Yet to commence*

ABNE Biosafety Capacity Building Interventions in Ghana

ABNE has since 2010 been providing assistance to Ghanaian regulators; including the NBC, Institutional Biosafety Committees (IBCs) of research institutes, and state regulatory agencies charged with biosafety monitoring and inspection under the LI 1887 and the Biosafety act 2011. This has been in the form of technical support to make the Biosafety secretariat functional, b) Human resources capacity building, and c) Assistance with issues management and other consultancies.

Our main focus in Ghana in 2016 was to provide technical assistance in a final push to help Ghana finalize the revision of the existing regulations and other instruments that are key to the operationalization of the biosafety Act of 2011 like guidelines and application forms. Ghanaian regulators, policy makers and important stakeholders were also supported to participate in other capacity building opportunities including; i) food safety, Biotechnology and Research management, technology transfer and commercialization short courses at Michigan state university, and ii) Lawyers training in Ouagadougou.

Table 5 below summarizes all the activities that were undertaken by ABNE from 2010 – 2016 to support regulators, policy makers and other stakeholders through various training and education platforms such as workshops, internships and study tours, and biosafety short-courses *inter alia*. ABNE continues to maintain an open communication with the Ghanaian regulators for guidance and rapid technical support when necessary. This has established ABNE as a credible and trusted source of biosafety regulatory information for the competent authorities in Ghana.

Table 5: List of activities conducted in Ghana by ABNE 2010 – 2016

Activity	Venue and Date	Numbers Benefited
Training workshop on biosafety administration; application handling and biosafety decision-making, Socio-economic considerations	Ghana; - March 2010 - November 2010 - May 2013 - May 2015 - September 2016	 40 27 15 16 15
Biotechnology and Environmental biosafety short course	Michigan State University –USA; - July 2010 - August 2012 - August 2015 - August 2016	 1 2 1 1
Food safety short course	Michigan State University –USA; - August 2010 - July 2015 - July 2016	 1 1 2
Internship	South Africa; - November 2010 - May 2012	 2 1
Study tour	South Africa; - November 2010 - May 2012 India; - December 2010 - October 2013 Ghana (Tamale); - October 2014	 2 2 1 1 3
Sensitization workshop for Members of Parliament in Ghana on the Biosafety Bill	Ghana; - January 2011	40
Training & technical support to strengthen regulatory capacity for risk assessment (application review, decision making)	Ghana; - January 2012 - August 2012 - April 2013 - May 2014	 31 30 27 24
Training to strengthen regulatory capacity of for inspections, monitoring and compliance (Institutional Biosafety Committees in Ghana)	Ghana; - June 2012 - July 2013	 20 30
Training to strengthen biosafety communication capacity	Ghana; - August 2012	 25

	- May 2013	13
Preparatory meeting on multi-location trial of GE crops in Ghana; Case of Bt cotton	Ghana, April 2013	12
Biosafety for lawyers short course	Michigan State University –USA; - July 2013 Ghana; - February 2015 Nairobi; - October 2015 Ouagadougou - October 2016	1 8 4 3
Training of Trainers (ToT) programme	Michigan State University –USA; - May 2013	2
Biosafety short-course in partnership with African Universities	Polytechnic University of Bobo-Dioulasso – Burkina Faso; - November 2013 University of Ghana; - July 2015	 3 35
Regional food/feed safety workshop	Accra, Ghana	11
Biosafety awareness workshops for stakeholders (Farmers, Media, Editors, Policy makers, etc.)	Accra; - March 2014 Kumasi; - August 2014 Ada; - September 2015 Accra - November 2015	 32 26 27 47
TOTAL		**585**

Impact of ABNE's Interventions in Ghana thus far

Even though ABNE cannot singly claim credit for all the improvements in the biosafety system in Ghana, our interventions have contributed immensely to making Ghana's biosafety system an exemplary one in Africa. It is our assessment that Ghana has most of the key elements that make a biosafety system functional including a robust administrative system capable of processing and making decision on all activities permitted by the biosafety Act, a workable legal environment with adequate legal authority including mechanisms for appeal, adequate flexibility including mechanisms for variation of permits, technical expertise and experience, political will and commitment from government, etc.

2017 in focus; Future Capacity Building Efforts

The main focus of ABNE's capacity building in Ghana in 2017 will be to provide regulators with technical support to augment their capacity to handle activities related to the general release of GMOs. This includes risk assessment capacity and guidance on how to consider socio-economics in decision making. ABNE will continue to support efforts at further broadening biosafety awareness amongst key stakeholders particularly law makers, religious and traditional leaders, the media and farmer groups. In line with this, ABNE will assist the competent Authority to effectively coordinate biosafety communication to further improve biosafety awareness across the country. ABNE will continuously review Ghana's capacity gap through proactive issue sensing and design tailored interventions to address gaps identified.

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Kenya

Kenya position's long term standing economic and technology leadership in Eastern and Southern, (outside South Africa) is being challenged by the emerging health competition among Africa Countries. For example, Ethiopia has experienced double-digit economic growth, averaging 10.8 per cent since 2005 and according to International Monetary Fund's latest statistical estimates indicate that Ethiopia's gross domestic product (GDP) is forecast to grow from $61.62 billion in 2015 to $69.21 billion in 2016, narrowly beating Kenya's output ($69.17). This transitory scenario in switching of economic leadership roles is also replicated in biotechnology and biosafety research and development (R&D). NEPAD/ABNE-MSU interventions in biosafety in Africa have taken advantage of this geo-political dynamism to develop functional biosafety Regulatory frameworks in Africa that will help African Governments make informed choices in adoption of improved biotech and convention seeds for enhanced food and nutritional security for small scale farmers.

Kenya is one of the five new Africa countries that the ABNE-MSU interventions targeted to implement biosafety and regulatory activities that will result in biotechnology crops being evaluated and approved for commercial release by 2019. Three bottlenecks to achieving this objective were identified such as- inadequate biotechnology and biosafety capacity among members of the KNBA Board; inadequate capacity, harmony and synchrony in decision making process among regulatory agencies involved in testing and commercial release of Bt maize and Bt cotton and presence of GMO importation bans since 2012. Key intervention in FY 2016, to debacle these obstacles are outlined as follows-

Capacity Building of the Board of Management of National Biosafety Authority

During the last quarter of 2015, the Kenya National Biosafety Authority (KNBA) received two applications for consideration for commercial release comprising of Bt maize (Mon 810) and Bt cotton (Mon 15985). Although KNBA usually submits applications to experts for technical review, KNBA is the final decision body on approvals for all applications pertaining to GMOs. This critical role and responsibility of KNBA was constrained by the fact that KNBA had just recruited four new members to replace four whose terms had expired in the last quarter of 2015. Given this backdrop of new board members, it was imperative to enhance the Board's capacity in general understanding of basic biotechnology and biosafety and risk assessment and decision making for commercial release, to sustain their objectivity in considerations of GMOs applications. The objective of the workshop was therefore to strengthen the capacity of the regulatory agencies and the members of the Board of management to review and make decisions on environmental release application with a view of enhancing their participation. The capacity building was undertaken in collaboration with the Program for Biosafety Systems (PBS) and Kenya University Department of Biochemistry and Biotechnology (KUBB). 15 members of the KNBA were trained from 21-23 March 2016.

The outcome of the review process of Bt maize Mon810 application for general release by Kenya's National Biosafety Authority (NBA) recommended that Bt Maize event Mon810 go

Members of Kenya National Authority Board during a capacity building workshop in March 2016

through the procedure of National Performance Trials (NPT) under supervision of the National Performance Trial Committee (NPTC) of Kenya Plant Health Inspectorate Services (KEPHIS) before consideration for commercial release. After successful fulfilment NPT evaluation, the Essentially Derived Varieties (EDV) will be registered, gazetted and officially released by the National Variety Release Committee (NVRC) under auspices of the Ministry of Agriculture (MoA). In addition, the National Biosafety Authority requested that the EDV should be analysed to provide one additional food safety data called composition analysis under its supervision. It was therefore considered vital that the different agencies involved in the preceding different steps in the pathway to commercial release approval establish platform of dialogue, be capacity built to facilitate common understanding, synchrony and harmony in their decision making process to allow these crops to be objectively considered for commercialization. ABNE in partnership with Program for Biosafety Systems (PBS) built capacity of the various inter-agency and inter-ministerial involved in Mon810 evaluation including -KEPHIS, NBA, NPTC, NVRC and staff from the Ministry of Agriculture (MoA) to develop close collaboration and a common understanding of their specific evaluation procedures and harmonize their decision making for objectivity in evaluation of GM crops and commercial release for cultivation on farmers' fields. This was a challenging task because the agencies had had no passed history or experience of working together and

making decisions in tandem given that this is the first GMO in Kenya to reach consideration for general release. The two days' training was conducted in collaboration NBA and PBS from June 27-28, 2016. Twenty five staff from NBA, NVRC, NPTC, MoA, KEPHIS were trained in National Biotechnology and Biosafety and NPT and NVR procedures. Three key outcomes from the training were- i) Two roadmaps were developed for National Performance Evaluation, General and National Variety Release of Bt maize (Mon 810) and Bt cotton (Mon 15985); ii) Each of the agencies developed a common understanding of processes and decision making undertaken by the other in regulatory approvals, iii) A platform for dialogue and harmonization of decision making process of among the regulatory agencies- NBA, NPTC and NVRC was created and contact person proposed to facilitate NPT and evaluation for variety release.

Capacity Building to Agencies involved in National Performance Trials Committee, National Variety Release Committee and National Biosafety Authority, July 27- 28, 2016

GMO Ban

The GMO importation Ban decreed imposed by the government of Kenya in 2012 has still not been lifted despite various efforts by the multi-stakeholder efforts. In August 2015, promise that Kenya government would lift the ban on genetically modified organisms (GMOs) in two months, by Deputy President William Ruto has not been effected. During side meeting Consultation in the 5th National Biosafety Stakeholders conference in August

2016, it proposed that given that 2017 is the election year, it is best to wait and pursue the issue after the August 8, 2017 Elections.

Capacity Building of the Institutional Biosafety Authorities in Kenya

This is the third Institutional Biosafety Committee (IBC) training undertaken by ABNE in Kenya in conjunction with the Program for Biosafety Systems (PBS) and the National Biosafety Authority (NBA) of Kenya. By October 2015, NEPAD/ABNE in partnership with PBS and NBA had conducted two technical trainings for members of eight Institutional Biosafety Committees (IBCs) from eight institutions in Kenya. The first two trainings were held at the Lukenya Gateway from May 29 to June 3 and the second training from October 5 to 6, 2015 at Kenya School of Monetary Studies. Staff were trained from- 8 IBCs including- The International Centre of Insect Physiology and Ecology (ICIPE), International Livestock Research Institute (ILRI), Kenyatta University (KU), Masinde Muliro University of Science and Technology (MMUST), Kenya Agriculture and Livestock Research Organization (KALRO); Kenyatta University of Agriculture and Technology (JKUAT), Mount Kenya University (MUK). This third training builds on knowledge gained from the preceding two trainings and covered the following topics- To capacity build new IBC members in risk assessment, completing applications and internal/external review of application for containment and confined field trials. This training was important because IBCs are internal reviewers of all applications for GMO from containment to confined field trials before they forward applications to the NBA for the final approval and permit. Poorly developed applications are usually rejected and returned by NBA or referred back to IBCs. Building capacity of competent internal review system of applications by IBCs would therefore ensure faster and efficient approval of applications.

Twenty- two members of ten IBCs and one NGO from Kenya received hands-on training that included the previous listed 8 IBCs above plus the University of Eldoret (UoE), South Eastern Kenya University (SEKU) and Africa Harvest International Biotechnology Foundation.

Participation in the 5th Kenya National Biosafety Conference

ABNE staff attended the fifth National Biosafety Conference and presented two papers on- Challenges in Commercial Release of Biotechnology Crops- Interface between General Release and National Variety Release Procedures and Features of Functional Biosafety Regulatory Frameworks. The purpose of the first paper was to sensitize the Conference attendance from 8 African countries that Biosafety Authorities/Agencies will need to work

with National Performance Trial Committee (NPTC), National Variety Release Committees (NVRC) in order to facilitated objective evaluation and commercial release of Biotech crop for the farmers benefit. This is because most Africa countries with seed require that commercial seeds whether Biotech or conventional must go through NPT and be approved by NVRC.

Cumulative Summary of ABNE- MSU biosafety capacity building activities in Kenya

Table 6 shows the cumulative capacity building activities conducted and short course attended by the Kenya regulators and policy makers. This year biosafety study tour was conducted to India in which two Kenya lawyers attended.

In addition, Kenya Policy makers from the national Biosafety committee, Kenya Plant Health Inspectorate Service (KEPHIS) KEPHIS AND AATAF attended biosafety course organized by Michigan State University. The purpose of which was to empower Kenyans policy makers with adequate knowledge to ensure objectivity in evaluation and decision making of Biotech crops.

ABNE capacity building efforts in Kenya

Table 6: Summary of ABNE Activities for Kenya

Activity	Venue and Date	Numbers Benefited
Workshop on risk assessment, risk management, and decision making processes for Kenyan	Kenya, July 2010, March 23 – 24, 2015	69

regulators		
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
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 14th -17th 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
TOTAL		**293**

Impact of ABNE activities in Kenya

Kenya has reviewed two applications for General release of Bt Maize and Bt Cotton. ABNE and partners were involved in Capacity building of the Regulatory agencies and policy makes to empower them for objective evaluation of the two biotech crops for commercial release. For BT maize ABNE and Partners implemented a training workshop that brought together NBA, the National Performance Committee and the National variety release committee. Key impact was that a road map for developed for NPT, NVR for the two crops. A platform was developed for the regulatory agencies to dialogue and harmonize evaluation and decision making that would facilitate objective evaluation of Bt maize and cotton for commercial testing and release for farmers. Future follow on in capacity building, study tours is still vital to consummate the process of commercial seeds.

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Malawi

Malawi has continued building on the progress that it has made in 2015. In the year 2016, Malawi ventured into a new CFT on genetically engineered banana for bunchy top virus disease resistance. The National Biosafety Regulatory Committee (NBRC) approved confined field trials for banana on the 26th of February 2016. The planting materials were introduced from Australia and a CFT has been planted at the Bvumbwe Research Station of the Ministry of Agriculture and Food Security. The trial is going quite well and will continue for three years, from 2016 to 2018. (Figures 1-3). The GM banana confined field trial is the second GM food crop CFT following the approval and conduct of a genetically modified cowpea variety CFT for Maruca pod borer resistance.

After holding consultations with ABNE and seeking expert review of the Bt cotton application dossier for environmental release in December 2015 and January 2016, the NBRC recommended grant of approval and the Minster of Ministry of Natural Resources, Energy and Mining signed the approval letter for environmental release of MON15985 on 12 April 2016. At present, preparations are going on to introduce Bt cotton seeds and planting of a large number of trials for variety registration. There is quite a lot of hope and excitement that Bt cotton would go to farmers' field for large scale commercial production in 2018.

The planting material were maintained in the greenhouse until field planting of the CFT was done (Photos from Dr. Wezi Mkwaila, Lilongwe University of Agriculture and Natural Resources).

ABNE's Director and two Programme Officers made a technical backstopping and planning mission to Malawi in June 2016 and made useful discussions with experts of the Biosafety Registrar's Office at the Environmental Affairs Department, with seed producers, with the staff of Lilongwe University of Agriculture and Natural Resources and with the staff of Agricultural Research Service. Based on needs identified during those discussions, a regulators and scientists forum on biosafety of GMOs was held from 11 – 12 October 2016. The forum indicated a significant closing of the gap between various stakeholders in 2016.

Twenty four participants attended a Regulators and Scientists Forum on Biosafety of GMOs in Malawi conducted at Riverside Hotel & Conference Centre, Lilongwe, from 11 - 12 October 2016

ABNE capacity building efforts in Kenya

Table 7: Summary of ABNE Human Capacity Development Activities in Malawi

Type of intervention	Venue and date	Number of regulators / 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
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	Riverside Hotel & Conference Centre, Lilongwe, 11 - 12 October 2016	24
Total		**177**

Looking Ahead: Biosafety Needs and Gaps

Malawi has made significant progress in building workable policies and regulations. The country has so far conducted CFTs of three crop species (cotton, cowpea and banana) and has granted approval for environmental release of Bt cotton event MON 15985. Malawi is preparing to undertake a large scale Bt cotton on-farm testing for variety registration and ultimate commercialization. This requires a renewed engagement and regulatory support for the country to make economic benefit from investments made so far. This is more so important because the National Biosafety Regulatory Committee has been

reconstituted recently and new members have replaced the committee members whose terms of duty was over. Hence, it is imperative that ABNE undertake a series of biosafety trainings to these new NBRC members.

Moreover, it is imperative to note that with the apparent progresses made in Malawi, the usual misinformation and distortion activities of anti-GMO activists may continue to grow considerably. To counter this imminent challenge, ABNE along with other partners has noted the importance of strengthening biosafety communication and awareness creation capacity and has shared its biosafety communication manual with the Malawian biosafety office and encouraged the office to build national biosafety communication strategy.

In order to bring other key stakeholders into the fold, ABNE will also undertake biosafety training for members of the National Technology Approval Committee to foster understanding and ease the process of variety registration.

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Mali

Focus on Transgenic Mosquito Strategy to fighting malaria

Mali is actively involved in the Target Malaria project together with Burkina Faso and Uganda, aiming to reduce malaria transmission by using transgenesis to control populations of *Anopheles gambiae*.
Following the approval granted early this year by the Burkina Faso Biosafety Agency, the Target Malaria project, is close to submitting an application for contained use of transgenic mosquitoes in Mali.
Because Malian Regulators have no experience in handling applications, ABNE focussed on assisting build the necessary capacity to review dossier and make informed decision on contained use of transgenic male sterile mosquitoes.

Biosafety Capacity Building activities

In August, a three day training workshop was conducted in Dakar, Senegal, for Malian Regulators. The choice of the venue outside Mali was decided in agreement with Malians, taking into account security reasons. The workshop was conducted with the guidance of experts from Burkina Faso as per the intention expressed by the representative of the Malian biosafety agency
In practicing an application review exercise, Malian regulators had the opportunity to identify the week links of their legislation and discuss ways of making it workable.

Malian regulators under training by the Burkina Faso ANB CEO, on Transgenic mosquito application review and decision making. Dakar, Senegal, August 2016

Below is the summary of activities that have benefited to Malians from 2009 - 2016

Table 8 Summary of biosafety and biotechnology related activities benefiting Malian Regulators and Stakeholders (2009 –2016)

Activity	Place and date	Number of Malians trained and/or involved
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	6 0
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	5
ABNE biotechnology and Biosafety study tour	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	1 1
Training on Problem Formulation on Gene Drive applied to mosquitoes	Accra, October 2016	1
Total		**94**

Areas of focus for ABNE future intervention

ABNE will keep providing the technical assistance required to move forward with the application for contained use of transgenic male sterile mosquitoes. This will particularly include assistance the development of regulatory tools such as check-lists and other relevant forms to facilitate the actual review exercise and the conduct of inspection and monitoring as required.

It is expected that a successful handling of an application on transgenic mosquitoes could also pave the way for agricultural biotechnology

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Mozambique

Biosafety Regulatory system in Mozambique - 2016

An inter-institutional working group on biosafety in Mozambique: *Grupo Inter- Institucional Sobre Bio-Segurança* (GIIBs) was established in 2012 to serve as the National Biosafety Committee (NBC) followed by the designation of the Ministry of Science and Technology to serve as the National Biosafety Authority, although this is yet to be functional. The government of Mozambique as repeatedly acknowledges the contributions that modern biotechnology can make to meet critical needs for food and nutritional security.

Mozambican government passed the revised biosafety decree into law in 2014 following the interventions of ABNE that led to the creation of a legal environment through which GIIBS can operate in terms of decision making on regulatory matters. GIIBS membership is made up of representatives from a number of government ministries and as such some complications do arise with some delays in decision making.

High-level policy advocacy visit to the designated CFT site at Chokwe where the WEMA trials will be conducted.

High-level policy advocacy have been adopted as a 'wake-up call" and this has yielded some dividends in terms of having a functional biosafety system. In 2015, ABNE team made a consultative visit to the National biosafety Authority however the non-constitution of the GIIBS membership is still a stumbling block; however an ad hoc committee was set up to deal with applications. As a result of these ABNE activities was curtailed. In December 2015, a conditional approval for the conduct of the CFT for Water efficient maize for Africa (WEMA) was granted which was a milestone for the country.

Mozambique is one of the five countries selected for WEMA project, where mock field trial was previously conducted in 2010 as part of the training programme offered by the WEMA team. In early 2016, an application for the experiment was submitted by AATF and the ad-hoc committee reviewed the application and approved the conduct of a CFT for WEMA with phyto-sanitory approval and permit to import seeds for planting.

High-Level policy advocacy to Mozambique

Lack of progress in Mozambique towards the development of functional regulatory system has been of concern, especially as expressed by the ABNE Technical Advisory Committee in their last meeting in November 2015.. The high level policy advocacy was embarked upon to meet with the Hon Minister of Science and Technology, Higher Education and Technical Vocation (MCTESTP), Professor Engr. Jorge Nhambiu so as to see to the constitution of inter-Ministerial membership of the Mozambique regulatory body (GIBBS) so as to move the regulatory process forward together with the conduct of WEMA trials in Chokwe.

Group picture with the Hon Minister of Science and Technology, Higher Education and Technical Vocation (MCTESTP), Professor Engr. Jorge Nhambiu in his office during the visit.

Also another meeting was held with other stakeholders including the Director-General of Mozambique Agricultural Research Institute (IIAM), the WEMA project team and visited the CFT facility in Chokwe for compliance, met with the GIIBS *Ad hoc* committee member of three that approved the site. The minister in his capacity assured NEPAD Agency ABNE and partner (MSU) that the GIIBs membership will be constituted before the end of the year.

Biosafety capacity building in Mozambique

A senior member of ad-hoc committee from Mozambique from MCTESTP participated in the biosafety short course held at the Michigan State University, USA during summer 2016 tagged "Agricultural Biotechnology and Biosafety" which aimed to provide hands-on experience in various aspects of agricultural biotechnology and biosafety. The participant rated the training as quite helpful and an eye opener with regards to biotechnology which will guide GIIBs in the nearest future.

Group picture of the participants at the short course at Michigan State University with the red indicator showing Mozambique participant in August 2016

Main Impact of ABNE interventions in Mozambique

Acknowledging the relevance of ABNE capacity building programme in Mozambique and the Honorable Minister for Science and Technology requested NEPAD Agency ABNE to assist the national regulatory body (GIBBS) in capacity building of international standard for the regulation of the technology during the high-level policy advocacy visit with our international partner.

Table 9: Summary of ABNE Human Capacity Development Activities in Mozambique

Activity	Venue and date	Number of Regulator
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
Total		60

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Nigeria

Nigeria's biosafety regulatory system is an example of a burgeoning national system in sub-Saharan Africa. The year 2016 presented a unique test case for functionality as the National Biosafety Management Agency (NBMA) had the opportunity to, for the first time, administratively handle, review and make a decision on an application for environmental release and placing on the market of insect-resistant cotton for cultivation and food/feed uses. In addition, an application for field trials for a stacked maize event (herbicide-tolerant and insect-resistant) in multiple locations was also reviewed and decision made.

Prior to receipt of these applications, the national biosafety system had been established with specific regulatory characteristics including:

- An adequate legal authority following the enactment of the biosafety law on the 18th of April 2015, and the subsequent establishment of the National Biosafety Management Agency (NBMA). The law, the National Biosafety Management Agency Act 2015, mandates the NBMA to develop regulatory and administrative systems for the environmentally sound management of modern biotechnology practices. Subsequently, to operationalize the law, efforts were made to develop new regulations (contained use; confined use; commercial release, import, export and transit; packaging, handling, transporting) and update existing guidelines covering key biosafety activities;
- Demonstrable government leadership through support for the NBMA. Key staff members of the stakeholder Ministry, who had had their competencies strengthened while working in the erstwhile biosafety unit prior to the enactment of the law, were retained and additional staff recruited to augment human resources. Government also allocated a dedicated budget for the operations of the NBMA;
- The national biosafety safety system had a critical mass of competent risk assessors who could provide science-based recommendations;
- A national biosafety committee was appointed and whose work was informed by procedures that had clearly defined standards, and were transparent, participatory, flexible and adaptable.

With these regulatory features in place, and pursuant to the National Biosafety Management Agency Act 2015, the applications for environmental release and placing on the market of insect-resistant cotton for cultivation and food/feed uses and that for multi-location trials for a stacked maize event (herbicide-tolerant and insect-resistant) were reviewed and approved. As mandated by law, the NBMA provided opportunity for public comments in making these approvals.

Beyond these approvals, and noting calls to engage policy makers and government officials who have been observed to have had limited opportunities in current discussions regarding the safe management of modern biotechnology and their roles and responsibilities in ensuring functional biosafety regulatory systems, the NBMA with support from ABNE organized a policy roundtable. The policy roundtable sought to provide a platform for multi-stakeholder engagement and interaction on managing biotechnology and stimulate a policy debate for increased awareness among key actors on their roles and responsibilities;

identify and raise awareness on critical biosafety issues in Nigeria; and provide opportunity and context for expert-dialogue on policy options and to develop consensus action steps for policy development and implementation. The main outcomes of the policy roundtable were that it highlighted the roles of the NBMA vis-à-vis other government agencies in biosafety thus fostering inter-agency collaborations, avoiding mandate overlaps and delays resulting in duplication of duties. It also contributed to ensuring increased stakeholder participation in biosafety processes and a holistic approach to biosafety regulation in Nigeria.

The NBMA also vigorously pursued a stakeholder outreach and education programme that ensured improved visibility as the mandated competent authority and increased confidence in the biosafety regulatory system. But then communication has been identified as the weakest link in the biosafety system particularly with the ongoing increased campaign of biosafety misinformation by some entities opposed to the technology. There is therefore an urgent need to finalize the national biosafety communication strategy to support the day-to-day communication activities of the NBMA.

Overall, what is required now in Nigeria is to consolidate the gains so far by further strengthening existing capacity and exploring new areas of capacity building needs in 2017.

ABNE's biosafety capacity building activities in Nigeria (2010 – 2016)

In response to this request, ABNE has since 2010 assisted Nigeria through a multi-faceted capacity strengthening philosophy to address biosafety needs using continuous status assessment; harnessing earlier gains and existing capacity; collaborating with other

Group photo of participants in a workshop for the review of biosafety regulations in August 2015, in Abuja

regional and global biosafety initiatives in service delivery; forging strategic partnerships with institutions and stakeholders within the national system; and adopting a flexible but

robust approach to accommodate demand-driven evolving needs. ABNE has, to date, offered biosafety expertise to Nigeria, covering issues in environmental safety; food safety; socio-economic considerations in biosafety; biotech/biosafety policy and regulations; and biosafety communication with 1,263 regulators, scientists, lawyers, farmers, the media, policy and decision makers directly benefiting from ABNE services (Table 10).

Technical assistance was provided through biosafety training workshops; short courses in key subject matter areas; access to biosafety information resources through ABNE's web portal, policy briefs, newsletters, news bulletins and training manuals; technical support in the review and adaptation of guidelines for biosafety administration; biosafety internship programme in South Africa; study tours to Brazil, India, and South Africa; and global networking opportunities through participation in international meetings. Regulators were enrolled in a Masters e-biosafety course, which is a distance-learning programme designed to assist regulators who cannot be away from their duty posts for extended periods of time.

Table 10: Summary of ABNE activities in Nigeria

Activity	Venue and Date	Numbers Benefited
1. Creating an enabling legal environment		
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
2. Building a critical mass of regulators with enhanced competencies		
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	Michigan State University (USA),	1

commercialization and product stewardship program	August – Sept., 2016	
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
3. Enhancing biosafety communication and cooperation		
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
TOTAL		**1,263**

Impact of ABNE activities in Nigeria (2010 – 2016)

Biosafety capacity building requires coordinated and concerted efforts hence ABNE continues to work closely with various local institutions and biosafety initiatives in Africa to promote progress in Nigeria. Impact was achieved through partnerships and cooperation shaped by a shared vision and mechanisms for joint decision-making.

Impact has been observed during the past half-decade in the following three areas of strategic thrusts.

1) Creating an enabling legal environment for biosafety regulation

The national biosafety law was eventually enacted following sustained efforts by stakeholders. Technical guidance provided during the review of various implementing

regulations and guidelines would make for more workable provisions in operationalizing the biosafety law. The review of the implementing regulations also afforded an opportunity to train lawyers involved in drafting legislation on biosafety issues and stakeholders on key considerations for workable implementing regulations. Four regulations were reviewed and are ready for adoption, i.e., regulations for contained use and confined field trials; commercial release; import, export and transit; and handling, transporting, packaging. Nigeria's national biosafety administration guidelines were adapted from the ABNE administrative manual to help improve quality management systems and this, coupled with presentation of office equipment, has resulted in increased functionality of the national biosafety secretariat. Applications received have so far been reviewed timeously and informed decisions made.

2) Building the critical mass of regulators with enhanced competencies in biosafety

To attain a critical mass of regulators, scientists, lawyers, and policy/decision-makers with expertise in the performance of mandated functions, training workshops were conducted in biosafety administration and decision-making, biosafety compliance monitoring and inspections for ongoing confined field and multi-location trials (see Table 10). These efforts were complemented by biosafety short courses at Michigan State University, Polytechnic University of Bobo-Dioulasso and the University of Ghana. The trainings resulted in the adoption of best practices, strengthened competencies, and increased confidence in the regulatory system. The sensitization seminars for farmers and high-level stakeholder meetings helped promote understanding of the regulation of GMOs and to explain myths and misperceptions. This resulted in increased stakeholder awareness and involvement as well as their support for biosafety processes including the law enactment process. Participation in the study tours enabled Nigerian regulators to build a network of regulators and practitioners that would facilitate continuous cross-learning and sharing of experiences and lessons.

3) Enhancing biosafety communication and cooperation

Technical support was provided in developing a national biosafety communication strategy. This communication plan will support the day-to-day communication activities of the Competent National Authority. It will also provide a platform for enhanced public understanding on issues of biosafety and improve public participation in biosafety decision-making and policy. The training for Institutional Biosafety Committees and ABNE's multi-stakeholder approach to capacity building resulted in improved networking and cooperation among scientists, regulators, and policy-makers. Towards having a harmonised regional biosafety regulations and cooperation, technical guidance was provided in clarifying the implications of the proposed ECOWAS harmonised regulations for Nigeria. This resulted in submissions to the ECOWAS Secretariat to ensure Nigeria's best interests are served within the regional framework.

Overall, the various biosafety activities in the three areas of strategic thrusts contributed to enhancing knowledge and skills of Nigerian regulators, scientists, lawyers, and policy/decision-makers in adopting best practices for performing mandated functions and also broadened their understanding of core issues in biosafety decision-making thus resulting in increased confidence in the regulatory system.

Table 11: Status of agricultural biotechnology in Nigeria

Crop/Trait	Institution(s)	Status
Bio-fortified cassava with increased level of beta-carotene, provitamin A	National Root Crops Research Institute	CFT completed for 2 seasons
Biofortified cassava with increased Iron content	National Root Crops Research Institute	CFT completed for 2 seasons
Maruca-resistant cowpea	African Agricultural Technology Foundation, Institute of Agricultural Research (IAR)	CFT completed for 3 seasons, back crossed with preferred varieties; Multi-locational trials at 3 sites (Kaduna, Zamfara and Kano States)
Biofortified sorghum (bioavailability of Iron, Zinc and increase in Protein and Vitamin A contents)	Africa Harvest, Pioneer Hi-Bred, a company of DuPont business, IAR and National Biotechnology Development Agency	3rd season of CFTs and back crossing with preferred local varieties
Nitrogen-use, water-efficient and salt- tolerant (NUWEST) rice	National Cereals Research Institute	Permit granted but trial yet to commence
Cassava resistant to the African cassava mosaic virus (ACMV) and Cassava brown streak virus (CBSV)	National Root Crops Research Institute	Permit granted but trial yet to commence
stacked maize event (herbicide-tolerant and insect-resistant)	Monsanto Agriculture Nigeria Limited	Permit granted

Future capacity building efforts

The National Biosafety Management Agency (NBMA) has requested for continued support in 2017 based on prioritized identified needs. ABNE's support is being sought to institutionalize the biosafety roundtables as a periodic policy dialogue platform for stakeholder engagement and for fostering inter-agency collaborations. Technical support will also be provided to implement the national biosafety communications strategy to ensure the continuous and systematic process of information sharing while elevating the visibility of the competent national authority. These two activities would make for enhanced public understanding on issues of biosafety and also help improve the quality of public participation in decision-making and policy development regarding issues of biotechnology management and biosafety.

Further technical assistance is also planned for the review of existing drafts of regulations on liability & redress; guidelines on biosafety application review procedures; biosafety policy; and guidelines on biosafety administration. New guidelines will be drafted for socio-economic considerations. Additional key areas of support will be for training to regulators in the research institutions, regulatory agencies, and the Competent National Authority on

Biosafety to ensure strengthened competencies in monitoring compliance and regulation enforcement.

Going forward into 2017, ABNE will ensure that the current impetus is sustained in the broad areas of technical assistance through effective post-training support and follow-up programmes.

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Senegal

The revision of the biosafety law in good progress,

The Government of Senegal passed a biosafety law in 2009 and established a National Biosafety Authority together with a National Biosafety Committee. But similarly to many other African countries the Senegal biosafety law is considered restrictive and therefore does not favour the establishment of the partnership required to start research development on biotech products in the country.

The Government of Senegal through the National Biosafety Authority agreed in 2015 to revise the biosafety law that was passed in 2009 in order to improve the national biosafety legal framework. ABNE provided the necessary support for local consultants to develop a revised draft that has now to go under a thorough consultative process for validation.

Since May 2016, Senegal has become the host country for the ABNE main office. The country also plays a pivotal role within the Francophone West Africa region for the implementation of the NEPAD-Agency strategic programs within the region. Therefore the newly established office of ABNE in Dakar which also serves as the West Africa regional office for NEPAD-Agency provides a unique opportunity to move the biosafety agenda only for Senegal but also for the whole region.

Senegalese officials and ABNE leadership joining efforts to provide Senegal with workable biosafety legislation. Stakeholders' Consultative workshop on the revised law, Dakar, August, 2016

ABNE Biosafety Capacity Building Efforts in Senegal

In 2016 ABNE focussed its intervention on facilitating stakeholders' consultations towards the validation of the draft revised law.

The first meeting of the series was held in August in Dakar which provided the opportunity for ABNE experts and associated partners to make their input to the draft. The Secretary General representing the Minister of Environment at the workshop appreciated but clearly warned that the process to adoption of the revised law will still require many more steps as consensus needs to be built among the various stakeholders. In view of this, assistance and support from NEPAD-ABNE will be even more needed.

The Table below summarises biosafety related activities that benefited to Senegalese the last the last 7 years

Table 12: Summary of ABNE capacity building activities for Senegalese regulators and Decision Makers from 2003 - 2016

Activity	Place and date	Number of Senegalese trained and/or involved
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	Lomé, October 2013	1
Training on biosafety for African regulators, policy and decision makers, Bobo-Dioulasso, November 3-9, 2013	Bobo-Dioulasso Polytechnic University	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
Total		**184**

Areas of focus for ABNE future intervention

ABNE's future actions will continue to providing the necessary support to complete the revision of the biosafety law.

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Sudan

Sudan approved commercial release of the first Bt cotton variety in 2012 and is one of the three countries in Africa that have been producing genetically modified crops at commercial scale. The country developed its biosafety framework in 2005 and issued its National Biosafety Law to regulate agricultural biotechnology in June 2010. From the outset, Sudan has worked toward creating an enabling legal environment to access safe and economically useful modern agricultural biotechnology for economic development. Research work on Bt cotton in the Sudan started in 2009 in compliance with the national biosafety framework and the draft biosafety law that was already in place. The work was carried out under the close scrutiny of the Biotechnology and the Biosafety Research Center of the Agricultural Research Corporation at Shambat.

In the year 2015, NEPAD Agency ABNE in collaboration with Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA) /COMESA organized a biosafety training workshop for Sudanese regulators and other stakeholders from June 2 to 4, 2015 in Khartoum, Sudan.

A partial view of the participants

The workshop also offered a platform to discuss needs and future collaboration with the National Biosafety Council of the Sudan. The workshop was opened by the Minster for Environment, Forestry and Physical Construction of the Republic of the Sudan, His Excellency Dr. Hassan A. Hilal.

In 2016, Sudanese regulators expressed interest for a training workshop on GM crop environmental risk assessment and risk management as the country extending Bt cotton cultivation to 1 million *feddans* next year. ABNE discussed the issue with COMESA/ACTESA for partnership on this training and has received a positive feedback for ABNE to go ahead and organize the training. ACTESA/COMESA shall provide finances and the workshop is planned for late November.

➢ **Short courses and study tours abroad for Sudanese Regulators in 2016**

- The Secretary General of National Biosafety Council of Ministry of Environment, Forestry and Physical Construction of the Republic of Sudan attended an International Short Course on Agricultural Biotechnology and Biosafety conducted at Michigan State University from August 7 – 19, 2016
- A lawyer attended a Pan-African Biosafety Lawyers training workshop conducted in Addis Ababa, Ethiopia from 26 – 28 September 2016.

Sudanese delegates at the biosafety short course at Makerere University in July, 2015

ABNE Biosafety Capacity Building Efforts in Sudan

Table 13: Summary of ABNE Human Capacity Development Activities in the Sudan

Type of intervention	Venue and date	Number of regulators / Stakeholders
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
Total		**57**

Looking Ahead: Biosafety Needs and Gaps

Sudan has joined South Africa and Burkina Faso as the third country growing GM crop at commercial scale in Africa. The introduction of Bt cotton salvaged the collapsing cotton sector by easing pest problem and increasing the competitiveness of the cotton crop in the country. Despite this success, there is a growing challenge of misinformation of the public on the technology. Hence, NEPAD Agency ABNE may continue supporting the building of biosafety capacity focusing on biosafety communication and awareness creation.

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Swaziland

The Kingdom of Swaziland regulatory system

The Kingdom of Swaziland has a Biosafety Act 2012 under the custodians of the Swaziland Environment Authority (SEA), with the Biosafety Registrar's Office responsible for the implementation of the Act. In 2015, the regional economic community-Common Market for Eastern and Southern Africa /The Alliance for Commodity Trade in Eastern and Southern Africa (COMESA/ACTESA) reached out to NEPAD Agency ABNE for collaboration to build a functional regulatory regime in the country.

Prior to the engagement of NEPAD/ABNE in the Kingdom of Swaziland, a previous approval for the conduct of multi-locational field trials of Bt Cotton was obtained for the first year. During the second year, approval was denied for lack of certain documents.

A request from the biosafety secretariat of SEA for needs assessment to ABNE. A stakeholder assessment was conducted and a roadmap for regulatory system was developed. SEA further officially requested ABNE for inputs into the Biosafety Act 2012 contentious clauses, especially on the Liability and Redress and input for a roadmap.

Sensitization of the Member of Parliament

Majority of Swaziland small scale farmers grow cotton at an estimated land area of 3,000 ha. However, insect damage has become a serious disincentive to cultivate cotton in Swaziland,
However, the existing Act can only be reviewed by parliament through a motion that will require the Minister responsible (Ministry of Environment) to bring a reviewed document within a stipulated time. Therefore, NEPAD/ABNE and COMESA/ACTESA partnered to organize a sensitization workshop for Swaziland parliamentarians on study tour to South Africa commercial and small-scale farms in Gauteng and Limpopo provinces.

Technical support for the revision of the Swaziland Biosafety ACT 2012

NEPAD Agency ABNE assisted with Technical support for the revision of the Swaziland Biosafety Act 2012 after a sensitization workshop on biosafety regulations for Swaziland legislators and a study visit to South Africa.

Study tours of the MP of the Kingdom of Swaziland to South Africa

Members of the National Board of Advisory Committee (NBAC) attended this meeting and it was an opportunity to assess and discuss all the recommendations of the consultant on the need to revisit the issue of the liability and redress clause in the Biosafety Act 2012, including the provision of the Nagoya / Kuala Lumpur Protocol on Liability and Redress.

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Group picture of the member of the review committee of the Biosafety Act 2016 in

eZuwini, Swaziland 2016

Biosafety capacity building in the Kingdom of Swaziland

India study tour:

The Swaziland Environment Authority legal counsel participated in a study tour to India tagged “biotechnology and biosafety study tour“ which involved delegates from 16 African countries. This took them to New Delhi, Aurangabad, and Hyderabad where the delegates learnt about the regulatory system in India and interacted with the different role players in the Biotechnology sector. The delegates also interacted with the private sector, mostly seed companies. They also saw the trends in the regulation of Biotechnology are concerned. Also visited the Bio Science Foundation, where they learnt in detail tissue culture and visited their laboratory. In his remarks, Mr Shongwe said “the study tour was very beneficial to the delegates in that they learnt a lot about the science which will enable a better understanding and therefore will enable him to correctly advise governments on the regulation of genetically engineered crops.

Michigan State University short course:

A regulator from the Kingdom of Swaziland participated in the biosafety short course tagged “Agricultural Biotechnology and Biosafety” which aimed to provide hands-on experience in various aspects of agricultural biotechnology and biosafety.

Group picture of the participants at the short course at Michigan State University with the red indicator showing Swaziland participant in August 2016

Group picture of the participants at the short course at Michigan State University with the red indicator showing Swaziland participant in September 2016

Pan-African Biosafety Lawyers training

Two lawyers from the regulatory body of the Kingdom of Swaziland participated in the African Biosafety Lawyers Network trainings for African lawyers in the novel area of biotechnology and biosafety. The focus is to enhance their capacities in the aspect of Policy, regulations formulation, intellectual property, International treaties affecting plant breeders' rights which can benefit Africa research programs and build team for COP-MOP and strengthen the position of the Africa group

Impact of ABNE activities in the Kingdom of Swaziland in 2016

- Revision of Biosafety Act of 2012 and adoption of workable regulation
- JK seed company interested in testing Bt cotton trails in Swaziland farm
- Regulatory and legal fraternity empowerment in various training platforms
- Exposure of regulators to the best international practices
- Building a strong collaboration and networks
    - Member of Association of National Biosafety Authority in Africa
    - Member of lawyers' network
    - Member of African team to COP MOP 6 in Mexico.

A summary of ABNE's biosafety capacity building activities in Swaziland is presented in Table 14.

Table 14: Summary of ABNE activities in Swaziland (2015 – 2016)

Activity	Venue and Date	Numbers Benefited
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
TOTAL		**86**

Future capacity building efforts

- Need for the National Biosafety Advisory Committee to be capacitated on Risk Analysis
- Technical support for the development of the biosafety regulations and SOP document
- Training of SEA staff on biosafety administration/ decision making
- Technical review support of applications for CFTs and commercial release of GMOs
- Training workshop on CFT monitoring, inspection and compliance for SEA

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Tanzania

The Government of Tanzanian in the year 2015 took a positive step by amending its restrictive clauses from their biosafety regulation to allow the free conduct of research (R&D) in GMOs. Following this positive development, sometime in the month of March this year the Minister of Environment inaugurated the National Biosafety Committee (NBC) to begin to receive and review biosafety applications. Not long after its inauguration, the committee received an application for the conduct of a Confined Field Trial (CFT) in the drought tolerant maize and it successfully reviewed and issued a permit for the conduct of the same.

The NEPAD Agency ABNE has continued to support Tanzania towards establishing a functional regulatory system. The Agency has extended its support either directly or through collaboration with local and international partners providing similar services in the country.

As the country was set to start confined field trials in drought-resistant GMO maize this year, NEPAD Agency/ABNE had to intervene by conducting an Inspection and Compliance monitoring training to regulators and inspectors in the country to ensure that the country has adequate biosafety regulatory preparedness in the management of CFTs.

Group photo of participants with the team from NEPAD Agency/Seated centre on the front raw is the Director for Environment in Tanzania and the lone woman seated on the front is his Deputy

This training, which had 23 participants, came immediately after the issuance of the permit but before the planting of the drought tolerant maize.
In his speech at the opening ceremony, Director for Environment on his behalf and that of the Government of the United Republic of Tanzania, expressed gratitude for the support

extended by NEPAD/ABNE towards building the capacities of the Regulators and Inspectors in the country particularly at a time they needed it most as the country is readying to conduct the field trials in the drought tolerant maize.

Impact of ABNE activities in Tanzania

Table 15: Summary of ABNE Activities for Tanzania

Activity	Venue	Numbers Benefited
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 14th -17th 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 29th - 4tth 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
2nd African Biosafety Lawyers Meeting 29-30 October 2015	Nairobi, Kenya	2
Training for Regulators and Inspectors	Kunduchi Beach Hotel and Resort, Dar salaam, Tanzania- 19th – 20th September 2016	**23**
Training for African Biosafety lawyers	Addis Ababa, Ethiopia- 26th – 28th September 2016	**2**
Total		**135**

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Togo

A stronger political will is needed

ABNE has been assisting the Government of Togo to revise the biosafety law for the past 4 years. with the aim to create an enabling legal environment for the safe adoption of agricultural biotechnology. Efforts have led to develop a draft revised version of the law and four implementing regulations that are ready and awaiting to be submitted to the Parliament for final adoption..

Last year, in September, NEPAD Agency ABNE jointly with Michigan State University conducted a high level advocacy mission in the country to check on the status of the process and identify the gaps to be addressed to fast track the submission to the parliament. Consultations with stakeholders from the key ministries involved in the biosafety and biotechnology development process, led the mission to conclude for a need for a much stronger political will

Biosafety and biotechnology related activities

In 2016 in view of the misleading communication over the Burkina Faso cotton fibber length issue, ABNE focused on working with the Togolese media professionals in order to facilitate the sharing of balanced and accurate information. A training workshop was conducted in Lomé which also provided a platform for Togolese journalists to interact with and learn from their colleagues from Burkina Faso

Togolese Media professionals attending a training and information sharing workshop, Lomé, June, 2016

The major outcome of this gathering was the establishment of the first Togolese Network of Science Journalists which envisages maintaining a strong partnership with the Burkina Faso science journalists' network.

Impact of ABNE activities in Togo

Table 16 below summarises the capacity building activities carried out during the past seven years (2009 - 2016) benefiting to Togolese stakeholders

Table 16: Summary of biosafety and biotechnology related activities benefiting Togolese stakeholders from 2009 - 2016

Activity	Venue and Date	Numbers Benefited
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
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
TOTAL		**182**

Areas of focus for ABNE future intervention

The adoption of the revised biosafety law remains the targeted milestone for ABNE. Efforts will then continue through a stronger advocacy and policy dialogue. Empowering the newly established journalists' network will also be part of the strategy to move the process in Togo.

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Uganda

The slow process of having the Biotechnology and Biosafety Bill, 2012 passed into law in Uganda has not slowed down activities of Biotechnology and Biosafety regulation in the country. For a better part of 2015 up to the general elections when the term of the parliamentarians from the 9th parliament ended, the Bill has been on the Order paper of parliament awaiting debate but other pressing issues that the country's legislative Assembly had to deal with always overtook it. The head of state and the caucus of the ruling party have repeatedly reminded the nation about the importance of Biotechnology for the country once harnessed safely.

Uganda still enjoys numerous successes in GM research having conducted the biggest number of Confined Field Trials (CFTs) in Sub-Saharan Africa. With this impressive record, public research institutions and Universities such as Makerere Universities have embraced the establishment of modern Biotechnology infrastructure and capacity enhancement of Biosafety regulators.

NEPAD Agency ABNE, ABNE as an African Union-NEPAD Agency initiative with the mandate to support African countries in building functional biosafety systems in all African Union (AU) Member States has since the year 2012 been hosted in Uganda by the Uganda National Council for Science & Technology (UNCST). This is because UNCST is the National Competent Authority on biosafety and Biotechnology matters in the country in respect to research.

This year, following the general elections, the executive appointed in the Government, a Minister for Science, Technology and Innovation under whose docket UNCST will run. His role will include among others to pursue the passing of the Biotechnology and Biosafety Bill into law. During the previous attempts, the failure to secure the law has been largely due to the opposition the Bill has had from some members in the last Parliament. With the entrant of many new faces in the current parliament this year, it is believed without adequate lobbying and stakeholder involvement, it remains a daunting task to have the Bill passed into law.

This year in the month of August in order to kick-start the process in parliament, NEPAD Agency/ABNE took the lead in bringing together Stakeholders in a meeting with the Minister for Science, Technology and Innovation. The high-level policy engagement with the Minister and stakeholders was seen to be a very crucial attempt to begin the process particularly after spirits of most of the proponents of the Bill went low after the unsuccessful attempt.

To lift up the level of the meeting and its essence to all participants, the NEPAD/ABNE Director joined the NPCA members in Kampala. The Director's visit and the facilitation of NEPAD/ABNE towards the success of the meeting was well received and overwhelmingly recognized by the Minister and all other stakeholders who participated in this meeting, which was also chaired by the Minister. NEPAD/ABNE presented a paper on the current change of Biosafety Regulatory Landscape on the continent that was well received. Stakeholders reached solid understandings and resolutions and set timelines for subsequent meeting to fast track the Bill passing process. The Minister expressed the

gratitude of the Government for the support provided by NEPAD/ABNE towards the establishment of the biosafety regulation in Uganda and on the continent. He invited the Director to be part of other subsequent meetings in the country and NEPAD/ABNE to remain handy in coordinating future meetings organized to fast track the Bill passing process.

Selected key speakers made three presentations to kick-start the interaction with the Minister. A total of 41 participants were involved in the meeting.

Group Photo with the Minister, ABNE Director and some of the participants

Impact of ABNE activities in Uganda

The activities ABNE has supported for Uganda are summarized in the table below:

Table 17: Summary of ABNE activities for Uganda

Activity	Venue and Date	Numbers Benefited
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 causes (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, 14th-17th 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 28th -29th 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, 13th-17th 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 2nd 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 , 26th – 28th September 2016	3
Total		**165**

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Zambia

The National Biosafety Authority (NBA) of Zambia continued the review of the Biosafety Act of 2007 to address stakeholders' demand for a more workable law. Stakeholders had requested for a review of the biosafety law and regulations to reflect national interest and stakeholder expectations of a law that provides an adequate level of safety while enabling access to the technology in a manner that contributes to the socio-economic development agenda of the country. In 2015, the Board of the NBA and the Scientific Advisory Committee (SAC), with technical support from ABNE commenced the law review process and conducted consultative stakeholder meetings for inputs.

Through 2016, the Board of the NBA and the SAC continued to review the biosafety law but progress was unduly slow due to institutional challenges. A major drawback for the review process was the unforeseen unavailability of lawyers who previously had had their capacity strengthened in biosafety issues for the purposes of assisting the legal review. In 2016, the Board dedicated quality time to the review of proposed amendments to the law but concluded that some key issues required additional deliberations to ensure that they were aligned in terms of content and scope to current developments in managing modern biotechnology and also to ensure consistency with domestic laws and international obligations and before any considerations for submission to and adoption by government.

To enable conduct of experimental research at the laboratory and field trial levels, the NBA and the SAC worked on statutory instruments (S.I.) that would permit such biosafety activities. These statutory instruments are ready for final consideration and endorsement by the Board of National Biosafety Authority and subsequent adoption by government.

ABNE continued in 2016 to provide technical support to the NBA in matters pertaining to the establishment of a quality management system to help ensure timely, accurate and consistent implementation of day-to-day functions and also to preserve institutional memory and keep to the minimum, disruptions arising from staff turnovers.

ABNE's biosafety capacity building activities in Zambia

Prior to Zambia becoming a focus country for ABNE's intervention in 2015, some regulators and policy makers had benefitted from regulatory study tour visits to Kenya and South Africa in 2012. Subsequently, ABNE has offered biosafety training on a range of issues including biotech/biosafety policy and regulations; food safety; environmental safety; socio-economic considerations in biosafety; and biosafety communication to staff of the National Biosafety Authority and its Board, and to the members of the Scientific Advisory Committee (Table 18).

Table 18: Summary of ABNE activities for Zambia

Activity	Venue and Date	Numbers Benefited
Regulatory study tour	South Africa, May 2012	1
Zambia Regulators Exchange Visit to	Kenya, July 2012	##

the National Biosafety Authority of Kenya		
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
TOTAL		**81**

Impact of ABNE activities in Zambia in 2015 – 2016

Stakeholders indicated having had a better appreciation of issues pertaining to regulatory processes and their role in the effective regulation of GMOs after participating in review meetings. The consensus was to work towards increased functionality of the biosafety regulatory system by reviewing the current regulations to make for more workable provisions. This would be a domestically led process that would involve national experts and with technical support from ABNE. Participants also indicated a lot of the previously held myths and misperceptions had been satisfactorily clarified. Representatives from some key sector ministries who held certain biases based on limited information or misinformation stated that they now would regulate the technology with an objective mind devoid of prejudices.

Group photo of the first biosafety workshop in Lusaka in February, 2015

Future capacity building efforts

Completion of the law review process remains the topmost priority for 2017. Following a formal request by Zambia, further support is planned for the National Biosafety Authority (NBA) of Zambia in this regard. The NBA also indicated an urgent need for biosafety communication capacity strengthening to enable the Authority effectively engage in public awareness creation, education and consultations. The new staff members of the NBA will also be considered for technical assistance programmes through internships in more advanced regulatory systems and participation in biosafety short courses at Michigan State University to enhance their competencies in administrative handling of applications and biosafety decision-making. A study tour to India and Bangladesh for key decision makers is also planned to improve cooperation between the NBA and key stakeholder government institutions. All these interventions would be supported by effective post-training support and follow-up programmes.

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The WAEMU & ECOWAS harmonized biosafety framework

Process in good progress

The West Africa regional economic bodies namely the West Africa Economic and Monetary Union (WAEMU, 8 member states) and the Economic Community of West Africa States (ECOWAS, 15 member states including those of WAEMU, representing 350 millions people) together with the Permanent Interstates Committee for Drought Controle in the Sahel (*Le Comité Permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel (CILSS,* 13 Members states) started in 2007 to join forces in developing a regional harmonised biosafety framework.

The Biosafety Unit of WAEMU is driving the process through a project funded by the World Bank.

The harmonised framework is legally binding and will apply to all WAEMU and ECOWAS member states once adopted by the two institutions. This is unlike the regional biosafety policy framework of the Eastern and Southern Africa (COMESA) which shows flexibility by focusing on policies and guidelines while providing opinion to national biosafety bodies.
In focusing on regulations, the West African biosafety framework holds a high potential to impact on national decisions and if properly harmonized will be of great benefit to the sub-region.

In February 2015 an important milestone of the process was achieved through the member states' ministers meeting in Ouagadougou which made substantial modification to the draft that was developed by WAEMU. The meeting changed the decision making process to a country-based decision instead of WAEMU being responsible for making decision on GMOs as it was proposed in the draft. Another Experts' meeting was held in Abidjan in July 2015 to discuss implementing regulations.

The draft framework has made provision for a total of thirty implementing regulations. Twenty of them have been developed through a consultancy service offered by Burkina Faso biosafety experts.

The next steps will be to review the draft framework and make sure it is properly aligned with the implementing regulations, and also complete with the remaining regulations.

Until now, ABNE was not fully and officially involved in the process though the NEPAD-Agency CEO raised the issue with the President of WAEMU last year. We only could work to empower individual countries' delegates for meaningful participation to the various meetings. The argument from WAEMU's side has been that ABNE is not considered a participating stakeholder to this process.

Very recently, in October 2016, the Coordinator of the Biosafety Unit in WAEMU held a discussion with ABNE Director, requesting for a support to complete the process.

ABNE future efforts

Based on the recent discussions with the coordinator of the WAEMU Biosafety Unit, ABNE would focus it interventions on the following two points:

- Provide support for consultancy to develop the ten remaining implementing regulations
- Provide support to organise a regional consultative meeting to validate all the implementing regulations

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ABNE in Africa

Towards Building Functional Biosafety Systems in Africa