







Towards Building Functional Biosafety Systems in Africa



African Biosafety Network of Expertise (ABNE)









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Building Functional Biosafety Systems in Africa

NEPAD Agency ABNE Director's Introductory Remarks

Partners and friends in biosafety regulation and policy making in Africa, I bring you warm greetings from sunny Ouagadougou. It is fulfilling to note that, despite sustained misinformation campaigns across the continent, our collective and consolidated efforts at ensuring sound and effective regulatory regimes for the safe management of biotechnology across Africa based on science is on course and gaining thrust. Tangible progress can been seen across the continent such as in the Republic of Benin where the moratorium has been lifted and efforts are underway to move forward, in Mozambique where biosafety decree was revised and accepted by the cabinet and the Presidency, Togo where the biosafety law is actively being revised; in Ethiopia where there is renewed momentum towards building a functional regulatory system, and in Ghana where the regulatory system has been empowered and is currently processing applications and monitoring on-going trials *inter alia* and in Nigeria and Uganda where frantic efforts are underway to pass their biosafety bills.

It is our conviction that our efforts will eventually culminate in economic empowerment for our farmers and in food security for the continent; a conviction shared by **H.E Dr. Nkosazana Dlamini Zuma**, the African Union Commission Chairperson who believes that "Africa's capacity to feed itself now and in the future requires increasing investments in climate change research, biotechnology research and development, and innovation". This promise feeds into our passion and drive to continue supporting our stakeholders. Mindful of the fact that capacity building can be a slow and lengthy process, we find strength in our conviction that our dear continent should never again be left out of the benefits of an emerging technological innovation just because it lacks the capacity to regulate it. And for this, we are prepared to double our efforts to ensure that any African nation that wishes to harness the enormous potential of biotechnology safely has adequate regulatory capacity to do so.

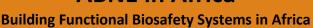
It has indeed been a fulfilling first phase of our intervention in Africa. As we bring this phase of our project to a successful end in December this year, we wish to sincerely thank you for your cooperation, collaboration and unprecedented support. Within these few years of our operations, ABNE has become a household name amongst you and we are grateful for the overwhelming trust you bestowed on us. We are mindful of the fact that we were unable to meet all of your demands. We assure you that this is not intentional but informed by resource limitations. The challenge ahead of us will require continued support and collaboration and more importantly, greater commitment of financial and non-financial resources from all stakeholders including national governments. This will greatly enhance the sustainability of our service delivery to you our esteemed stakeholders. Here's wishing you all season's greetings and we look forward to working with you in our Phase II commencing in January 2015.

Prof. Diran Makinde Director, ABNE November 2014









Burkina Faso

In 2014 for the 7th consecutive year the biosafety regulatory system in Burkina Faso has authorised commercial cultivation of Bt cotton. Last year a ten year authorisation starting from March 2013 was granted to allow farmers to continue harvesting Bollguard II cotton seeds. With these improved seeds, the country has become the largest cotton producer in Sub Saharan Africa, producing 750 000 tons of cotton seed in 2013 valued at around US\$24 million. In 2014 despite the late start of the rainy season, over 400, 000 ha were planted with Bt cotton.

Field trial of Roundup Ready Flex cotton is going on for the 4th year in 2014 while confined field trials of stacked genes containing insect resistance and herbicide tolerant cotton (Bollguard II X Roundup Ready Flex) have started.

On the regulatory capacity building, not much needed to be done in the country. No request of such was received from the National Agency. This has led ABNE to adjust its intervention and focus on the three following objectives:

- Make use of the country expertise where needed and possible to benefit to other countries
- Promote the country as a learning place for regulators from neighbouring countries' stakeholders and outside west Africa
- Assist partners and likeminded biosafety / biotech initiatives with their specific activities in the country, upon their own request

Make use of the country expertise to benefit other countries

- ABNE contributed in convincing the Hon. Minister of Scientific Research and Innovation of Burkina Faso to undertake a tour to West African countries in order to reach out to biosafety sector ministers in Ghana, Togo and Nigeria on the overarching issues posed by the joint WAEMU and ECOWAS regional biosafety draft act.
- ABNE nominated two Burkinabe experts including the Director of the Burkina Faso National Biosafety Agency as member of the technical expert group established by ABNE and ISAAA to develop a guidance document for the African group and to facilitate the discussions on the COP-MOP7 agenda items.













Mr Elie Sandwidi, a Burkinabe lawyer making a submission at the technical expert group's meeting, Nairobi, June 16, 2014

Table 1: Summary of ABNE capacity building activities for Burkina Faso Regulators and Stakeholders (July 2009 - December 2013)

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 2010	2
West Africa regional training workshop on coexistence	Burkina Faso, November 2010	60
E-Biosafety Programme	Italy and Burkina Faso, July 2011	1
Internship	South Africa, November 2010	1
Science Technology Communication short course	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







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		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
TOTAL		609

Assist other biotech/biosafety initiatives in the country

In July, ABNE partnered with Danforth Center and ICEGB to conduct a training program in Burkina Faso for regulators from Nigeria, Burkina Faso, Mali and Kenya involved in the GM mosquito program.

In August, ABNE was instrumental in assisting the US Embassy in Ouagadougou conduct an outreach program for journalists and farmers. The program took place in three different locations, Bobo-Dioulasso in the West, Ouagadougou in the Central region and Fada N'Gourma in the East. ABNE made technical presentations and offered radio and TV interviews in both French and local languages.

In September, ABNE again provided technical assistance to US Embassy to conduct a study tour to Bobo-Dioulasso for farmers from Togo and Ghana.

In addition to the above mentioned activities, ABNE conducted a study tour to South Africa that directly benefited to 4 sponsored Burkina regulators. Unfortunately one of them just resigned from ANB.







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Comment on the staff turn-over facing the Burkina Faso National Biosafety Agency

Over the past 8 years not less than 10 staff have resigned from ANB, and it is somewhat threatening to note that none of the staff that was involved in the passage of the Burkina Faso biosafety law in 2006 is still active within the national agency. Except the Director who came on board 6 years ago, the current staff are completely new with less than one or two year experience. This indeed puts a serious threat on the institutional memory and brings up the question of the relevance of a stand-alone biosafety body in our countries.

It is only only on October 22, 2014, that the Government of Burkina Faso, at its Cabinet meeting has officially adopted the key biosafety implementing regulations. Nine of them were passed to cover various subject matters ranging from the composition and functioning of the scientific advisory committee of the national biosafety observatory, to application fees and modalities for transport, storage, confinement, etc.

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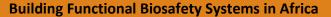
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NEPAD Agency ABNE has been engaged and closely following up the biosafety process in Ethiopia since the second half of 2012. An ABNE-MSU team in collaboration with the

Agricultural Transformation Agency of Ethiopia conducted an assessment of biotechnology and biosafety capacity in Ethiopia from December 1- 8, 2012. The assessment team came up with a set of recommendations that Ethiopia ought to undertake to make use of modern agricultural biotechnology for economic development. In line with these recommendations, by 2014, Ethiopia has taken positive measures towards building a functional biosafety system that would pave the way for testing and commercializing genetically modified crop varieties. The country has authorized the revision of its Biosafety Proclamation to make it workable. Indeed, the revised Biosafety Proclamation has already been approved by the Council of Ministers and is only awaiting parliamentary approval by the House of Peoples Representatives.

Following this progress, ABNE in collaboration with the Biosafety Focal Point at the Ministry of Environment and Forestry and the Ethiopian Institute of Agricultural Research conducted a national training workshop on "Basics of Building Functional Biosafety System in Ethiopia" from 8 - 10 October, 2014. The training



Ethiopia is gearing up to make use of Bt cotton to enhance the supply of raw materials for the fledgling textile industry. NEPAD Agency ABNE conducted a training workshop on building functional biosafety systems in Ethiopia (8-10 Oct. 2014)

workshop was aimed at giving an overview of agricultural biotechnology /biosafety to a broad range of stakeholders, followed by an initial broad training on biosafety application handling, risk assessment, risk management, inspection and compliance monitoring of confined field trials for prospective experts who are likely to serve in the national and institutional biosafety committees.

Sixty participants from diverse institutions including the Ministry of Environment and Forestry (national biosafety focal point), Ministry of Science and Technology, Ministry of Agriculture, Agricultural Research Institutes and Centres, Universities, Seed Agency, Cotton Producers, Ginners and Exporters Association, Textile Industry Development Institute, the House of Peoples Representatives (Parliament) attended this training workshop. The workshop created a renewed momentum and urgency for expedited assenting of the revised Biosafety Proclamation and the revision of implementing directives.

The training workshop catalyzed the ongoing positive national process in Ethiopia and further consolidated NEPAD Agency ABNE's position as an important partner in Ethiopia's efforts to embrace agricultural biotechnology in order to help meet the national CAADP objectives and the country's economic Growth and Transformation targets. Overall, ABNE's engagement in the country showed that Ethiopia has moved decisively to embrace GM crops to help boost agricultural production and enhance the supply of raw materials for the emerging agro-industries.







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- One regulator from the Ethiopian Ministry of Environment and Forestry attended a biotechnology/biosafety regulatory study tour to South Africa in June 2014.
- Three officials (two from the Ministry of Environment and Forestry and one from Ethiopian Institute of Agricultural Research) attended a biosafety short course conducted from 14-17 July 2014 at Makerere University in Kampala, Uganda.
- Two officials (from Ministry of Environment and Forestry and Ethiopian Institute of Agricultural Research) attended a one-week International Short Course on Environmental Biosafety of Agricultural Biotechnology from August 3 – 8, 2014 at MSU.
- One official from the Ethiopian Ministry of Science and Technology attended a two-week International Short Course on Agricultural Biotechnology from September 8 – 20, 2014 at MSU.

The ABNE-MSU assessment team with the staff of National Agricultural Biotechnology Laboratory at Holetta Agricultural Research Center, Ethiopia (December 2012).

Looking Ahead: Biosafety Needs and Gaps

Ethiopia has displayed quite a lot of political will to embrace biotechnology for economic development. However, the depth and breadth of biosafety services in Ethiopia remain wanting because of the country's long standing GMO-unfriendly political environment. This appears to have changed significantly in 2014. ABNE has started biosafety capacity development activities in the country but will need to deepen these efforts in 2015.

Importantly, with the recent openness of the country for GM crops, misinformation and distortion by opponents of GMOs has come on board. As a result, ABNE needs to integrate and scale up its capacity development endeavors on science-based biosafety information dissemination, education and awareness creation.

Table 2: 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









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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
Total		69

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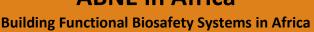
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Ghana

The Competent National Authority (CNA) for biosafety administration in Ghana continues to take bold steps towards completing the remaining administrative structures and finalizing legislations required for Ghana's regulatory framework to be fully established. However the process has been seemingly slow and has required a number of small steps aimed at a ensuring a robust regulatory system. It may be recalled that three years after the biosafety law was passed, it is yet to be operational due to the lack of regulations. In addition, Ghana has yet to establish its National Biosafety Authority (NBA) as provided for by the law. These two were the notable challenges faced by the Ghanaian regulatory system at the beginning of 2014. There were however some important milestones during the year towards addressing these challenges. First, the CNA is far advanced in the recruitment process for a chief executive officer (CEO) for the NBA and the composition and inauguration of the board of the NBA. Secondly, the draft implementing regulations were also finalized this year and submitted by the Attorney-General's department to the sector Minister for onward submission for consideration by cabinet and subsequently parliament later this year. Two high level visits made to MESTI by ABNE have been important in once again highlighting the significance of the legal and administrative frameworks and in re-focusing attention on these issues. ABNE has observed and can report continued and appreciable political will and commitment in Ghana among government leaders, policy makers and legislators.

Status of Confined Field Trials and Multi-Location Trials in Ghana

In May 2014, the Savanna Agriculture Research Institute (SARI) submitted an application for confined trials of Round-up ready (herbicide tolerant) cotton and the stack of round-up ready and bollguard (*Bt*) cotton. A multi-location trial of the latter was recently concluded by the same institute. This brings to six (6) the number of applications received, processed and approved for confined use in Ghana from 2012 to 2014. It may be recalled that in 2012 and early 2013, three (3) CFT applications (Insect resistance cowpea, High protein Sweet Potato and N-use efficiency, Water –use efficiency, Salt Tolerant (NEWEST) Rice) and a multi-locational trial of Bt Cotton were reviewed and approved by the National Biosafety Committee (NBC) to commence in the 2013 planting season. See summary in **table 3** below:

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









Bt (Maruca resistant) Cowpea	Savanna Agricultural Research Institute (SARI)	Confined Field Trials	On-going
Bt Cotton	Savanna Agricultural Research Institute (SARI)	Multi-location trial	Trial harvested, post- harvest monitoring on-going
High protein sweet potato	Crop Research Institute (CRI)	Confined field trials	Yet to commence

Table 3: Status of CFTs and MLTs in Ghana

Currently, the two cotton trials approved in 2014 are underway at various research stations in SARI.



CFT of Herbicide tolerant Cotton at Nyamkpala Trial site (CSIR-SARI)

Crop Research Institute (CRI) has commenced also the third phase of the NEWEST rice which trial also commenced in 2013.The current trial is continuation of the Nitrogen Use Efficiency (NUE). Preparations are underway to commence the Water-Use Efficiency (WUE) after this trial ends. The final phase will involve the triple

stack traits of Nitrogen use efficiency (NUE), Water use efficiency (WUE) and Salt tolerance (ST).

ABNE Biosafety Capacity Building Interventions in Ghana

ABNE continues to partner with the CNA and sister biosafety initiatives to build the administrative and regulatory capacities of stakeholders in Ghana. This year, a lot of focus was given stakeholder sensitization in response to rising misinformation in the country championed by anti-technology activists. This notwithstanding, regulators and regulatory agencies were also supported under various capacity building platforms. Regulatory agencies continue to gradually build a critical mass of trained and competent human resources for administering biosafety 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 logistical support to make the Biosafety secretariat functional, b) Human







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resources capacity building, and c) Provision of technical assistance and expertise. Three strategic goals drove our activities in Ghana in 2013. They include;

- i. creation of an enabling policy, legal and institutional environment for biosafety regulation,
- ii. empowering a critical mass of regulators with improved competencies to administer the biosafety regulatory regime
- iii. enhancing biosafety communication to promote general biosafety awareness and public participation in Ghana

These strategic directions proved impactful and underpinned ABNE's intervention in Ghana in 2014.

ABNE's target in Ghana has been technical and regulatory officials of the CNAs. However, in 2014, following an in-country issues sensing, ABNE felt the need to slightly expand this target to include other non-target constituents like the media and farmers which happen to wield considerable influence on issues of biosafety.

ABNE undertook a number of capacity building activities in Ghana in the year under review. These are summarized in table 4 below. In all, a total of 99 regulators, policy makers and other stakeholders were empowered in Ghana in 2014 through ABNE's training and education platforms such as workshops, internships and study tours, and biosafety short-courses. This brings to 428 the total number stakeholders reached from 2010 - 2014. In addition, regulators were empowered to effectively access biosafety ABNE web resources available on portal and biosafety/biotechnology information sources on the internet. ABNE has maintained 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.

Impact of ABNE activities in Ghana in 2014

In addition to the important milestones towards establishing administrative structures and finalizing the biosafety regulations of Ghana, there were other important impacts of ABNE's interventions in 2014. *Two additional GM events approved for confined trial under the technical guidance of ABNE.* The National Biosafety Committee (NBC) and its Technical Advisory Committee (TAC) were empowered to successfully review and make a determination on a Bt x RR cotton stack application submitted by SARI for confined field.

This particular trial was special because it was the first stacked event ever to be approved by the Ghanaian regulators. In addition, a number of stakeholders were sensitized including policy makers, media, farmers, etc. The sensitization of these stakeholders is gradually improving biosafety and biotechnology discussion and reportage in Ghana. Regulators are also gradually gaining confidence under the guidance of ABNE having successfully administered six applications till date.



A section of media in a hands-on exercise of DNA extraction during a sensitization workshop in Kumasi









Activity	Venue and Date	Numbers Benefited
Training workshop on biosafety decision-making	Ghana, March 2010	40
Environmental biosafety short course	Michigan State University – USA, July 2010 and August 2012	3
Food safety short course	Michigan State University – USA, August 2010	1
Internship	South Africa, November – December 2010 and May 2012	3
Study tour	South Africa, November – December 2010 and May 2012	4
Study tour	India, December 2010	1
Training workshop on administrative handling of biosafety applications and operating a functional biosafety secretariat	Ghana, November 2010	27
Sensitization workshop for Members of Parliament in Ghana on the Biosafety Bill	Ghana, 22 January 2011	40
Training to strengthen regulatory capacity for application review, decision making and compliance	Ghana, January, 2012	31
Training to strengthen biosafety communication capacity	Ghana, August 2012	25
Technical guidance for risk assessment review of applications for confined field trials for Maruca-resistant cowpea; protein-enriched sweet potato; and nitrogenuse efficiency, water-use efficiency and salt-tolerant rice (NEWEST) in Ghana	Ghana, August 2012	30
Preparatory meeting on multi-location trial of GE crops in Ghana; Case of Bt cotton	Ghana, April 2013	12
Technical support for application review of multi-location trials of Bt cotton in Ghana	Ghana, April 2013	27
Technical support for decision making on multi- locational trials in Ghana (case of Bt cotton)	Ghana, May 2013	15
Strengthening regulatory capacity of inspectors for inspection, monitoring and compliance of single cite/multi-locational trials in Ghana	Ghana, June 2013	30
Training to strengthen regulatory capacity of Institutional Biosafety Committees (IBCs) in Ghana	Ghana, July 2013	20
Biosafety for lawyers short course	Michigan State University – USA, July – August 2013	1
Follow-up and technical support for the drafting of a biosafety communication strategy	Ghana, May 2013	13
Training of Trainers (ToT) programme	Michigan State University – USA, May 2013	2
Regulatory study tour	India, October, 2013	1
International training programme on biosafety for African regulators, policy, and decision makers	Polytechnic University of Bobo- Dioulasso – Burkina Faso, November 2013	3
Regional food/feed safety workshop	Accra, Ghana	11









Follow-up (refresher) training workshops on dossier evaluation/risk assessment and biosafety decision making on applications for field testing of GMOs	Accra, Ghana	26
Workshop to strengthen biosafety awareness of selected stakeholders in Accra, Ghana	Accra, Ghana	32
Workshop to strengthen biosafety awareness of selected stakeholders in the northern sector, Ghana	Kumasi, Ghana	26
Participation in Biotechnology Short-course in Michigan State University	Lansing, Michigan	1
High level tour of CFT sites in Tamale	Tamale, Ghana	3
TOTAL		428

2015 in focus; Future Capacity Building Efforts

ABNE's focus in 2015 will be i) to prepare the regulatory system in Ghana for administrative and technical handling of applications for general releases and ii) to assist the competent authority in effective biosafety communication and stakeholder sensitization. Through ABNE's capacity building platforms, Ghanaian regulators will be assisted to build enough capacity and confidence for review and decision making on GMOs for general release and post-release monitoring where necessary. The NBA and its board members will be trained and supported for effective biosafety administration and decision making. There will be institution-specific training for all institutions identified by the Biosafety law of Ghana to prep them for their individual and collective roles in biosafety administration in Ghana. In line with this, the competent national authority will be supported to institute and implement mechanisms for inter-institutional collaborations.

The competent authority has also requested ABNE's assistance in strengthening biosafety awareness in the country. In line with this, ABNE will in 2015 work closely with MESTI to prioritize and effectively implement biosafety communication. ABNE will aim to assist Ghana develop capacity for proactive issue sensing, effective communication on biosafety issues and efficient stakeholder involvement in biosafety administration. This would require broaden and multi-prong approach to stakeholders' sensitization on biosafety issues involving as many stakeholders as will be necessary for smooth functioning. The competent authority will be supported to effectively coordinate and efficiently implement Ghana's biosafety communication strategy.

ABNE will re-assess Ghana's capacity gap and design tailored interventions in a quest to give the Ghanaian regulatory system the final push towards completeness in 2015. The strategy is to build on prior progress. ABNE will continue to provide technical expertise (based on our rich African experience) and support to regulators in Ghana through delivery platforms such as workshops, short-courses, internships and study tours. We acknowledge that it takes multiple trainings to reach the requisite level of competence and confidence required by regulators. To ensure sustainability, ABNE will finalize all arrangements with the University of Ghana to host the maiden biosafety short-course for Anglophone West-Africa. This is part of efforts to institutionalize biosafety training in universities across Africa.







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Kenya

Following the enactment of the Biosafety Act in 2009 and the implementing regulations later in the year 2011, as legal framework necessary to regulate agricultural biotechnology, all efforts thereafter were directed to preparing the country towards receiving its first commercial release of GM product. But this wait has been prolonged as towards the end the year 2012, a Government Minister through the council of Ministers pronounced a ban on the importation of GMO food products into in the country. The reason behind the ban at the time was driven by a paper released by Seralini claiming GMO foods were a cause of cancer. But since his findings were found to be incorrect, the paper has been withdrawn. But the ban has not yet been lifted.

Following the above developments, the Government of Kenya appointed a committee with the role to collate information and advise the Government on lifting the ban. ABNE has continued to work closely with other partners such as PBS, ABSF, and ISAAA to monitor the progress in lifting the GMO importation ban in Kenya.

In the year 2013, when the National Biosafety Authority Board of Kenya was reconstituted thus bringing new members aboard, ABNE continued with its programmes of building and enhancing the capacities of Kenyan regulators. ABNE has also worked closely with other stakeholders both in the country and Sub-region in developing the Biosafety communication strategies in the country. This contact with the National Biosafety Authority (NBA) has been



Study tour to South Africa in June 2014

promising as it has witnessed Kenyan regulators benefit from ABNE organized trainings and study tours on the continent and as well benefit from trainings organized together with other partners.

Early this year 2014, ABNE partnered with, ICGEB and PBS to train African biosafety lawyers in Cape Town, South Africa.







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Five Kenyan lawyers were part of this training which was aimed at widening the scope of lawyers understanding of the biotechnology, its regulations and possible scenarios of court cases.

Later in the same year still, ABNE under the auspices of the NEPAD planning and Coordinating Agency (NPCA) and in partnership with the Southern Africa Network for Biosciences (SANBio) led ten regulators and policy makers from the African countries for a study tour to South Africa. This tour was a success as these policy makers and regulators got the opportunity to directly interact with their peers and industry practitioners in South Africa. In September 2014, Kenyan regulators were part of the ABNE-MSU organized annual training in the Michigan State University.



Study tour to South Africa; visit to a Biotech Laboratory, June 2014

ABNE biosafety capacity building activities in Kenya

A summary of ABNE's biosafety capacity building activities in Kenya is presented in table 5.

Table 5: Summary of ABNE Activities for Kenya

Activity	Venue and Date	Number s Benefite d
Workshop on risk assessment, risk management, and decision making processes for Kenyan regulators	Kenya, July 2010	35
Training workshop on biosafety regulatory processes in agricultural biotechnology for the National Biosafety Authority	Kenya, April 2011	17
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	12
Regulatory study tours	South Africa, November 2010; February 2012	4
Strengthening biosafety communication capacity	Kenya, September 2012	22









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of the Board of the National Biosafety Authority		
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	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	5
Biosafety study tour to South Africa	Pretoria, June 2014	1
Biosafety Short Course	Makerere University, Kampala Uganda 14 th -17 th July 2014	3
International Short Course on Environmental Biosafety of Agricultural Biotechnology	Michigan State University, August 3 – 8, 2014	2
TOTAL		143

Future Areas of Capacity Building

- 1. ABNE will continue to provide support inform of Technical backstopping towards the review on the GMO ban in Kenya.
- 2. ABNE will continue working with its partners in order to achieve this goal. ABNE will continue to provide technical assistance to the NBA (Bio-safety secretariat) for functionality and will follow up training on commercialization of GMOs in Kenya.
- 3. ABNE aims at conducting a GM crop environmental risk management strategy training workshop.
- 4. Provide Technical support for the finalization of the development of national Biosafety communication strategy.

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Malawi

In 2009, Lilongwe University of Agriculture and Natural Resources (LUANAR) at Bunda submitted applications to the Biosafety Registrar for confined field trials of insect resistant and herbicide tolerant cotton. In January 4, 2013, Malawi commenced Bt cotton CFT at Bunda, LUANAR.

ABNE has conducted a number of capacity building activities in Malawi since 2010 (Table 6). In the year 2013, two major biosafety capacity building activities were conducted in the country. From 26-28 February 2013, regulators and scientists received training on CFT monitoring, inspection and compliance. From 9-11 July 2013, a forum for Malawian National Biosafety Regulatory Committee was convened in Lilongwe in order to review regulatory progress on Bt cotton CFT and to train the regulators in the area of biosafety communication. The events have enhanced the capacity of the NBRC in broad areas of biosafety administration and that of scientists in CFT implementation.

Malawi has continued showing the promise of building a functional biosafety system in 2014. The country has conducted Bt cotton multi-location trials at five sites which included Bunda College, Salima, Balaka, Zomba and Chikhwawa districts.



Training workshop on regulatory handling of GM crop multi-location trials (19-20 March, 2014)

From 19-20 March 2014, ABNE conducted a biosafety training workshop for members of Malawian National Biosafety Regulatory Committee (NBRC) to further enhance skills of the



A Confinement test site at Bunda, Lilongwe University of Agriculture and Natural Resources

NBRC members in the overall regulatory handling of applications, risk assessment, inspection and compliance monitoring of multilocation trials and to share practical biosafety regulatory experiences from other African countries focusing on regulatory aspects of Bt cotton multi-location testing and commercialization in Burkina Faso and Ghana.

Overall, twenty-four regulators from Malawian national biosafety regulatory body received valuable training on biosafety administration and regulatory handling of GM crop multi-location trials (applications, inspection and compliance

monitoring). Importantly, the regulators acquired valuable insights on what to expect as they look forward to handling possible applications for general release of Bt cotton in Malawi.







Building Functional Biosafety Systems in Africa

In 2014, to enhance the functionality of the biosafety office within the Environmental Affairs Department, ABNE provided technical assistance which included two lap top computers, a desk top computer, a multi-purpose printer, a UPS, two executive desks, two swivel chairs and two filing cabinets.

Noting the importance of periodic engagement and dialogue with high level officials in the ABNE focus countries, NEPAD Agency ABNE paid a high level biosafety policy dialogue visit to Malawi from 7-8 August, 2014. The visit involved interactions with a broad range of stakeholders and included a visit to the office of Permanent Secretary of the Ministry of Natural Resources, Mining and Energy, the Ministry of Science and Technology, Environmental Affairs Department, National Biosafety Regulatory Committee, Department of Agricultural Research Service of the Ministry of Agriculture and Lilongwe University of Agriculture and Natural Resources (LUANR). At LUNAR, visit was made to a Bt cotton CFT at Bunda College.



Inspectors and trial managers at a Bt cotton CFT at Bunda, Lilongwe University of Agriculture and Natural resources

By and large, it was evident that bringing on board some of the important stakeholders such as the Ministry of Agriculture in NEPAD Agency ABNE's biosafety capacity building programs including study tours was important. In addition, enhancement of biosafety communication and public awareness creation was underlined as areas of future action for the ABNE.

Short courses and study tours abroad for Malawian Regulators in 2014

- One regulator attended a biotechnology/biosafety regulatory study tour to South Africa in June 2014.
- Three officials of the Malawian National Biosafety Regulatory Committee attended a biosafety short course conducted from 14-17 July 2014 at Makerere University in Kampala, Uganda.
- One staff member of the Environmental Affairs Department attended a one-week International Short Course on Environmental Biosafety of Agricultural Biotechnology from August 3-8, 2014 at MSU.
- Two members of the Malawian National Biosafety Regulatory Committee attended a two-week International Short Course on Agricultural Biotechnology from September 8-20, 2014 at MSU

Looking Ahead: Biosafety Needs and Gaps











technical Handing assistance items for the the biosafety office of Environmental **Affairs** Department

Malawi has made significant progress in building workable policies and regulations. The country has also acquired experience in testing a genetically modified crop variety, namely Bt cotton. Malawi is preparing to undertake a CFT on cowpea - the first GM food crop to be tested in the country. Successful conduct of this food crop CFT and onfarm testing and commercialization of Bt cotton in the country requires a renewed engagement and regulatory support for the country to make economic benefit from investments made so far.

It is important to note that with these apparent progresses made, the usual misinformation and distortion activities of anti-GMO elements have grown considerably in recent months. To counter this imminent challenge, ABNE along with other noted the importance has biosafety communication strengthening 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. ABNE will pursue this activity with a renewed strength in 2015.

Table 6: 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 – 30July 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	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







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Michigan State University, Biosafety and Biotechnology for Lawyers 1 July 28 - August 2, 2013 Training workshop on regulatory handling Pacific Hotel, Lilongwe, 24 of GM crop multi-location trials Malawi, 19-20 March, 2014 Regulatory study tour South Africa, June 4 – 11, 1 2014 Biosafety short course Makerere University, 3 Uganda, 14-17 July 2014 International Course 1 Short Michigan State University, on Environmental Biosafety of Agricultural August 3 – 8, 2014 Biotechnology International Short Course on Agricultural Michigan State University, 2 Biotechnology September 8 – 20, 2014

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Mali

Despite the fact that the Mali biosafety law has been diagnosed with investor-unfriendly clauses and other issues that make it unworkable, the Ministry of Environment with the support of the OBAMA Project has recently organised a stakeholders' meeting to validate two implementing regulations for confined field trials.

ABNE is still being requested by both the farmers 'union and the NBC to conduct training on the basics of confined field trials. Despite our efforts to explain the overall process, Malian farmers still believe that ABNE only detains the key of an immediate access to Bt cotton seeds.

Based on this demand, ABNE has planned to conduct the workshop and use it as a platform to again stress on the issues contained in the law and the need to revise it. Mali is also part of the GM mosquito project together with Kenya, Uganda and Burkina Faso and the potential applicants have also identified the following issues in the Mali regulations: 1) the National Biosafety Committee is impossibly large, making it difficult to make timely decisions, 2) the liability and redress provisions will be very inhibitory to our project, once we reach the field stage, and 3) the considerations for risk assessment are also problematic, It is not clear whether all these issues have to be explicitly addressed in a risk assessment submitted with any application, or only the relevant ones.

ABNE still expects to conduct the scheduled workshop in Mali before the end of the year.

Table 7: Summary of ABNE capacity building activities for Mali regulators and stakeholders (July 2009 – September 2011)

Activity	Venue and Date	Numbers Benefited
Training workshop on Agricultural Biotechnology	Senegal, July 2009	2
ABNE Regulators and Scientists Forum	Burkina Faso, April 2010	2
Training workshop	Burkina Faso, November 2010	6
Information sharing workshop and reflection on Malian biosafety regime	Mali, July 2011	60
Biosafety short course	Michigan State University – USA, August 2011	1
Farmers' Day: farmers' experience sharing on agricultural biotechnology (jointly organized by Africa Harvest and ABNE	Burkina Faso, December 2011	5
ABNE biotechnology and Biosafety study tour programmes	South Africa, May 2012	1
ABNE training workshop on IBCs	Togo, July 2013	2
Sensitization workshop on the key issues contained in the ECOWAS –CILSS-WAEMU regional draft biosafety framework	Togo, October 2013	1
International training programmes on biosafety for African regulators, policy, and decision makers	Polytechnic University of Bobo-Dioulasso – Burkina	2









Building Functional Biosafety Systems in Africa

	Faso, November 2013	
TOTAL		82

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Building Functional Biosafety Systems in Africa

Mozambique

The government of Mozambique acknowledges the contribution that modern biotechnology can make to meet critical needs for food and nutritional security. At the same time, the government

also recognizes that the development of modern biotechnology must go hand-in-hand with appropriate regulations in order to maximize the benefits while minimizing risks. The government has positive steps towards achieving this goal, including: i) the ratification of the Cartagena Protocol on Biosafety December 2001, ii) the establishment of an interinstitutional working group (GIIBS - Grupo Inter- Institucional Sobre Bio-Segurança) in 2002 to serve as the National Biosafety Committee (NBC) followed by the designation of the Ministry of Science and Technology to serve as National Biosafety Authority, and iii) the drafting of biosafety regulations/guidelines in 2007.

Mozambique is part of the WEMA project, together with Kenya, Uganda, Tanzania and South Africa. Mock field trials were conducted in 2010 in Mozambique as part of the training programme offered by the WEMA team. Mozambique is also a cotton growing country and faces the same challenges posed by the need to control damaging pests as in many



A working visit by the Director and Agricultural Biosafety Programme Officer of ABNE to the Biosafety Focal office in Maputo in August 2014

other cotton producing countries. Yet, no application for the use of the new modern biotechnology tools has been submitted due to the lack of a workable regulatory process.

ABNE Support to the GIBBS in Mozambique

ABNE is engaged with the Government of Mozambique through the GIIBS to set up a fully functional biosafety system that would allow the country to efficiently regulate the use of



Handing over of office supplies to the Honorable Minister of Science and Technology of Mozambique for the secretariat of GIIBS, Maputo, May 2011

agricultural biotechnology towards meeting the current challenges. Table 8 summarizes the ABNE capacity building activities that were carried out for Mozambican regulators from December 2009 to October 2014. Around 57 Mozambican regulators have directly benefited from these ABNE training activities. In addition to this, in May 2011, ABNE provided GIBBS with office supplies in order to facilitate the functioning of the biosafety secretariat, particularly to help with access to internet that would allow GIIBS members to benefit from the network.

Main Impact of ABNE interventions in Mozambique

Acknowledging the relevance of ABNE capacity building programme in Mozambique and following the recommendations made at the workshop of May 2011, the Honorable Minister







Building Functional Biosafety Systems in Africa

for Science and Technology requested NEPAD Agency ABNE to assist the national regulatory body (GIBBS): 1) to review and revise the Biosafety Decree No 6/2007 in order to expand its scope to adequately cover R&D activities on GMOs in Mozambique and specifically align its content to reflect current developments in modern biotechnology and biosafety such as the recently adopted Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress, and 2) to review and help develop a final draft of Biosafety Regulations Implementing for consideration endorsement by the government of Mozambique as an official Ministerial document. Based on a MoU signed with GIBBS, ABNE provided consultancy support to develop a revised draft decree. This task was successfully completed and the final report was officially submitted to the Minister's office by the Director of ABNE in February 2012. The revised decree would then be approved by the ministerial council, so that the country could start confined field



ABNE and AATF signing a MoU to work together in building a functional biosafety system in Mozambique, Maputo May 2011

trials of Bt cotton and water efficient maize for Africa (WEMA) soon.

In 2014, two high level visits were made by NEPAD Agency ABNE and MSU team to encourage relevant Mozambican senior government officials to pass the revised biosafety decree. These efforts finally appear to have paid off. ABNE noted with appreciation the approval of the revised biosafety bill by the Government of Mozambique on 30 September 2014.



A follow up meeting between ABNE, AATF and the Hon. Minister for Science and Technology at the Minister's office, Maputo, August 2012

Looking ahead

ABNE together with its partners will follow up with the final assenting of the biosafety decree by the Mozambican Parliament. ABNE will backstop the development of implementing regulations, guidelines and SOPs.

It is expected that after the assenting of the revised biosafety bill, applications for CFTs of the water efficient maize and Bt cotton will be submitted to GIIBS. ABNE will then avail technical assistance to GIIBS to review the applications, and conduct inspections and monitor the CFTs.

As is elsewhere in Africa, misinformation and misperception about GMOs is widespread in Mozambique. To counter this, ABNE will assist the GIIBS in public education and awareness creation.

In addition, ABNE will continue supporting biosafety capacity building in Mozambique through in-country workshops, study tours and biosafety short courses in Africa and elsewhere.









Activity	Venue and date	Number of regulators / stakeholders empowered
International meeting in Ouagadougou	Ouagadougou, April 2010	1
Training workshop on CFTs	Maputo, March 2010	30
Environmental Biosafety Short	Michigan State University July	3
Science and Technology	Michigan State University, August	1
Study tour	South Africa, November 2010 and India, December	2
Technical assistance workshop on	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	1
Total		57

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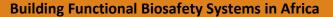
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A heightened sense of the need for a biosafety law for national development

Having administered biosafety within limited jurisdiction and noting the ramifications of the absence of a substantive biosafety law, strenuous efforts were made in 2014 by the Federal Ministry of Environment, the competent national authority for biosafety, and other stakeholders towards the enactment of the long overdue law. These efforts included public awareness and education campaigns and public consultations on the provisions of the biosafety bill. Stakeholders agreed that the biosafety bill was aligned to the national development agenda and that the law when enacted would enable Nigeria achieve socioeconomic goals such as assure safety to humans and the environment, ensure public confidence, facilitate research and development by both public and private institutions, promote investment in the subsector and protect rights of ownership. In 2014, the biosafety bill was debated and passed by the House of Representatives and is currently under final considerations by the Senate after which executive assent would be sought. This entirely domestically led process is to ensure that Nigeria can safely harness modern biotechnology for sustainable growth in agriculture, food security, and also improved livelihoods.



Senate public hearing in Abuja, in October 2014, on a bill for an act to establish the national biosafety management agency







Building Functional Biosafety Systems in Africa

ABNE's biosafety capacity building activities in Nigeria (2010 – 2014)

Towards ensuring an all-inclusive approach to the safe management of agricultural biotechnology, the government of Nigeria prioritized the creation of an enabling regulatory environment. This policy directive was to be pursued through domestic regulatory capacity strengthening and the continuous engagement with stakeholders through dialogue on biosafety issues. Recognizing ABNE's increasing and impactful role in biosafety capacity building in Africa, the Competent National Authority on Biosafety requested for ABNE's assistance.

Subsequently, ABNE has since 2010 adopted a multi-dimensional approach in assisting Nigeria to address biosafety capacity strengthening needs. The approach included a status assessment; building on prior progress and existing capacity through a demand-driven process; collaborating with other 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 changing and emerging 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 732 regulators, scientists, lawyers, farmers, the media, policy and decision makers directly benefiting from ABNE services (Table 9).



IBC training workshop in Abuja in April 2014







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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 South Africa and India; 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 9: Summary of ABNE activities for Nigeria

Activity	Venue and Date	Numbers Benefited
1. Creating an enabling legal environment		
Technical support for the development of implementing regulations	Nigeria, April, 2013; May, 2013	55
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
2. Building a critical mass of regulat	ors with enhanced competencies	es
International short course in environmental biosafety	Michigan State University (USA), July 2010; July – August 2011; August 2013; August 2014	8
Science and technology communication short course	Michigan State University (USA) August, 2011	1
Short course on biosafety for lawyers	Michigan State University (USA), July – August, 2013	1
International training programme on biosafety for African regulators, policy-, and decision-makers	Polytechnic University of Bobo- Dioulasso – Burkina Faso, November 2013	10
Masters e-biosafety course	Italy, January – December 2011 - 2014	2
Training workshop on CFT compliance and incountry study tour (included 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	8









Building Functional Biosafety Systems in Africa

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 communicat	ion 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
TOTAL		732

Impact of ABNE activities in Nigeria (2010 – 2014)

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 was observed in the following three areas of strategic thrusts.

1) Creating an enabling legal environment for biosafety regulation

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. While awaiting the enactment of the biosafety law, strategic guidance was provided during the review of various implementing regulations and guidelines towards operationalizing the biosafety law when eventually enacted. This resulted in more workable provisions. Four regulations were reviewed, i.e., regulations for contained use and confined field trials; commercial release; import, export and transit; and handling, transporting, packaging and labelling. Also reviewed and currently being redrafted were guidelines on socioeconomic considerations of GMOs. The review of the implementing regulations also afforded an opportunity to train lawyers involved in drafting legislation on biosafety issues and key considerations for workable implementing regulations.

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

The training workshops to strengthen regulatory capacity for biosafety compliance monitoring and inspections for ongoing confined field and multi-location trials, and the short courses at Michigan State University and the Polytechnic University of Bobo-Dioulasso for regulators, lawyers, policy- and decision-makers helped build a critical mass of regulators with expertise in the performance of mandated functions (see Table 9). This 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







Building Functional Biosafety Systems in Africa

well as their support for biosafety processes. Participation in the study tours enabled Nigerian regulators to build a network of regulators and practitioners that will facilitate continuous cross-learning and sharing of experiences and lessons.

Table 10: Status of CFTs and MLTs 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)	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	3 rd 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

3) Enhancing biosafety communication and cooperation

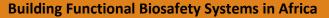
Technical support was provided in developing a national biosafety communication strategy. This communication plan will support the day-to-day communication activities of the Competent National Authority. It will also provide a platform for enhanced public understanding on issues of biosafety and improve public participation in biosafety decision-making and policy. The training for Institutional Biosafety Committees and ABNE's multistakeholder 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 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.









Future capacity building efforts

Noting the need to build on current gains, the Federal Ministry of Environment, the Competent National Authority (CNA) on Biosafety in Nigeria, has requested for further biosafety services from ABNE through 2015. Following a consultative needs assessment survey, ABNE envisages continual support to the CNA in the law enactment process and also in finalizing the regulations and guidelines to implement the biosafety law. Further technical assistance will be provided to the national biosafety secretariat for increased functionality in biosafety administration through an internship programme in a more advanced regulatory system. This will enhance competencies in administrative handling of applications and biosafety decision-making. Assistance has also been requested for the review of the biosafety decision document, IBC guidelines, and for developing additional standard operating procedures and guidelines on emergency response.

Another key area of support will be to provide further 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. A study tour to South America and in-country seminars on biosafety issues are planned for regulators, scientists, lawyers, farmers, and the media to improve understanding of biosafety and biotechnology management. Participation in biosafety short courses at Michigan State University and the University of Ghana in 2015 will also improve regulator's knowledge and understanding of biosafety and biotechnology.

Technical support will 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. Stakeholder fora are planned to serve as platforms 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.

Going forward into 2015, 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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Building Functional Biosafety Systems in Africa

Tanzania

The Director NEPAD Agency ABNE Prof. Diran Makinde together with the Kampala Nodal Coordinator, Dr Woldeyesus Sinebo visited Tanzania from July 31 to August 3, 2014 in a bid to get a better understanding of efforts being made in the country, progresses achieved so far and emerging needs in the country and charting future course of action.

In Tanzania, the mission team met with the Hon. Minister of Communication, Science and Technology and various officials including the State Minister for Finance (formerly State Minister for Agriculture), the Director of Environment at the Vice President's Office, the Director General of the Tanzanian Commission for Science and Technology, a Director at the Ministry of Agriculture and Chairman of Tanzanian Cotton Industry Development Association. The mission learned that Tanzanian Government has made tangible progresses paving the way for the revision of the Biosafety law. As an entry point, it became obvious that Tanzania has decided to test and commercialize non-food GM crops once the biosafety law is made workable.

In an OFAB organized forum for Tanzanian media house, the mission was able to make a presentation to more than 32 Tanzanian journalists on the role NEPAD Agency ABNE is playing in Africa to help build functional biosafety systems in African countries. The Director of NEPAD Agency ABNE conducted interviews with Tanzanian journalists, which was prominently featured in newspapers in the country. The participation in the OFAB organized forum was a good indication that NEPAD Agency ABNE continues to work with other partners on the continent in building Biosafety regulatory systems.

After the visit of the Director of ABNE, Mr. Sunday Akile, ABNE Programme Officer for Legal and Policy issues was in Tanzania for a weeklong training organized for regional regulators in partnership with ICGEB. He presented a paper to the participants on the importance of good regulatory interpretation by biosafety regulators. This training had participants from Ethiopia, Uganda and Tanzania. It was timely for the regulators especially those from Tanzania who are now debating about the amendment of their Biosafety legislation to create a workable framework.

Table 11: 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
	South Africa and Burkina Faso,	
Study tours and internship	February and November 2012	20
International Meetings	Various meetings	2
Collaboration Meeting with PBS	Tanzania, May 2013	27
Biosafety Short Course	Michigan State University-USA, August 2013	2
Biosafety training for African Lawyers	Cape Town, March 2014	5
Biosafety Short Course	Makerere University, Kampala, Uganda 14 th -17 th July 2014	
		3
High Level Meetings with Government officials	Dar-Salam, Tanzania July 2014	3
Meeting with Journalists	Dar-Salam, Tanzania, July 2014	3









Participation in the COP-MOP7	Pyeongchang, South Korea 29 th - 4tth September/October 2014	1
Total		82

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Building Functional Biosafety Systems in Africa

Togo

The target for Togo in 2014 was the adoption of the revised biosafety law. A key milestone towards this achievement was the stakeholders' meeting that was required to validate the revised bill drafted by a national consultant. ABNE provided the necessary technical and logistical support to organise this meeting from April 28-30, 2014 in Lomé.

The meeting gave opportunity to around sixty (60) stakeholders including government officials, scientists, lawyers, biosafety regulators, civil society representatives and Media professionals to thoroughly review the draft revised bill, make their input before it is validated and can be handed over to the sector Minister to be submitted to the ministerial council. This ensures full transparency of the process. It clearly appeared that there is a national interest and a common goal in building a workable regulatory system and that is why very few controversial views were expressed in the meeting.



Overview of one of the several working groups scrutinising the Togo revised daft law, Lomé April 28-30, 2014

Table 12: Summary of ABNE activities in Togo

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









Building Functional Biosafety Systems in Africa

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
TOTAL		182

According to ABNE external partners that are potential applicants, the Togo law if adopted, will make Togo the second country after Burkina Faso in Francophone West Africa with such a workable legal biosafety framework. This draft is already being used to inspire Ivorian stakeholders as they have started drafting their biosafety law.

Besides the meeting, the ABNE team was received by the newly appointed Minister of Environment, His Excellency Mr André Johnson. The Minister showed a strong commitment to providing Togo with a workable biosafety law. He thus urged his technical team to come up with a good revised draft text with sound implementable features.

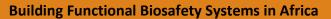
Following this meeting, potential applicants already showed interest in visiting Togo to discuss the next steps before submitting applications for Bt cotton. Togo farmers and other cotton sector stakeholders were then sponsored by the US Embassy and other partners to participate in a study tour in Bobo-Dioulasso in order to learn from the Burkina Faso experience.

Despite the efforts and commitments however, the bill may not be passed by the Parliament as expected before the end of this year. It has been lastly requested that a number of implementing regulations are drafted before the bill is tabled to the parliament. That work is currently going on and is in good progress.











ABNE team received by the Minister of Environment, Lomé, April 30, 2014

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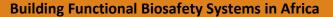
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Uganda

Uganda still continues to be in the lead in conducting 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, in collaboration with Makerere University, Uganda and Michigan State University, organized a Biosafety short course for African regulators in Kampala, Uganda, from July 14-17, 2014. Twenty-two regulators from Ethiopia, Kenya, Malawi, Mozambique, Tanzania, Uganda and Zimbabwe took part in this course. This was the second time ABNE organized such a high profile course in Africa after the one held at the Polytechnic University of Bobo-Dioulasso, Burkina Faso, in November 2013. The short course was officially opened by Prof. John O. Asibo, Guest of honor and Chairperson of the National Biosafety Committee in Uganda, in the presence of Prof. Diran Makinde, ABNE Director, Prof. Bernard Bashaasha, Principal of Makerere University College of Agricultural and Environmental Sciences and Prof. Rebecca Grumet from Michigan State University.



From left to right are: Prof. Rebecca Grumet, Prof. John O. Asibo, Prof. Diran Makinde and Prof. Bernard Bashaasha

Prof. Asibo was very candid about the importance for African countries having reliable systems to monitor developments in biotechnology to ensure successes in health, food security, biodiversity and trade. "There should be confidence in unanimous decision-making expertise guided by technical sub-committees and systems for the provision of information to and education of the public".









During the short course twenty three (23) topics were addressed which was an opportunity to keep participants abreast of the fundamental knowledge and the recent developments of Biotechnology and Biosafety in Africa and at the global level. Presentations focused on agricultural biotechnology and Biosafety, environmental Biosafety, food and feed safety aspects, commercial release, socio-economics, law and policy and Biosafety communication.

This short course was an opportunity for participants to share the lessons learnt in African countries with significant experience in agricultural biotechnology regulation such as Burkina Faso, Ghana, Uganda and Malawi. A field visit was organized for the participants to allow them see GM banana trials in the laboratory and confined field trials at Kawanda Research Centre, near Kampala.

At the closure of the course, the leadership of Makerere University of Uganda and NEPAD Agency- ABNE (Kampala node) conceived an idea working closely in future trainings and to actualize that vision, the parties have agreed to execute a memorandum of understanding for future Corporation. This is a testimony about the success the training in Kampala yielded besides equipping participants with knowledge in Biotechnology and Biosafety.

Since the establishment of the Kampala Node at the Uganda National Council for Science and Technology in June 2012, the Host Agreement between the Government of Uganda and NEPAD Agency- was never concluded. However tremendous success has been noted towards having the Host Agreement concluded as all is set for the signing by the Chief Executive Officer for NEPAD in Pretoria by the end of the year 2014.

This agreement will grant the Kampala Node freedom to operate with all privileges in discharging its roles and activities to Biosafety regulators both in the country and in African Union member states.

The slow process of having the Biotechnology and Biosafety Bill, 2012 passed into law has not slowed down activities of Biotechnology and Biosafety regulation in the country. At the moment the select committee of parliament on science and technology is receiving views from members of the public and it is hoped that the parliament will consider the Bill as one of the urgent items on its agenda for the next sitting as the Minister in charge after appearing before the committee made the position of Government clear on seeing the Bill off its way by passing it into law.

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

Table 13: 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, 14 th -17 th 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
Total		105

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Building Functional Biosafety Systems in Africa

Francophone Emerging Countries: Cameroon, Cote d'Ivoire, and Senegal

Over the past two years, ABNE has been facing a growing demand for biosafety services from African countries. Although the focus is on 10 selected priority countries, ABNE as an AU/NEPAD programme is not in a position to ignore the needs coming from other AU Member States. Thus Cameroon, Senegal and Cote d'Ivoire have been considered emerging countries and have started benefiting from ABNE services.

Cameroon

The Cameroon cotton company, Sodecoton, in partnership with BayerCrop Science, has started confined trials of Bt cotton four years ago. The process is now almost completed and needs to be taken to its next step of commercial cultivation. It seems however that the regulatory system lacks technical capacity and expertise to review commercial applications. At the last COP-MOP meeting in Pyeongchang, South Korea, ABNE team met with Cameroonian regulators and the potential applicant to discuss the needs. It was agreed that official requests will be submitted to ABNE so that a tailored need-based intervention programme for Cameroon can start from the first quarter of next year.

Senegal

Last year ABNE participated in a sensitization workshop organised in partnership with the USDA regional office in Dakar where we led the development of a roadmap designed to set up a functional regulatory system in Senegal. Implementing the same roadmap, the Government appointed in April 2014 a new CEO for the National Biosafety Authority.

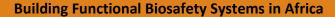


Prof Papa Dieng Meissa from Senegal (glasses), participating in the Technical expert group's meeting, Nairobi June 16, 2014









Establishing a functional biosafety system has now become part of the Government priority actions and the Head of State has tasked the National Scientific Academy members to develop a guidance document to inform the high level decision.

Based on this positive development, ABNE supported the participation of two regulators and resource persons to the COP-MOP7 preparatory meeting in Nairobi and to the meeting in Pyeongchang.

In addition, ABNE participated in the Biosafety Communication training workshop organised by the International Food Council (IFC) in Dakar in September 2014 that aimed at creating awareness among the national stakeholders as well as improving their communication skills with respect to biotechnology and biosafety.

Table 14: Summary of ABNE capacity building activities for Senegalese regulators and decision makers

Activity	Venue and Date	Numbers Benefited
Biotech workshop in Dakar in July 2009	Senegal, July 2009	70
Sensitization workshop	Senegal, September 2013	50
Sensitization workshop on the key issues contained in the ECOWAS –CILSS-WAEMU regional draft biosafety framework	Togo, October 2013	1
International training programme on biosafety for African regulators, policy, and decision makers	Polytechnic University of Bobo- Dioulasso – Burkina Faso, November 2013	2
TOTAL		123

Cote d'Ivoire

A draft decree on "the use of GMOs and derived products" has been developed jointly by several ministries including Ministry of Environment, Ministry of High Education and Research, Ministry of Agriculture, Ministry of Livestock, Ministry of Trade, Ministry of Health and Ministry of Forest Resources. The draft is currently being circulated for input before it can be submitted for adoption.

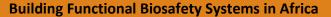
Following a recent exploratory visit in Cote d'Ivoire by ABNE partners that are potential applicants for Bt cotton, all conditions are currently in place for the country to quickly move forward. It clearly appears that the main stakeholders including farmers, cotton companies and scientists have exhibited a strong willingness to use genetically improved seeds. The Minister of agriculture is impatiently waiting the biosafety sector minister to come up with a workable regulatory framework. In response, the Minister of Environment has promised to complete the process before the end of this year.

It was strongly recommended to the biosafety sector Minister to liaise with ABNE for technical assistance and guidance in setting up the regulatory system. Official









correspondences may soon start between the two institutions so that Cote d'Ivoire could be considered within ABNE work plan starting from January 2015.

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Building a Regional Harmonized Biosafety Framework in West Africa

ECOWAS, WAEMU and CILSS, the three West African regional bodies, agreed some years ago to develop a harmonized biosafety framework to avoid adopting different biosafety regulations within the sub-region. A draft text was developed and is being examined.

In May 2013, ABNE was invited to be an observer for the first time at a technical meeting in Abuja together with other biosafety initiatives such as PBS. ABNE provided substantive technical input to the discussion. Nevertheless, the draft biosafety framework that was developed still remains too precautionary and may not create an enabling regulatory environment for the safe use of biotechnology applications within the West African subregion.

ABNE and other partners are of the view that this framework will certainly undermine efforts already invested at the country level within the sub-region. Hence, ABNE and its partners, especially PBS, undertook to educate and sensitize representatives from a number of



Francophone countries. namely Burkina Faso. Benin, Togo and Senegal, on the issues contained in the draft regional act. In line with this, a workshop was conducted in Lomé prepare the country representatives for the next meeting convened ECOWAS in October 2013. The workshop highlighted the issues related to the nature of the draft framework under









Building Functional Biosafety Systems in Africa

development, whether it is an act or a directive; the scope of the draft, whether it should or should not include the genetically engineered products thereof; the institutional arrangements; whether decisions over the use of biotechnology products are made at the regional or the country level; the socio economic aspects and (vi) the liability and redress regimes.

The draft framework is still under development and discussions are ongoing. ABNE and its partners remain committed to following the process and providing technical guidance and support as needed.

In 2014, ABNE contributed to organising a visit for the Hon. Minister of Scientific Research and Innovation of Burkina Faso to the ECOWAS neighbouring countries, namely Ghana, Togo and Nigeria to reach out to the ministers in charge of biosafety in their respective countries on the overarching issues of the joint regional biosafety draft act. As an outcome of this intervention, the draft was significantly improved and was scheduled to be adopted before the end of the year. However, due to the Ebola crisis, the momentum will certainly be slowed down.

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Building Functional Biosafety Systems in Africa









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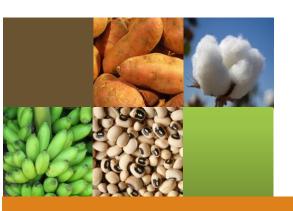
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ABNE in Africa

Towards Building Functional Biosafety