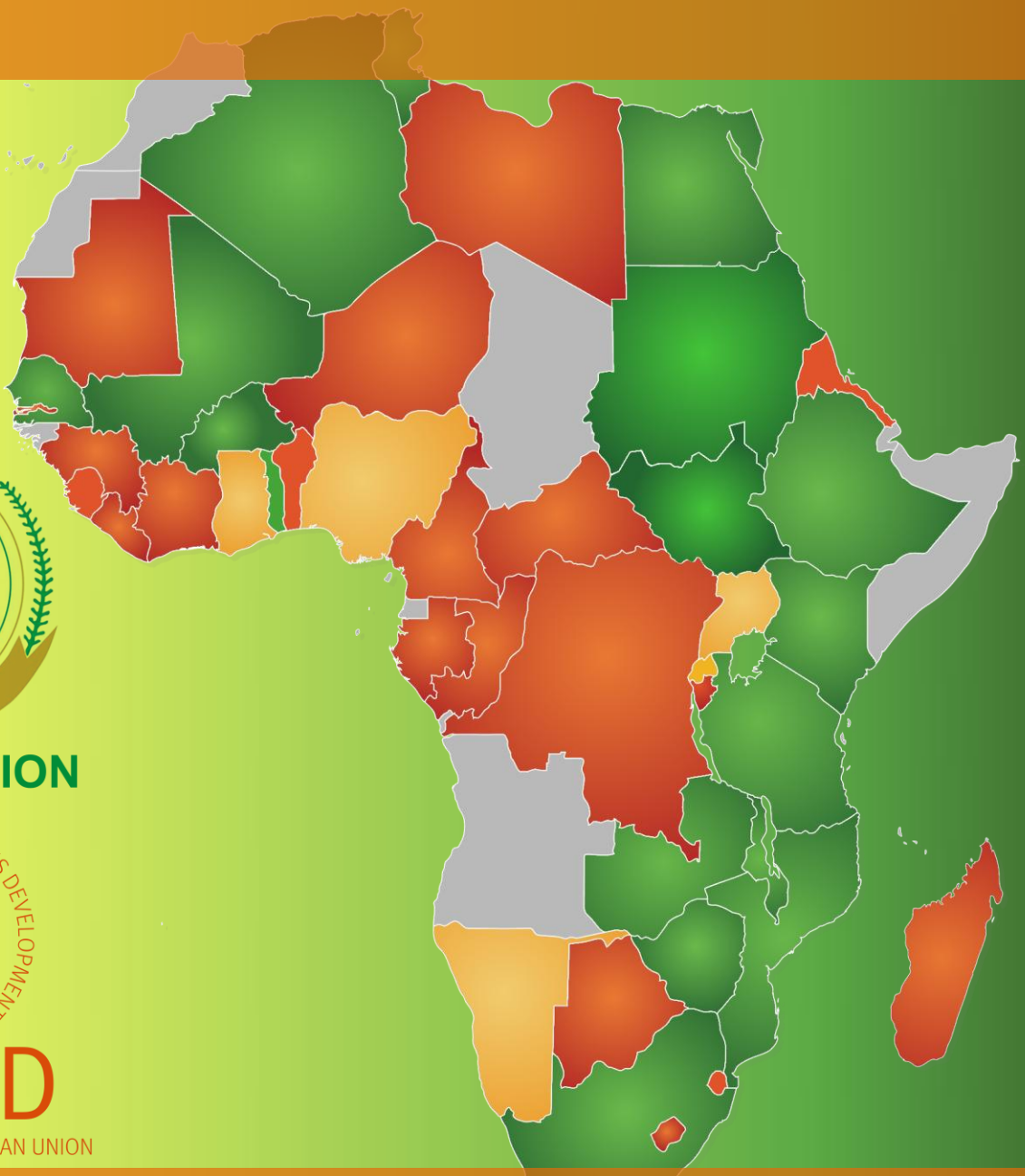
ABNE in Africa



AFRICAN UNION

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NEPAD

A PROGRAMME OF THE AFRICAN UNION

AU/NPCA African Biosafety Network of Expertise (ABNE)

Building Functional Biosafety Systems in Africa

January 2013

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ABNE in Africa

Building Functional Biosaftey Systems in Africa

NEPAD Agency ABNE Director's Introductory Remarks

Welcome to the second issue of the ***ABNE in Africa*** publication that highlights the activities/interventions of the African Biosafety Network of Expertise towards building a functional biosafety regulatory system in selected focus countries in Africa: Burkina Faso, Ghana, Kenya, Malawi, Mali, Mozambique, Nigeria, Tanzania, Togo and Uganda. These countries were selected based on a set of criteria such as technological readiness, political will, on-going biotechnology research and development (R&D), and whether national biosafety committees (NBCs) are receiving biosafety applications for permits. This publication will be regularly updated in keeping with the dynamic nature of this service network.

ABNE services include: information resources; training and education in the form of training workshops, short courses, online biosafety courses, internships and study tours; technical support and consultations; and networking and linkages. We are in partnerships and collaborate with other national, regional, and international bodies and programmes that have initiated various measures and processes to assist in the development of biosafety systems in Africa.

ABNE's approach to biosafety service delivery is based on building on prior progress and existing capacity, and is demand-driven and needs-based. It also provides generic services, in the form of information resources (access to the ABNE website, newsletters and news bulletins, policy briefs), connecting national systems to potential partners and service providers. These services are open to all African Union (AU) member states.

Although agriculture in Africa accounts for more than 25 per cent of the gross domestic product (GDP), 50 per cent of the export earnings, and employs about 75 per cent of the labour force, the adoption of sustainable agricultural technology has been slower than in other parts of the world. In addition, Africa, especially sub-Saharan Africa, has low agricultural productivity and therefore is a net importer of food. To address this problem, the NEPAD Planning and Coordinating Agency promoted the adoption of a framework for African agricultural productivity, the Comprehensive Africa Agricultural Development Programme (CAADP), premised on harnessing new science and technology in a scientifically sound and sustainable manner. Agricultural biotechnology was identified as a tool for increasing agricultural productivity while offering significant opportunities for attaining food security and poverty alleviation. Unfortunately this tool is been adopted very slowly

in Africa with few countries focusing on the benefits and the majority of the member states focusing on the potential risks.

The current scenario shows only 3 African countries (South Africa, Burkina Faso and Egypt) have commercialised genetically modified (GM) crops, while 19 countries have established biosafety regulatory systems, 4 countries are developing regulatory systems, 21 countries are a work in progress, and 10 have no National Biosafety Frameworks (NBFs). One of the reasons for slow adoption of biotechnology is the lack of functional regulatory systems, including inability to perform timely decision-making. Other factors include the absence of (or unworkable) national legislation, regulations, risk assessment policies or procedures; and inadequate capacity for implementing functional regulatory systems.

Currently, **seven** African countries (South Africa, Burkina Faso, Egypt, Kenya, Uganda, Nigeria and Malawi) are conducting field trials on locally-grown crops, including ***banana, cassava, cotton, cowpea, maize, sorghum, sweet potato, and sugar cane.*** Ghana has approved three confined field trials. These transgenic crops are being developed for farmer-oriented, consumer-oriented and processing traits. Farmer-oriented traits include resistance to insects and diseases; tolerance to herbicides, frost, drought and salinity; and improved agronomic performance including yield. Processing traits include altered oil, carbohydrate and protein content. Consumer-oriented traits include shelf life, flavour and nutrient enhancement.

This is a publication for decision makers, regulators, scientists and other biosafety service providers and stakeholders in Africa. It is aimed at facilitating inter-country collaboration, resource-sharing, experience-sharing and other collective efforts; reducing policy and regulatory hurdles; and assisting member states in meeting global, regional and national obligations, including having adequate regulatory preparedness to enable decision making and to deal with other biosafety challenges that may arise with the implementation of biotechnology.

Prof. Diran Makinde
Director, ABNE
January 9, 2013

ABNE in Africa - Biosafety Capacity Building in Burkina Faso

AU-NEPAD – African Biosafety Network of Expertise (ABNE)

With a functional biosafety system in place, Burkina Faso has approved the commercial release of Bt cotton in 2008 after completion of 6 years field trials. The country thus became the third country in Africa growing GM crops following South Africa and Egypt. In 2011, the adoption of Bt cotton approximates 60% with about 250000 hectares cultivated.

As of today, five (5) GM events have been approved in Burkina Faso, including insect resistant cotton (Bt) commercialized since 2008, herbicide tolerant cotton (Roundup Ready Flex) and insect resistant cowpea under trials; as well as a GM fungus (*Metarhizium robertsii)* tested with the aim of controlling the malaria mosquito, *Anopheles gambiae*.

Based on these performances and the efforts made by the government to make the best use of new agricultural technologies in such an exemplary responsible manner, the NEPAD Planning and Coordinating Agency, the technical arm of the African Union, signed in February 2010 an agreement with the Government of Burkina Faso to host the African Biosafety Network of Expertise (ABNE) which mission is to assist African countries build functional biosafety systems. The first node of ABNE was then established within the Campus of the University of Ouagadougou and was officially launched in April 2010.This agreement grants ABNE freedom to operate with all the privileges and benefits, allowing for all relevant activities to be undertaken towards empowering regulators and regulatory systems in Burkina Faso as well as in the other African Union member state countries.

The table below gives an overview of the ABNE capacity building activities that have benefited to Burkina Faso regulators and stakeholders from 2009 to date.

Table 1: Summary of ABNE capacity building activities for Burkina Faso Regulators and Stakeholders (July 2009 – October 2012)

Activity	**Venue and date**	**Number of Burkinabe regulators / stakeholders benefiting**
Training workshop on Agricultural biotechnology	Dakar, July 2009	1
International meeting in Ouagadougou	Ouagadougou, April 2010	60
In-country workshop on Liability and Redress (L&R) workshop for Deputies, top government officials, scientists and other stakeholders	Ouagadougou, July 2010	30
COP MO5 on Liability and Redress preparatory meeting	Nairobi, July 2010	1
Study tour	South Africa, November 2010	2
Training workshop on coexistence issues	Bobo-Dioulasso, November 2010	60
E- Biosafety program	Italy & Ouagadougou, from July 2011	1

Activity	Venue and date	Number of Burkinabe regulators / stakeholders benefiting
Internship	South Africa, November 2010	1
Science and Technology communication and Short Course	Michigan State University, August 2010 and 2011	2
Agricultural Biotechnology Short Course	Michigan State University, September 2011	2
Internation meeting (ABIC Conference)	Cairo, Egypt	1
BCH training	Tunisia, November 2011	1
Biotechnology & Biosafety Internship & Study Tour Program for African Regulators	Pretoria, South Africa, May 2012	1
Environmental Biosafety Short Course	Michigan State University, August 2012	1
Training of Trainers (ToT) program	Michigan State University, July 2012	2
1-year Biosafety Certificate Program	Michigan State University, 2012- 2013	1
Sensitization workshop for Burkina Parliamentarians	Ouagadougou, December 2011 & October 2012	143 (95 MPs + 48 representatives from ministries and institutions)
Technical meeting on Burkina Faso revised draft law	Ouagadougou, Fada-N'Gourma, Bobo-Dioulasso 2011 & 2012	56
Scientists & Regulators Forum	Arusha, Tanzania, September 2012	2
Information sharing workshop for the preparation of the biosafety short course to be conducted in The polytechnic University of Bobo-Dioulasso	Bobo-Dioulasso, May 2012	9
Total		215

Overall, the ABNE capacity building program has directly benefited over 200 Burkina Faso regulators and stakeholders through activities organized in the country as well as activities outside the country where Burkinabe participants were sponsored to.

Additionally and based on requests from the ANB and / or its partners, ABNE has been providing the necessary expertise for activities conducted by ANB in collaboration with relevant initiatives such as ICEGB and AATF and / or under the bilateral cooperation between Burkina Faso and countries such as the USA.

ABNE has been also undertaking various initiatives at the diplomatic level in Burkina Faso so as to comply with the requirements of the status conferred by the host country agreement. For instance, ABNE team initiated a series of visits to foreign Embassies and other diplomatic missions accredited to Burkina Faso. These were mainly meant for courtesy purposes but also gave ABNE the opportunity to explore sources for co-funding. In total, around 15 foreign missions in Ouagadougou were visited in 2010 and 2012.

The government of Burkina Faso started in 2010 to review and revise the national biosafety law. The process was concluded in December 2012 with the adoption of the revised law by the National assembly.

Adoption of a workable revised biosafety law

ABNE played an instrumental role in the process of revising the biosafety law, by providing technical assistance to the key players involved in the process. Beneficiaries of ABNE's specific interventions include not only regulators but also the members of the Parliament as well as the members of the farmers' association and those of the cotton companies all involved in the value chain of the cotton sector.

It is worth noting that ABNE was consulted by the specialized commission of the national parliament before the bill was recommended for final adoption. ABNE took the opportunity to raise critical issues on liability and redress still remaining in the draft and requested the commission to adequately address them before sending the bill for final adoption. This was done.

As a result, the newly adopted law is deemed balanced and fully workable. Most stakeholders at the national level as well as those connected with the technology at the global level have expressed their satisfaction with regards to the provisions of the law. For instance, the scope of the law now focuses only on living modified organisms and does cover products derived from modern biotechnologies, allowing thus to avoid unnecessary confusion. The liability regime was also improved and is now mainly built on the fault based basis.

Development of the biosafety short course program in Burkina Faso University

Based on the success encountered by ABNE in the country, the Polytechnic University of Bobo-Dioulasso (PUB) has been selected to host the ABNE biosafety short course program for the Francophone African regulators. This University is expected to serve as a center of excellence for biosafety training within the francophone West Africa region. A number of factors favored the choice of PUB, including the fact this University hosts the College of Rural Development, the *"Institut de Développement Rural"* that trains Agronomists and related specialists, and also because the main agricultural research station, the "Farakoba-Station" as well as the largest cotton company, SOFITEX, are located nearby. Therefore, the short course participants will have the opportunity to visit and interact with Burkinabe farmers growing GM crops and also with scientists conducting field trials.

To start concretizing this project, ABNE and Michigan State University conducted a joint mission to the Polytechnic University of Bobo-Dioulasso in May 2012, with the aim to finalize the discussions with the University staff and also to assess the general capacity of the institution to run the course. The National Biosafety Agency (ANB) that is the Burkina Faso biosafety competent authority actively participated in this mission, as well as other institutions involved in the same subject matter, namely the agricultural research institute (INERA-Farakoba) responsible for conducting confined field trials of biotech crops, the Muraz Centre working on GM mosquito and the International Centre for Livestock research (CIRDES). As an outcome of this mission, it was noticed that the Polytechnic University of Bobo-Dioulasso has the facilities and resources to teach an excellent course in Biosafety, as well as the necessary enthusiasm and commitment from the top authorities. It was also noticed a tight linkage between PUB and INERA that makes a short course at the University even more desirable. INERA offers resource personnel and a potential field trip to see a confined field trial. Based on this assessment, three (3) fellows were selected to form the initial core team responsible for the short course. These fellows were all sent to Michigan State University to attend special programs for Training of Trainers (ToTs) and Long term Training (LTT). A need was expressed for a much broader scope of partnership between Michigan State University and the Polytechnic University of Bobo-Dioulasso whereby assistance could be provided to PUB in the development of its new curriculum on biosafety. It is expected that a memorandum of understanding (MoU) is developed as soon as possible between the two partnering institutions.

Next areas of focus for ABNE in Burkina Faso

Implementation of the biosafety short course

In the coming years, ABNE will focus on the effective implementation of the biosafety short course at the Polytechnic University of Bobo-Dioulasso. In line of this, two faculties from the University and one scientist from the national agricultural research institute have been select to benefit from a special program in Michigan State University (MSU).

Support for the drafting of the biosafety implementing regulations

Following the adoption of the revised law, implementing regulations need to be drafted. Upon an official request ABNE will assist the national agency in this matter.

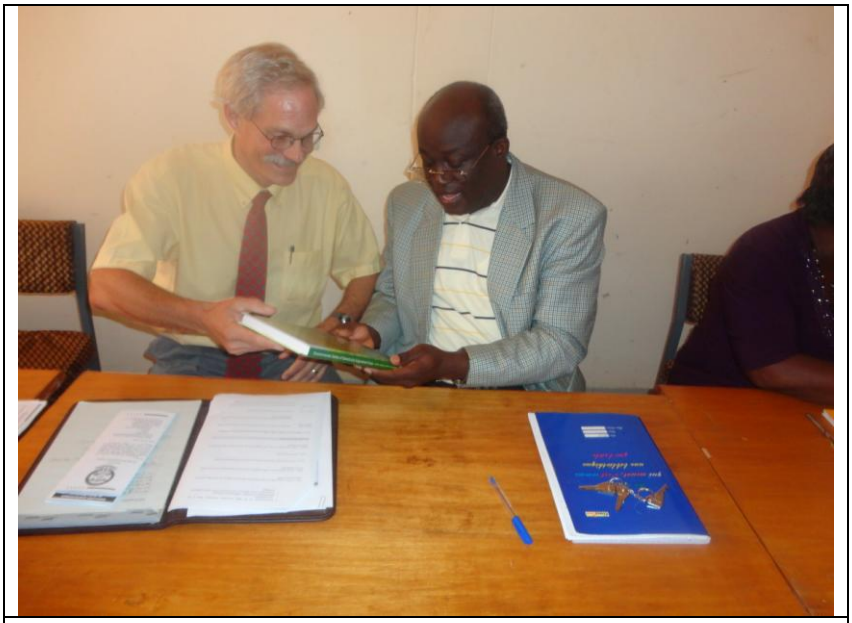
Support for the development of the national biosafety communication plan

Further to the adoption of the revised law, the national agency will need to strengthen its biosafety communication plan. Activities planned in this direction include translating the new law into three (3) local languages, printing and dissemination. ABNE will provide financial support for this.

Capacity building on CFTS inspection and post release monitoring and evaluation

The national agency has expressed interest for support to building capacities on CFTs inspection and post release monitoring and evaluation. Special interest is shown to learn from the Canadian experience, further to a study tour organized recently in Canada and US. ABNE will look at into the possibilities to provide the necessary support.

	
Bobo-Dioulasso, February 2012.Representatives of Farmers' Association discussing the implications of the revised draft biosafety law, Bobo-Dioulasso, with technical assistance from ABNE	***Pô, October 2012. Sensitization workshop for Burkina Faso MPs, organized with the support of ABNE by the Burkina Biotech Association and the National Biosafety Agency.***



Bobo-Dioulasso, May 2012. Prof. Jim Hancock (MSU) discussing with Prof. Georges Ouedraogo, President of the Polytechnic University of Bobo Dioulasso, during the preparatory mission for the implementation of the Biosafety Short course program in African Universities.

Bobo-Dioulasso, December 2012. Special study tour organized by ABNE for Tanzanian officials comprising of the Minister for Communication, Science and Technology, the Deputy Minister for Agriculture, Food Security and Cooperatives, the Deputy Minister for Environment at the Vice President's Office, Members of Parliament, the Chairman of the Tanzanian Cotton Board, scientists and media personalities.

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African Union

NEPAD Planning and Coordinating Agency (NPCA)

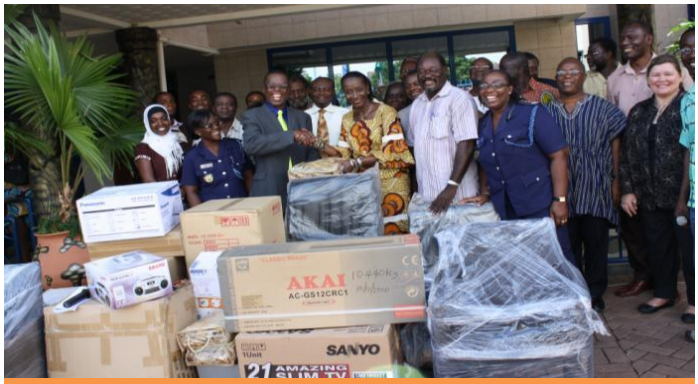
ABNE in Africa - Biosafety Capacity Building in Ghana

A Promising Example of a Functional Biosafety Regulatory System in Africa

The quest to assist building a functional biosafety regulatory system in Ghana is yielding some promising outcomes. The country has demonstrated significant political will and commitment towards creating an enabling regulatory environment for the advancement of science and technology in general and agricultural biotechnology research and development (R&D) in particular. Ghana's biosafety regime had earlier been driven by a Legislative Instrument (LI 1887: Management of biotechnology in Ghana) passed in May 2008 and presently by a Biosafety Act assented in December 2011. The law established the Ghana National Biosafety Authority (NBA) following which the Board was duly constituted and is pending an official inauguration. The country is also currently working on developing implementing regulations to help operationalize the law. In the interim, the NBC is fully functional and has been reviewing and making biosafety decisions on applications submitted and other related matters. Recently, Ghana announced its readiness to commence field trials following a successful review of three CFT applications namely maruca-resistant cowpea, nutrient-enhanced sweet potato and N-use efficiency, water-use efficiency and salt tolerant (NEWEST) rice. ABNE has since 2010 been pivotal in all these milestones and has been providing leadership, direction, technical and logistical support to the country. As a further step towards institutionalizing biosafety capacity building, tripartite negotiations involving NEPAD Agency ABNE, the University of Ghana (UG) and Michigan State University (MSU) are ongoing for UG to host biosafety short courses for Anglophone West African regulators. Already, 2 academic staff of UG are working closely with ABNE and MSU to develop curriculum in this regard.

ABNE Biosafety Capacity Building Activities in Ghana

ABNE's assistance in Ghana has been through a) Provision of logistical support to make the Biosafety secretariat functional, b) Building of human capacity and provision of information support services, and c) Provision of technical assistance and expertise. In November 2010, ABNE provided logistical support which included equipping the biosafety Secretariat of the NBC to make it functional. This ensured a smooth coordination of biosafety activities in Ghana aimed at implementing the Ghana biosafety law. This ran concurrently with human capacity development of officers of the biosafety office and the key stakeholders involved in biosafety regulation and decision making in Ghana. Several regulators, policy and decision-makers have directly benefited from ABNE activities (see Table 2 for breakdown). This was done through biosafety training and education; access to biosafety information resources through a web portal, policy briefs, newsletters and news bulletins; technical assistance in the development of standard operating procedures (SOPs), and guidelines for the administrative handling of applications; technical assistance in the development of a national biosafety communication strategy; technical guidance/assistance for conducting risk assessment of CFT applications. ABNE has created opportunities for interaction between Ghana NBC members and biosafety regulators in other countries aimed at developing a support network among peers for exchange of information and experiences, promoting better regulatory coordination between and among countries and sub-regions and fostering regional cooperation and a more harmonized approach to policies and regulations.



ABNE Director Prof. Diran Makinde handing over office supplies for the Secretariat of the National Biosafety Committee in Ghana, November 2010

Impact of ABNE activities in Ghana

Ghana has made giant strides in building an active and functional biosafety regulatory system through ABNE's support (and in collaboration with other stakeholders). The Biosafety secretariat is currently functional and is coordinating biosafety activities in Ghana. ABNE 's technical assistance and capacity building efforts in administrative handling and review of applications, effective performance of regulatory functions and upgraded skills in biosafety decision-making led to a successful review of three CFT applications namely; maruca-resistant cowpea, nutrient-enhanced sweet potato and N-use efficiency, water-use efficiency and salt tolerant (NEWEST) rice. Planting will commence in the 2013 growing season.

Ghana is also making progress in the development of implementing regulations to drive the biosafety regulatory process. Recently, Ghana made solid commitments towards the development of implementing regulations for the biosafety law. Through the active support of ABNE, the nation opted to empower its NBA through the responsible government ministry to issue guidelines for the implementation of the biosafety law. This requires a slight amendment of the biosafety act and the nation has established clear timelines to make this revision. The short courses and internship opportunity provided hands-on training in the development and implementation of standard operating procedures, handling and review of biosafety applications, adoption of best practices for safe conduct, inspection and monitoring of CFTs, while the study tours provided an interactive opportunity for regulators to experience first-hand other regulatory regimes and as well provided a 'seeing-is-believing' platform for some who have been skeptical and/or misinformed about the prospects of the technology. This mixed expertise and experience was demonstrated during the application review process and is expected to sustain the Biosafety regulatory system in Ghana. Effective public participation is essential for the strengthening of biosafety regulatory systems. In Ghana, efforts are currently underway to develop a National biosafety communication strategy to deepen the knowledge and understanding of the general public and other stakeholders and as well put in place strategies for emergency communication.

Participants at the training to strengthen biosafety communication capacity in Ghana, August 21 – 22, 2012 at Coconut Groove Regency Hotel, Accra

Future Capacity Building Efforts

ABNE will continue to provide strategic guidance, technical support and capacity building efforts to ensure that the nation's biosafety regulatory system is fully functional. Of topmost priority is the development of implementing regulations for the operationalization of the Ghana biosafety law. ABNE will continue to provide technical expertise (based on its rich African experience) and support to drive this process. Once the implementing regulations are in place, Ghana will be ready to receive applications for general release (most likely Bt Cotton), which is currently on hold. To this regard, ABNE will move to provide technical assistance and to build the regulatory capacity of the NBA and its TAC to receive, process, review and make science-based decisions on applications for general release. ABNE will strengthen the regulatory capacity of Biosafety inspectors and the various IBCs in Ghana to adequately monitor CFT compliance of approved trials currently pending and future trials to be conducted in Ghana. The nation will also be assisted to adapt and use the ABNE Inspectors manual in this regard. Regulators will be further empowered with knowledge and expertise on review of technical dossiers for general release into the market, and for import, export and transit. In addition, Ghana will be assisted to finalize and implement its communication strategy to help deepen biosafety knowledge and awareness among the key actors and

stakeholders on issues of biosafety and biotechnology. This will help promote effective public participation in GMO decision-making. ABNE is also looking to support Ghana to ratify and implement the Nagoya-Kuala Lumpur supplementary protocol on liability and redress and to institutionalize biosafety training in the University of Ghana.

Table 2: Summary of ABNE activities for Ghana

TYPE OF INTERVENTION	VENUE AND DATE	NO. OF STAKEHOLDERS EMPOWERED
Training workshop on biosafety decision-making	Accra, 29-31 March 2010	40
Environmental biosafety short course	Michigan State University, 25 – 30 July 2010, August 2012	3
Food safety short course	Michigan State University, 1 – 6 August 2010	1
Internship	South Africa, 21 November –4 December 2010, May 2012	3
Study tour	South Africa 28 November –4 December 2010 May 2012	4
Study tour	India, 6 – 18 December 2010	1
Training workshop on administrative handling of biosafety applications and operating a functional biosafety secretariat	Accra, 17 – 19 November 2010	27
Sensitization meeting for Members of Parliament in Ghana on the Biosafety Bill	Koforidua,, 22 January 2011	40
Training to strengthen regulatory capacity for application review, decision making and compliance	Kumasi, January 18 – 21, 2012	40
Training to strengthen biosafety communication capacity	Accra, August 21 – 22, 2012	29
Technical guidance for Risk Assessment Review of Applications for Confined Field Trials for Maruca-resistant Cowpea; Protein-enriched Sweet Potato; and Nitrogen-use efficiency, Water-use efficiency and Salt-Tolerant Rice(NEWEST) in Ghana	Accra, August 23 – 24, 2012	34

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ABNE in Africa - Biosafety Capacity Building in Kenya

Building a Functional Biosafety System in Kenya

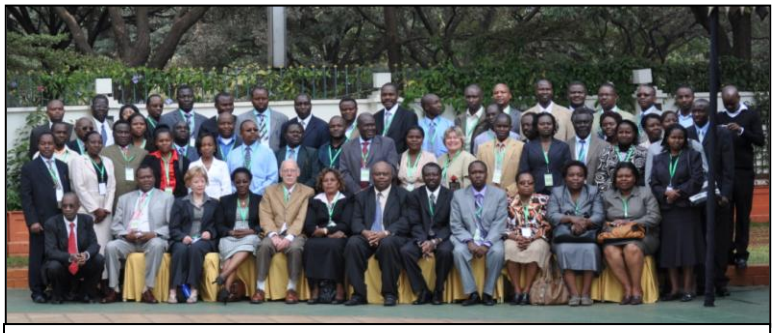
Kenya enacted its Biosafety Act in 2009 as the legal framework necessary to regulate agricultural biotechnology. This was followed by the publication of implementing regulations in August 2011, paving the way for commercialization of GM crops. Kenya therefore became the forth country in Africa after South Africa, Egypt and Burkina Faso to open up to gene technology. With the legal framework in place, the focus has shifted to establishing the infrastructure and processes essential for an effective and functioning biosafety system and ABNE has been instrumental in giving appropriate support.

Bt maize confined field trial

Kenya's institutional biosafety framework as outlined in the Biosafety Act 2009 revolves around the National Biosafety Authority (NBA), an agency whose mandate is to act as the coordinating institution on matters relating to the safe development, transfer, handling and use of genetically modified organisms. Operations of the NBA are supervised by a Board of Management that was appointed in April 2010. The board of management is composed of a broad spectrum of representatives from relevant government ministries, supporting regulatory agencies, scientists, farmers, private sector and consumer organizations. The board makes the final decision on behalf of the government of Kenya with respect to agricultural biotechnology. The NBA has so far only handled applications for contained and confined use of GMOs but with the recent publication of requisite regulations, commercialization is expected by 2014.

Bt cotton confined field trial

Confined field trial (CFT) applications were reviewed and the trials conducted for the SPFMV- maruka-resistant sweet potato and insect resistant maize (IRMA), while CFTs are currently ongoing for Bt cotton, virus resistant cassava, biofortified cassava and drought tolerant maize (WEMA). With the requisite implementing regulations in place, the stage is set for post-CFT activities in Kenya, including importation of GMOs for food and feed use.



Kenyan regulators attending a biosafety workshop on risk assessment risk management and decision making processes, July 2010

ABNE Biosafety Capacity Building Activities in Kenya

Table 3 summarizes ABNE's biosafety capacity building activities in Kenya. These efforts were focused on preparing the NBA for handling and processing unconfined release applications and in assisting in the development of the Biosafety Communication Strategy.

Impact of ABNE Activities in Kenya

Recognizing the importance of the NBA in Kenya's regulatory framework, and with the need to build its capacity to regulate agricultural biotechnology, ABNE has offered biosafety services to address NBA's capacity needs since its inception. Evidently, the NBA is progressively gaining confidence in processing applications and making decisions involving agricultural biotechnology, and is currently preparing for unconfined release applications. ABNE's expert consultation has been instrumental in the development of the Biosafety Communication Strategy.

Members of the Kenya National Biosafety Authority Board of Management at a biosafety training Workshop, April 2011

Table 3: Summary of ABNE Activities for Kenya

ABNE activities	Dates	Objectives	Number of regulators / stakeholders empowered
Workshops	1-3 September 2012, Naivasha 13-17 November 2012, Mombasa	1. Strengthening Biosafety Communication Capacity of the Board of the National Biosafety Authority 2. Building Decision Making Capacity for Commercialization of Genetically Modified Crops in Kenya	22 regulators 20 regulators
Short Courses	July – September, 2012, Michigan State University	Agricultural biotechnology courses at MSU: Environmental biosafety, food safety and science and technology communication	4 regulators
Study Tours and Internship	February 2012, South Africa	Hands-on regulatory experience and familiarization tour of South Africa	2 regulators
Exchange Visit	23-27 July 2012, Nairobi	Zambia Regulators Exchange Visit with the National Biosafety Authority	Government of Kenya (National Biosafety Authority)
International Meetings	Various	Exposure and networking opportunities for regulators	12 scientists and regulators

Future Capacity Building Strategy

Having established the necessary legal framework, Kenya is now primed for unconfined release approvals. ABNE will continue providing capacity building support to Kenya through training of regulators and expert consultation in developing the requisite regulatory infrastructure and processes in readiness for the commercialization of GM crops and importation of GM products. Following the workshop held in February and the subsequent workshop held in November, Kenya has drafted a Biosafety Communication Strategy that will be disseminated to stakeholders in 2013. ABNE will work closely with the Authority during this process and will also continue to work with the Authority on all issues related to the commercialization of genetically modified crops in Kenya including organizing trainings and workshops in this area.

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ABNE in Africa - Biosafety Capacity Building in Malawi

Building a Functional Biosafety System in Malawi

The government of Malawi signed the Cartagena Protocol on Biosafety in May 2000 and ratified it in 2009. In line with the requirements of the Protocol, the Malawian Parliament enacted the Biosafety Act in October 2002, which is administered by the Minister responsible for Environmental Affairs. The Act provides for an institutional framework for its operationalization consisting of the following;

- National Biosafety Regulatory Committee
- Reviewers
- Inspectors
- Biosafety Registrar

A national biotechnology and biosafety policy was approved by the Malawi Cabinet on 26th June 2008.

Among provisions in the Malawi biotechnology and biosafety policy is the delineation of roles and responsibilities at government level as well as at the R&D and other service delivery institutional levels. In the policy, the mandate for promoting and developing biotechnology in Malawi is vested in the National Commission for Science and Technology (NCST). The NCST hosts the National Biotechnology Committee, which is responsible for promoting biotechnology, public awareness and coordination of biotechnology research and development. On the other hand, the Department of Environmental Affairs (EAD) is responsible for regulation of biotechnology, which entails receiving and reviewing applications for activities with genetically modified organisms and issuing licenses or permits. The EAD hosts the National Biosafety Regulatory Committee (NBRC). In addition, there is a third set of public institutions that are responsible for providing biosafety regulatory and enforcement services in the country. The mandate of these institutions is provided through regulatory provisions included in the various Acts that established them. These include: the Ministry of Agriculture and Food Security; Ministry of Industry and Trade; Ministry of Health; Malawi Bureau of Standards; Pharmacy and Medicines Board; Pesticides Control Board; Seed Services Unit; Plant Protection Unit; Ministry of Labour; Fisheries Department; Forestry Department; National Herbarium and Botanic Gardens of Malawi; Department of National Parks and Wildlife; Ministry of Local Government; Ministry of Women and Child Welfare; and Malawi Investment Promotion Agency.

The Ministry of Agriculture and Food Security has also established its institutional biosafety committee (IBC) known as the **Agricultural Biotechnology and Biosafety Committee (ABBC)** which is technically and financially supported by the Ministry of Agriculture and Food Security.

Commencement of Insect-Resistant Cotton CFT in Malawi

In 2009, Bunda College of Agriculture of the University of Malawi through Professor Moses Kwapata submitted applications for confined field trials of insect resistant and herbicide tolerant cotton. The two applications for confined field trials (CFTs) for cotton (*Gossypium hirsutum*) with the events MON88913 (herbicide tolerant) and MON15985 (insect resistant) were submitted according to the provisions of the Malawi Biosafety Act #13 of 2002 and Biosafety Regulations, 2007, and the Malawi Biotechnology Guidelines, 2009; to the National Biosafety Regulatory Committee (NBRC) through the Biosafety Registrar. In January 4, 2013, Malawi commenced CFT for cotton at Bunda College.

Identified Biosafety Needs and Gaps:

Areas that require ABNE intervention are:

- Support to the NBRC in biosafety communication using the ABNE Biosafety Communication Manual. Training of members of the Agricultural Biotechnology and Biosafety Committee (ABBC) as an

agricultural technical group of experts to serve as a team of scientific safety reviewers and strengthen their capacity in risk assessments

- Training of the Biosafety Registrar, institutional biosafety committee members and members of the NBRC for their roles and responsibilities as biosafety regulators
- Training of inspectors for monitoring and compliance
- Facilitating attendance of the Biosafety Registrar and members of the NBRC in a functional biosafety committee meeting of another country.

A summary of ABNE activities that Malawi has participated in is given in Table 4.

Table 4: Summary of ABNE 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
Total		**38**

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ABNE in Africa - Biosafety Capacity Building in Mali

Building a Functional Biosafety System in Mali

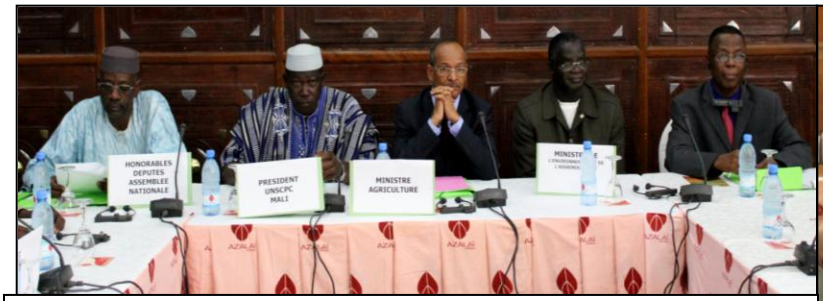
Mali ratified the Cartagena Protocol on Biosafety in 2003 and enacted the Mali biosafety Law in 2008 with the aim of establishing a regulatory system for agricultural and food biotechnology. This was an important achievement that was viewed by scientists and many other stakeholders as a significant step towards starting the process for approval of agricultural biotechnology activities in Mali, especially trials with Bt cotton.

In a continued effort, the government adopted two decrees in December 2010, which establish 1) the composition, duties and working procedures of the National Biosafety Committee (NBC); and 2) the conditions for conducting research on genetically modified organisms. It was believed that the adoption of these decrees would provide research institutes and laboratories in the country the regulatory framework necessary for starting experiments, trials and release of GMOs in a safe and responsible manner. However, to date, despite the fact that Malian farmers have clearly expressed interest in growing Bt cotton and the national research institute IER (*Institut d'Economie Rurale)* allowed by its board to conduct confined field trials (CFT) of Bt cotton, no CFT applications have yet been submitted to NBC for BT cotton in Mali.

ABNE efforts in building a functional biosafety system in Mali

From the inception of its capacity building programs, ABNE has been engaged with Malian regulators, through sponsoring regulators to participate in various meetings and training workshops in Africa and outside Africa. Furthermore on request from the Malian farmers' organization, ABNE conducted an information-sharing workshop in Mali for sixty participants. Table 5 (below) summarizes ABNE's capacity building activities carried out in Mali for regulators.

As a result of these capacity building efforts, particularly from the information sharing workshop recently held in Bamako in July 2011, willingness and commitment was shown towards moving the process forward to set up a workable regulatory system in Mali that would allow Researchers and farmers to benefit from new agricultural technologies, especially Bt cotton. As a matter of fact, the Malian biosafety bill, like many others in African countries, appears to be preventive and therefore needs to be improved through better alignment with the provisions in the international treaties and protocols such as the Cartagena Protocol on Biosafety and the recent Supplementary Nagoya-Kuala Lumpur Protocol on Liability and Redress.



ABNE Biosafety Information sharing workshop and reflection on the Malian Biosafety regime, Bamako, July 19-20, 2011

Table 5: Summary of ABNE capacity building activities for Mali Regulators and Stakeholders (July 2009 – September 2011)

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	60
Biosafety Short course	Michigan State University, August 2011	1
Farmers' day: farmers' experience sharing on agricultural biotechnology (jointly organized by Africa Harvest and ABNE	Bobo-Dioulasso, December 2011	5
ABNE biotechnology and Biosafety study tour program	Pretoria, May 2012	**1**
Total		**77**

Based on requests from Malian Regulators and other stakeholders, ABNE shall continue to assist in the process of building a functional biosafety system in Mali.

Future Capacity Building Efforts in Mali

Further to the recommendations that emerged from the information sharing workshop of July 2011; ABNE had planned to support Malians stakeholders to initiate the process for revising the biosafety law. Unfortunately all the efforts started were suddenly stopped with the political crisis that hit the country early this year. However ABNE has managed to keep a number of Malians in the loop, giving them the opportunity to participate in capacity building activities outside the country.

Review of the biosafety law

As the Malian farmers are the very first ones in Africa to publicly and officially demand for biotechnically improved seeds, ABNE remains committed to continue working with the regulators to create an enabling regulatory environment once the political situation gets back to normal.

Malian farmers in a field visit during the Farmers' day, Bobo-Dioulasso, December 2011.

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ABNE in Africa - Biosafety Capacity Building in Mozambique

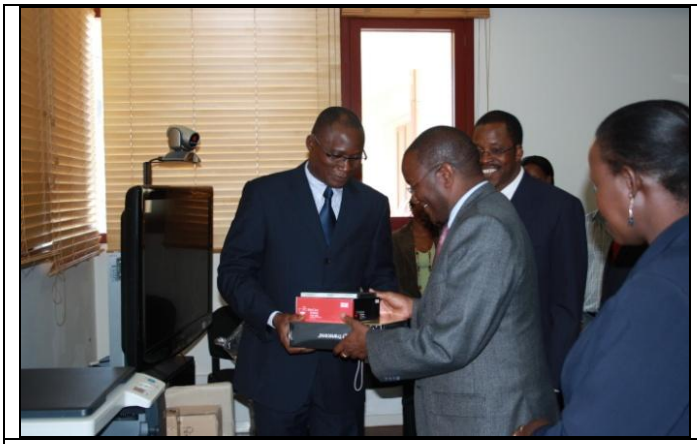
Building a Functional Biosafety System in Mozambique

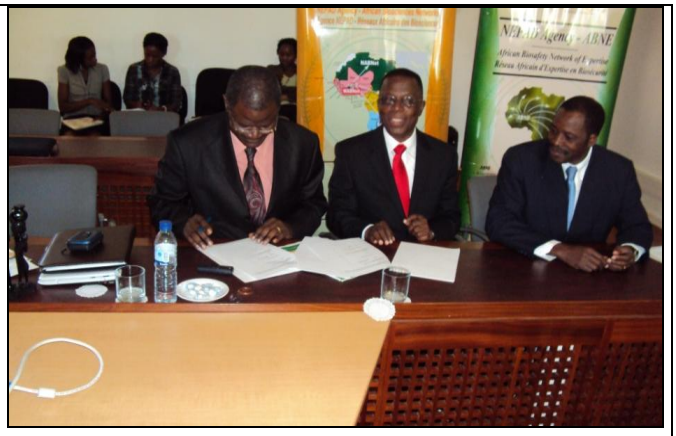
The government of Mozambique acknowledges the contribution that modern biotechnology can make to meet critical needs for food and nutritional security. At the same time, the government also recognizes that the development of modern biotechnology must go hand-in-hand with appropriate regulations in order to maximize the benefits while minimizing potential risks. Therefore, developing functional biosafety system has become a key priority of the government of Mozambique.

The Honorable Minister of Science and Technology of Mozambique requested ABNE to assist GIIBS, Mozambique, Maputo May 2011.

The government has taken positive steps towards achieving this goal, including: i) the ratification of the Cartagena Protocol on Biosafety in December 2001, ii) the establishment of an inter-institutional 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 the National Biosafety Authority, 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 have been conducted in 2010 in Mozambique as part of the training program 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 many other cotton producing countries. Yet, no application for the use of the new agricultural tools has been submitted due to the lack of a regulatory process.


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


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

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 agricultural biotechnology towards meeting the current challenges. Table 6 summarizes the ABNE capacity building activities that were carried out for Mozambican regulators from December 2009 to September 2011. Around 50

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 will allow GIIBS members to benefit from the network.

Main Impact of ABNE interventions in Mozambique

Acknowledging the relevance of ABNE capacity building program in Mozambique and following the recommendations made at the workshop of May 2011, the Honorable Minister for Science and Technology requested NEPAD-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 Implementing Regulations for consideration and endorsement by the government of Mozambique as an official Ministerial Diploma. Other partners namely PBS and AATF joined ABNE to take up this challenge Significant progress was made since then. A MoU was signed with GIBBS and 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. It was then expected that the Minister would take the next steps necessary for the adoption of the revised decree by the ministerial council, so that the country could start this year confined field trials of Bt cotton and water efficient maize for Africa (WEMA). A follow up visit was jointly organized by ABNE and AATF in August 2012 with the aim at meeting the Honorable Minister and discuss the next steps for the completion of the process.

Table 6: Summary of ABNE Activities in Mozambique

Activity	**Venue and date**	**Number of Mozambican regulators / stakeholders empowered**
Consultative visit	Maputo, December 2009	-
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	2
Technical assistance workshop on Mozambique biosafety regulations	Maputo, May 2011	14
Office supplies	Maputo, May 2011	
Consultancy support to review the biosafety decree	July – December 2011	
Follow up visit and Technical meeting at the Minister's office		
1-year Biosafety Certificate Program	Michigan State University, 2012- 2013	1
Total		**52**

Next areas of focus for ABNE in Mozambique:

Completion of the biosafety bill review process

ABNE together with its partners will follow up with the new Minister for Science and Technology and the national biosafety committee (GIIBS) to ensure a full the completion of this process. The cabinet reshuffle that occurred lastly may delay the process.

Training and technical assistance in CFTs application review, inspection and monitoring

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

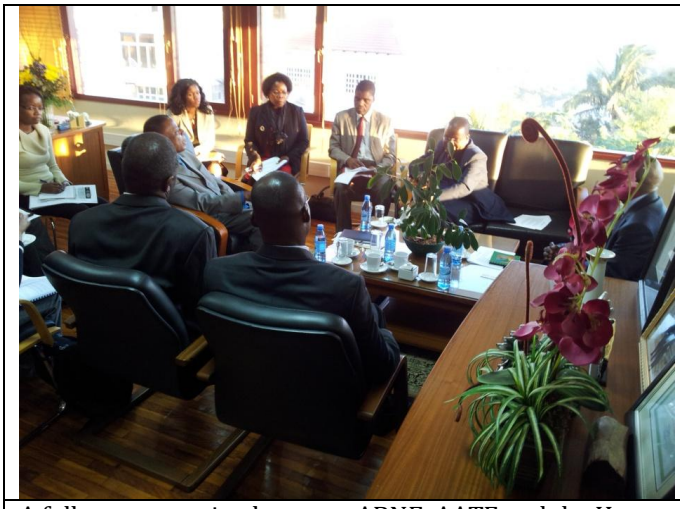
Public awareness

At the last meeting, the Honorable Minister regretted the widespread misinformation and misperception over GMOs in Mozambique, and requested ABNE to assist GIBBS in public education and awareness. To start, GIBBS and ABNE agreed to jointly conduct an information sharing and sensitization workshop in Maputo in February 2013, targeting various decision-makers including Committee chairs from the Parliament.

Long term capacity building program on biotechnology and biosafety

The honorable Minister expressed needs for assistance in building the national capacities on biotechnology and biosafety. He especially requested assistance:

- to sustainably build human resources through long term training on biotechnology and Biosafety, that is long term training at Masters' and PhD levels in this field;
- to support biotech and biosafety infrastructures such as well equipped laboratories.



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

Mozambique participants at the ABNE 2nd Scientists and Regulators Forum, September 2012, Arusha, Tanzania

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ABNE in Africa – Biosafety Capacity Building in Nigeria

Strengthening Regulatory Capacity for Increased Functionality

Having identified modern biotechnology as having the potential to enhance agricultural productivity, food and nutritional security, and ultimately improved livelihoods to meet the needs of Africa's most populous nation, the Government of Nigeria prioritized the development of regulations for deriving benefits from modern biotechnology without compromising on safety to the environment and humans. Consequently, Nigeria developed biosafety guidelines in 2001, which enabled the Competent National Authority on Biosafety (Federal Ministry of Environment) and the National Biosafety Committee (NBC) to review and approve applications for confined field trials for nutritionally-enhanced cassava (biocassava+), maruca-resistant cowpea, and biofortified sorghum. A significant landmark in the Nigerian regulatory landscape was the enactment of the Biosafety Bill into law by the Senate in June 2011. This law, which now awaits Presidential assent, provides the legal framework necessary to regulate agricultural biotechnology. The law when operationalized will demonstrate government leadership in the technology, assure the public of safety, and facilitate public research and corporate collaboration as well as industry investment. With the legal framework in place, the focus is currently on establishing processes essential for an effective and functional biosafety system.

Participants from Burkina Faso, Cameroon, Ghana, Kenya, Malawi, Mali, Mozambique, **Nigeria,** Uganda, and Zambia on a field visit during a study tour to South Africa in May 2012.

ABNE Biosafety Capacity Building Activities in Nigeria

Recognizing ABNE's role in biosafety capacity building, and noting the need for regulatory capacity strengthening, the National Competent Authority on Biosafety, requested ABNE's assistance. Subsequently, ABNE's approach in assisting Nigeria address biosafety capacity needs since 2010 have included building on prior progress and existing capacity through a demand-driven process, collaborating with other global, regional and sub-regional biosafety initiatives in service delivery, and forging strategic partnerships with institutions and stakeholders within the national system.

Participants at the biosafety communication capacity strengthening workshop in Nigeria, November 7-9, 2012.

ABNE has to date offered multidisciplinary biosafety expertise to Nigeria covering issues in environmental safety, food safety, socio-economic aspects of biosafety, policy and regulations, and biosafety communication with 332 regulators, policy and decision makers directly benefiting from ABNE services (Table 7). Assistance was provided

through biosafety training workshops; technical support in the review and adaptation of guidelines for biosafety administration; access to biosafety information resources through ABNE's web portal, policy briefs, newsletters, news bulletins and training manuals; short courses in environmental safety, food safety, and science & technology communication; biosafety internship programme in South Africa; study tours to South Africa, India, and Sri Lanka; and global networking opportunities through participation in international meetings. One regulator was 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.

Impact of ABNE Activities in Nigeria

Biosafety capacity building requires concerted efforts hence ABNE worked with various stakeholders to promote progress in Nigeria. Impact was achieved through partnerships and cooperation shaped by a shared vision and mechanisms for joint decision-making. In general, the various biosafety activities contributed to enhancing knowledge and skills of Nigerian regulators for the adoption of best practices in the performance of regulatory functions and also broadened their understanding of core issues in biosafety decision-making resulting in increased confidence in the regulatory system. For instance, the training to strengthen regulatory capacity for CFT compliance and monitoring helped address the low critical mass of regulators with expertise in biosafety monitoring and inspectorate functions. The biosafety communication training commenced the development of a national biosafety communication strategy that will provide the platform for enhanced public understanding on issues of biosafety and also improved quality of public participation in decision-making and policy development regarding issues of biotechnology management and biosafety. Participation in the study tours enabled Nigerian regulators to build a network of regulators and practitioners that will facilitate continuous cross-learning and the sharing of experiences and lessons. The training for Institutional Biosafety Committees did not only strengthen their competencies in the performance of mandated functions but also improved networking and cooperation among scientists, regulators, and policy makers.

Future Capacity Building Efforts

Building on earlier contributions to the process that culminated in the passage into law of the biosafety bill, ABNE envisages continual support for the National Competent Authority in developing regulations and guidelines to implement the biosafety law. Nigeria will be assisted in finalizing the biosafety administration guideline being adapted from ABNE's guideline document for African regulators and the national biosafety secretariat will receive further technical support for increased functionality in biosafety administration. Technical support will also be provided for developing and finalizing the national biosafety communications strategy as a solid communications strategy will allow the National Competent Authority to exercise control on the delivery of key messages and to ensure the continuous and systematic process of information sharing while elevating the visibility of the Authority. With plans to scale up current CFTs to multi-locational trials, ABNE plans to continue with training of regulators in the research institutions, regulatory institutions and the National Competent Authority on Biosafety to ensure strengthened competencies in monitoring compliance and enforcement of regulations.

Table 7. Summary of ABNE Activities for Nigeria

Type of intervention	Venue and date	Number of regulators/ stakeholders empowered
Training workshop on biosafety decision-making	Accra, Ghana, 29-31 March 2010	12
Environmental biosafety short course	Michigan State University, 25 – 30 July 2010/31July – 5 August 2011	3
Science & technology communication short course	Michigan State University, 14 – 19 August 2011	1
Masters e-biosafety course	Ancona, Italy, Jan – Dec 2011	1
Training workshop on CFT compliance and in-country study tour	Abuja, Nigeria, 22-25 September 2010 (included field visits to CFT sites)	52
Training to strengthen regulatory capacity for CFT compliance and communication	Abuja, Nigeria, 5-7 June 2012	42
Training to strengthen regulatory capacity of Institutional Biosafety Committees	Abuja, Nigeria, 5-6 November 2012	48
Strengthening biosafety communication capacity of the Competent National Authority and stakeholder institutions	Abuja, Nigeria, 7-9 November 2012	52
Study tours	South Africa, 28 November – 4 December 2010; May 13 – 20, 2012	3
Study tour	India, 6 – 18 December 2010	1
Internship	South Africa, May 6 – 20, 2012	1
Sensitization meeting for stakeholders in Nigeria on the Biosafety Bill	Abuja, Nigeria, 23 February 2011	116
1-year Biosafety Certificate Program	Michigan State University, 2012- 2013	**1**
Total		**333**

ABNE in Africa - Biosafety Capacity Building in Tanzania

Building a Functional Biosafety System in Tanzania

Tanzania is a signatory to the Cartagena Protocol on Biosafety and has put in place a National Biosafety Framework for the safe use, adoption and utilization of modern biotechnology. In line with the Cartagena Protocol, Tanzania has developed an Environmental Policy (1997), a regulatory framework as contained in the Environmental Management Act (2004) together with Regulations 2009 and Guidelines, including manuals. Tanzania has institutional arrangements that include a National Biosafety Committee, National Competent Authorities and Institutional Biosafety Committees.

In 2002, the National Biotechnology Advisory Committee (NBAC) was established to advise the Government and other stakeholders in all aspects of biotechnology. The National Biotechnology Policy (2010) was adopted with the aim of promoting the safe development and application of biotechnology in order to help realize the MKUKUTA/MKUZA & National Development Vision 2025.

ABNE Efforts in Building a Functional Biosafety System in Tanzania

Since the inception of its capacity building program, ABNE has been engaged with Tanzanian regulators, through sponsoring regulators to participate in various meetings and training workshops in Africa and abroad. Furthermore, on request from Tanzania Commission for Science and Technology (COSTECH), ABNE conducted a training workshop for lawyers and scientists on Liability and Redress in Tanzania for twenty participants. Table 8 summarizes the capacity building activities carried out for Tanzanian regulators.

Table 8. Summary of ABNE Activities for Tanzania

ABNE activities	Dates	Objectives	Number of regulators / stakeholders empowered
Collaboration Meeting with PBS	13-14 August 2012, Dar es Salaam	Program For Biosafety Systems (PBS),Tanzania Country Planning Meeting	15 regulators and policy makers
Study Tours and Internship	Feb and November 2012, South Africa and Burkina Faso	Hands-on regulatory experience and familiarization tour of South Africa and Burkina Faso	20 policy makers and regulators
International Meetings	Various	Exposure and networking opportunities for regulators	2 scientists and regulators

Impact of ABNE activities in Tanzania

As a result of these efforts, particularly the "seeing is believing" tour to Burkina Faso, willingness and commitment were shown for reviewing the provisions of the Environmental Management (Biosafety) Regulations (2009). Based on requests from Tanzanian regulators and other stakeholders, ABNE will assist Tanzania in this process. ABNE will also work with other biosafety service providers in Tanzania to organize a training on Legal issues on Biosafety and will further work

Environmental biosafety short course, Michigan State University, August 2011

with Tanzania regulators with a view to organize a workshop aimed at developing a Biosafety Communication Strategy for Tanzania stakeholders.

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ABNE in Africa - Biosafety Capacity Building in Togo

Building a Functional Biosafety System in Togo

Further to ratifying the Cartagena Protocol on Biosafety in 2003 the Togo Government developed a national biosafety framework in 2004 and enacted a biosafety Law in 2009. The Ministry for Environment and Forestry Resources was designated to endorse and coordinate the biosafety framework. Under its auspices, the national biosafety committee started drafting the regulations required to guide the implementation of the law, but had to hold on the process when the negotiations for the supplementary protocol on liability and redress were about to be concluded at the international level.

It is thought that the current Togo biosafety law focuses on an overly precautionary approach and thus puts too much emphasis on potential risks associated to biotechnological applications and products.

Over the last two years, the African Biosafety Network of Expertise (ABNE) has been accompanying the Togo Government to developing a functional national biosafety system that will operate for all interested parties in the country. One major achievement gained so far from this continued and joint effort is the recent signature of the Nagoya – Kuala Lumpur Supplementary Protocol to the Cartagena Protocol on Biosafety by the Government of Togo.

ABNE Efforts in Building a Functional Biosafety System in Togo
ABNE started working with the Togolese biosafety regulators earlier in 2009 when ABNE, in response to a request from the National Biosafety Committee, organized an in-country consultative meeting in Lomé. Afterwards, a number of Togolese stakeholders including regulators, biosafety scientists and law makers have been regularly involved in the ABNE's key activities. This led to some main achievements summarized as follow (Table 9).

Supporting Togolese regulators' participation in international biosafety meetings
The national Biosafety Focal Point was sponsored by ABNE to attend the ABNE Launch meeting and to participate in the technical discussions at the first forum of Regulators and Scientists held in Ouagadougou in April 2010.

A representative of the National Biosafety Committee was sponsored to attend the biosafety coordination meeting held in Nairobi, Kenya, in April 2011 and also to participate in a biosafety communication program that culminated to the development of the video documentary entitled *"African Voices"* displayed at the 2011 World Food Prize event. One lawyer was sponsored to the African Green Revolution Forum and the ABNE 2nd Scientist and Regulators' Forum, in Arusha, Tanzania.

Empowering Togolese regulators through biosafety training activities
Togolese Participants including regulators and scientists were sponsored by ABNE to attend the Biotechnology training workshop organised in Dakar from July 8-10, 2009 in collaboration with the Cheikh Anta Diop University of Senegal, and also to attend the West Africa regional training workshop on coexistence organized from November 10-12, 2010 in Bobo-Dioulasso, Burkina Faso, in collaboration with the Burkina Faso Biosafety National Agency. Two members of the NBC were sponsored to the Biosafety Summer Academy jointly organized by ABNE and University of Groningen, in the Netherlands in June 2012.

On invitation by the government of Togo, ABNE in collaboration with the Ministry of Environment and Forestry Resources organized a biosafety stakeholders' information sharing workshop in Lomé, from June 28-30, 2011. The workshop brought together 55 participants including regulators, members of parliament, scientists, civil society representatives, farmers and media personalities. This event gave the very first

opportunity for such a large audience to discuss the Togolese national biosafety regime. Participants benefited not only from the up to date scientific information from the ABNE experts but also from the ground experience and views shared by Burkinabe specialists who joined the ABNE team as invited experts.

The table below summarizes the ABNE capacity building activities for Togolese regulators.

Table 9: Summary of ABNE activities in Togo

Type of activity	Venue and date	Number of Togolese trained / involved
Capacity building workshop on Biotechnology and Biosafety for Regulators and Trainers	Dakar, July 2009	2
International meeting in Ouagadougou (ABNE launch and Regulators-Scientists' forum)	Ouagadougou, April 2010	1
Regional training workshop on coexistence	Bobo-Dioulasso, November 2010	5
Biosafety initiatives coordination meeting	Nairobi, April 2010	1
Information sharing workshop and reflection on Togolese Biosafety regime	Lomé, June 2011	55
Workshop on the Togo biosafety law No 2009-001	Kpalimé, April 2012	20
Biosafety Summer Academy	Netherlands, June 2012	2
COP-MOP6 Preparatory meeting	Pretoria, August 2012	1
ABNE Scientist and Regulators' Forum	Arusha, Tanzania, September 2012	1
Technical meeting with Togolese Government officials	Lomé, Togo, December 2012.	3
Total		**102**

Main Outcomes of ABNE Interventions in Togo

Key recommendations came up from the stakeholders' information sharing workshop held in June 2011 in Lomé. These recommendations all aim to speed up the process of building a functional biosafety system in Togo, and are to be addressed by the government of Togo with support expected from ABNE.

In addressing these recommendations, the Togo Government signed the Nagoya – Kuala Lumpur Supplementary Protocol on Liability and Redress on the 27th of September 2011. Togo thus became the 5th African country signing this protocol after Cape Verde, Madagascar, Mauritania and Mozambique.

Following this achievement and in order to ensure a better alignment of the national regulations with the Nagoya Supplementary Protocol provisions., the Government of Togo requested assistance from ABNE for a technical meeting on the biosafety law with the aim to identify the issues within the Togo biosafety Law and to set the scene for a revising process. This meeting was organized in April 2012, to allow the stakeholders identify and agree on the new provisions to incorporate into the revised law. It is expected that further to this initial meeting the process will continue until the final adoption by the Parliament of the revised law. In line with its mandate, ABNE will provide the necessary assistance including support for consultancy to take the process to its end.

Future Capacity Building Efforts

ABNE is engaged with the government of Togo to implement the key recommendations that emerged from the workshops held in Lomé in the past two years.

<u>Review of the Togo Biosafety law</u>

In the short term and following the signature of the Nagoya Kuala Lumpur Protocol by the Government of Togo, ABNE will assist the country with the national process of revising the biosafety law and to draft the

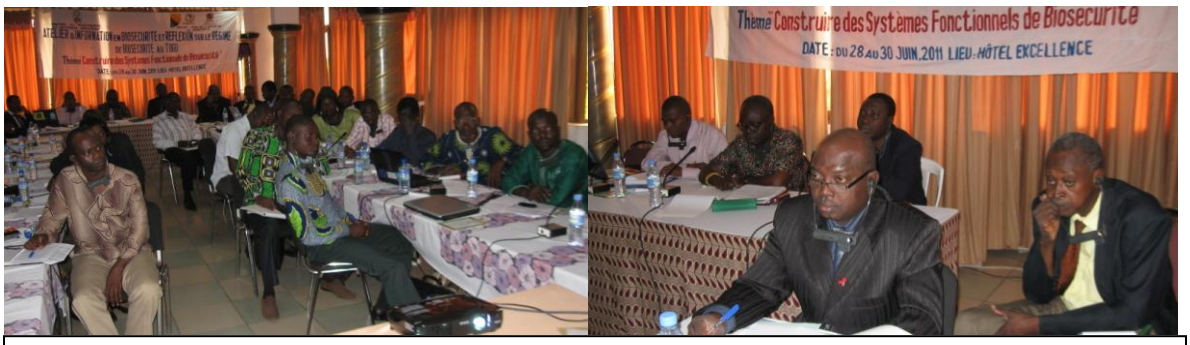
implementing regulations. Specifically, ABNE will provide support to national consultants to undertake the review process, similarly to how ABNE operated in Mozambique. In order to concretize this important project, the ABNE team met recently with the new Minister of Environment and Forest Resources, to seek for a renewed political buy in and to discuss the key steps related to the process of revising the law. The newly appointed Minister showed a strong commitment.

Regulatory capacity building

Based on key recommendations emerged from previous workshops, ABNE will assist upgrading specific groups' knowledge on various aspects of biosafety. Togolese Members of Parliament have expressed interest and have formally requested to be empowered on the biosafety legal and policy aspects. Furthermore, they thought that such a training program could be extended to Parliamentarians from the member state countries of the regional governing bodies such as the Economic Community of West African States (ECOWAS) and the West African Economic and Monetary Union (WAEMU).

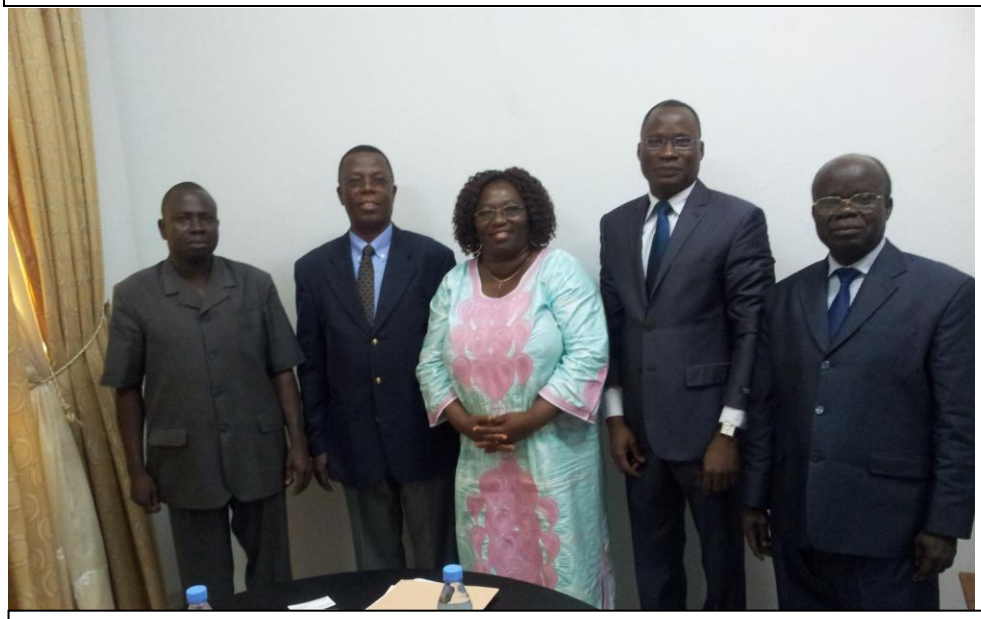
ABNE is also planning to organize a regional training workshop on the roles and responsibilities of IBCs.

The Togolese Biosafety Focal Point (with translation headset) attending the Biotechnology and Biosafety training workshop, Dakar June 8-10, 2009



View of participants attending the Togolese Stakeholders' information sharing workshop organized by ABNE in Lomé, June 28-30, 2011

Togolese lawyers discussing at the technical meeting on Togo Biosafety law, in Kpalimé, April, 2012



December 27, 2012, Lomé, Togo. ABNE team (Prof. Diran Makinde, 2nd left, and Dr. Moussa Savadogo, 2nd right), meeting with Her Excellency Madame Dedé Akouhéfa Ékoué (centre), Minister of Environment and Forest Resources, Togo. to discuss the country priority needs on biosafety capacity building. With her are Director of Cabinet for the Ministry Mr Ouro-Djeri Essowe (extreme right) and the Director of wildlife, Mr Okoumassou Kotchikpa (extreme left).

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ABNE in Africa - Biosafety Capacity Building in Uganda

Building a Functional Biosafety System in Uganda

The Government of Uganda approved their Biotechnology and Biosafety Policy in 2008 to provide Uganda as a signatory to the Cartagena Protocol on Biosafety is obligated to institute the requisite policy, legal and administrative provisions for the safe adoption and utilization of modern biotechnology. Towards the implementation of a fully fledged National Biosafety Framework, Uganda passed the National Biotechnology and Biosafety Policy (2008) and formulation of a law to operationalise this Policy is in its advanced stages.

In the absence of explicit legislation, Uganda has been operating within provisional arrangements to regulate the application of modern biotechnologies. The interim biosafety regulatory system coordinated by the Uganda National Council for Science and Technology (UNCST) has defined an institutional framework for research involving Genetically Modified Organisms (GMOs) thus far but it is expected that a definite law will enable a more unified approach to biosafety in the development and application of modern biotechnology in Uganda.

Within its statutory remit UNCST has approved over 14 confined field experiments of GM crops across the country since 2007. The National Biosafety Committee (NBC), a specialised Committee of UNCST, represents the cornerstone of regulatory oversight in biotechnology R&D in Uganda and is responsible for, *inter-alia*, the review and approval of applications for confined field trials of GM crops.

However, in as much as there is capacity for the review and approval of Confined Field Trial (CFT) applications, the GM crop R&D continuum implies a need for enhancing regulatory performance to support advanced stages of research towards general release of GMOs. Regulators such as members of the NBC and the IBCs would benefit from training on the risk assessment methodologies and risk communication as well as best practices for advanced field trials and open release as more products continue to advance through the product development pipeline.

Identified Biosafety Needs and Gaps:

- Passage of the National Biosafety Bill
- Support and training for the National Biosafety Authority
- Post CFT activities that will lead to general release (commercialization) of approved GM crops for Uganda.

ABNE Involvement in Providing Biosafety Support to Uganda

ABNE opened the East Africa Node office in Kampala and the office is hosted by the Uganda National Council for Science and Technology. ABNE will work closely with the NBC on the stakeholder engagement for the review of the National Biotechnology and Biosafety bill that will soon be presented to the House for reading and debate following approval by the Cabinet. ABNE will also work closely with the NBC in streamlining their administrative procedures and in testing the risk assessment guidelines developed by the Ad Hoc Technical Expert Group of the COP-MOP.

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

Table 10: Summary of ABNE Activities for Uganda

ABNE activities	Dates	Objectives	Number of regulators / stakeholders empowered
Workshops	11-13 December 2012, Kampala	1. Strengthening Biosafety Communication Capacity of the Board of the National Biosafety Authority	30 regulators
Short Courses	July – September, 2012, Michigan State University	Agricultural biotechnology courses at MSU: Environmental biosafety, food safety and science and technology communication	7 regulators
Study Tours and Internship	Feb 2012, South Africa	Hands-on regulatory experience and familiarization tour of South Africa	2 regulators
International Meetings	Various	Exposure and networking opportunities for regulators	4 scientists and regulators
1-year Biosafety Certificate Program	Michigan State University, 2012-2013		1 regulator

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