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## Rationale for a biosafety law for Uganda

### About AATF

The African Agricultural Technology Foundation (AATF) is a not-for-profit organisation that facilitates and promotes public-private partnerships for the access and delivery of appropriate proprietary agricultural technologies for use by resource-poor smallholder farmers in Sub-Saharan Africa ([www.aatf-africa.org](http://www.aatf-africa.org)).

### About WEMA

The Water Efficient Maize for Africa (WEMA) project is a public-private partnership coordinated by AATF to develop drought-tolerant African maize using conventional breeding, marker-assisted breeding, and biotechnology and make it available royalty free to small holder farmers in Sub-Saharan Africa.

### Introduction

One of the greatest challenges for humanity today is to produce more food from less resources. This is because agriculture has become increasingly unpredictable due to various challenges, one of the key ones being the impact of climate change. The United Nations reports that mankind's most serious challenge in the 21<sup>st</sup> Century is lack of enough fresh water for farming and domestic uses. Arable land is also diminishing every year as it is diverted for other uses that include industrial, residential and recreational purposes (James, 2008). Developing countries perhaps have the greatest challenge as evidenced by the rising population growth and the declining food production (IFPRI, 2009).

Global demand for food is expected to double by the year 2050 when the world population is projected to rise from 6.3 to 9.3 billion and 90 percent of them will reside in Africa, Asia, and Latin America (IFPRI, 2009). The population of Uganda is estimated to be about 31.6 million (World Bank, 2009). This is expected to rise to about 40 million by 2020, which shows that food production will need to increase to keep up with the population growth.

This scenario indicates a need for a shift in the way of doing business if agricultural production is to keep up with population growth and other challenges. Recent advances in modern biotechnology provide opportunities to address some of these challenges. If farmers and scientists are going to produce more nutritious foods from less land, water and other resources, it requires utilisation of new and innovative agricultural technologies. This in turn requires for policy makers to provide appropriate policies and laws to facilitate innovations in agriculture.

### Origins of biosafety in biotechnology

The genesis of biosafety laws goes back to 1996 when the UN Convention on Biological Diversity (CBD) set up the Open-ended Ad Hoc Working Group on Biosafety to draft a protocol to regulate transboundary movement of living modified organisms (LMOs). This move resulted into the development and adoption of the Cartagena Protocol on Biosafety (CPB). The Protocol is an

internationally recognised legal instrument for protection of the environment and human health from potential adverse effects that may result from applications of modern biotechnology. It spells out a comprehensive regulatory system for ensuring safe transfer, handling and use of transgenic products. Uganda signed the Protocol on 24 May 2000 and parliament ratified it about a year later on 30 November 2001.

## Status of the Biotechnology Safety Bill

The process of preparing the Bill started way back in 2003 when a series of stakeholder consultations were held to determine whether the country needed a new biosafety law or if it could do with minor amendments to the existing legislation to accommodate biotechnology work. The bill was drafted in 2004 through a participatory process and finalised in 2007. It is now ready for submission to the Cabinet for approval and subsequently to parliament for debate and enactment.

## Objectives of the bill

The objectives of the bill are to:

- i. facilitate responsible and ethical research and development in modern biotech;
- ii. minimise and manage the risk that may be posed by application of GMOs to the environment and human health;
- iii. ensure an effective level of protection in the research, development, safe transfer, handling and use of GMOs that may present a risk or harm to human health or the environment; and
- iv. establish a transparent and knowledge-based process for reviewing and making decisions on the transfer, handling and use of GMOs and related activities.

## Key provisions of the bill

The draft bill is a comprehensive and facilitative bill that if enacted will ensure safe and responsible application of modern biotechnology for improvement of agricultural productivity in Uganda.

It covers all the key directives of the Protocol with regard to handling, importation, export, transit, contained use, confined use, release to the environment and or placing on the market of any GMO. It establishes the National Competent Authority for Biotechnology and Biosafety, the National Biosafety Committee and the National Biosafety Focal Point to govern biotechnology research, development and deployment in the country.

Risk assessment guidelines outlined in the draft bill are in line with strict international standards under the Protocols, and FAO/WHO Codex Alimentarius to which Uganda is a signatory. The law is very clear on risk management procedures in case of emergency as a result of release of unauthorised biotech products into the environment. It imposes heavy penalties for offenses under the law.

Other important provisions of the bill include mechanisms for awareness creation to enhance public participation, knowledge and understanding, and labelling of biotech products.

## Importance of enacting the biosafety law

In order to benefit fully from biotechnology and be able to commercialise products, a country is required by the Cartagena Protocol to develop and implement national policies, laws, administrative and technical instruments to address safety of the environment and human health with regard to use of modern biotechnology. In addition, the parties to the Protocol are also required to establish a functional Biosafety Clearing House (BCH) for registration and documentation of transgenic products intended for release into the environment.

Uganda already has the National Biotechnology and Biosafety Policy which calls for application of modern biotechnology to enhance agricultural productivity, among other uses. In order to operationalise it, the country needs to have a biosafety law. The biosafety law will ensure that potential risks associated with modern



biotechnology are minimised and benefits, such as application in agriculture, environment and industry, are emphasised.

Uganda has invested heavily in biotechnology capacity building to enable it to conduct modern biotechnology research and development safely and responsibly. It has four fully equipped laboratories for conducting molecular biology work, two modern plant transformation laboratories, three state-of-the-art tissue culture laboratories and seven microbiology laboratories. The country has at least three Biosafety Level II greenhouse and screen-houses and four confined field trial (CFT) sites in the country. In addition, the country has about 73 biotechnology experts with doctorate degrees; 54 with master degrees and over 210 with bachelor's degrees and other support staff with lower levels of academic qualifications, working in the field of biotechnology. These people need the biosafety law in order to fully utilise their knowledge for the good of the country.

Scientists in Uganda are already deeply involved in biotech research and development. These include contained field trials of GM cotton at Kawanda and GM banana research at Namulonge. For these products to reach the farmer, the government needs to enact the biosafety law as per the provisions of the Cartagena Protocol. If the law is not enacted, then the public funds used to facilitate the research will have gone to waste.

As a key member of the East African Community (EAC) and the Common Market for Eastern

and Southern Africa (COMESA) where rapid developments towards commercialisation of biotech crops are taking place, Uganda cannot afford to be left behind. Kenya, Uganda's largest trading partner and most reliable import-export route, opened its doors to trade in modern biotechnology products when it enacted the Biosafety Act 2009.

More critically, Uganda is one of the five countries participating in the Water Efficient Maize for Africa (WEMA) project. WEMA is an innovative public-private partnership project whose aim is to make drought-tolerant maize available to smallholder farmers in Sub-Saharan Africa on royalty-free basis. Other member countries are Kenya, Tanzania, Mozambique and South Africa.

Drought is the most important constraint to African agriculture severely affecting maize, the most important African staple food crop. Three-quarters of the world's severe droughts over the past 10 years have occurred in Africa. The WEMA partnership was formed in response to a growing call by African farmers, leaders, and scientists to address the effects of drought cost effectively.

The maize varieties developed under WEMA are expected to increase yields by 25 percent under moderate drought. This translates into about two million additional tonnes of food during drought years in the participating countries. Participation of Uganda in this crucial project will be an exercise in futility if the country does not enact a comprehensive biosafety law as required by the protocol to govern commercialisation and general handling of biotech products.

## Conclusions

From the foregoing it is clear that Uganda, which has invested heavily in biotech research, development and capacity building, needs to enact a comprehensive biosafety law so that it can reap the benefits of modern biotechnology. The continued lack of the law undermines the country's ability to effectively regulate modern biotechnology in compliance with its national, regional and international obligations.