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Uganda and the Biotechnology Revolution: Update and Emerging Issues

1. Introduction

Over the last six years, Uganda like many other African countries has been developing and putting in place legal, policy and institutional frameworks to harness the full potential of modern biotechnology in addressing some of the country's major challenges in the sectors of agriculture, health and industry among others. These developments are proceeding on the premise of the Cartagena Protocol consensus that while modern biotechnology has great potential in addressing problems afflicting mankind, unless developed and applied cautiously with adequate safety measures, it can have serious adverse effects not only to biological diversity but also human health. This info- sheet is intended to give a summary update of biotechnology and biosafety activities in Uganda, in particular the development of legal and policy frameworks. It also gives an update of the international developments in the area of biosafety, and highlights some of the emerging issues in Uganda's context.

2. Policy Framework

In April this year, Cabinet finally approved the National Biotechnology and Biosafety policy to guide and ensure the safe development and application of tools of modern biotechnology (in particular Genetically Modified Organisms). The policy aims at contributing to the national development goals of poverty eradication, improved health care, food security, industrialisation and the protection of the environment, through the safe application of modern biotechnology. It has three major objectives viz., to build and strengthen national capacity in biotechnology through research and development, promotion of the utilisation of biotechnology

Box 1: Key Priority Areas

- Human Resource Capacity Development
- Infrastructure Development
- Research & Development
- Public Awareness and Participation
- Industrial Applications and Commercialisation
- Bioethics and Biosafety
- Indigenous Knowledge
- Gender Considerations
- Linkages and Partnerships
- Biodiversity Conservation and Utilisation

products and processes as tools for national development, and the provision of a regulatory and institutional framework for safe and sustainable biotechnology development and applications. The policy identifies ten priority areas where policy intervention is required to achieve the above objectives. These are summarised in Box I above.

3. Biosafety Legal Framework

Uganda's Biosafety framework has been developing in chorus with the National Biotechnology and Biosafety policy. Initially, the country had taken the approach of developing Biosafety Regulations under the Uganda National Council for Science and Technology Act. This process stalled when it became clear that the Uganda National Council for Science and Technology Act could not be the basis of such Regulations as it does not provide adequate delegated authority to cover all issues that the Regulations intended to address. Stakeholders also felt that biosafety was such an important issue that any law on the subject had to have the oversight and scrutiny of Parliament. It was for these reasons among others that Government changed approach and begun developing an independent Biosafety Bill. There is now an advance draft for a National Biotechnology Safety Bill which is yet to receive Cabinet approval before it is tabled in Parliament for debate. In this draft, it is proposed that the Act will apply to the making, import, export, transit, contained use, and release or placing on the market of GMOs. It designates the Uganda National Council for Science and Technology as the Competent Authority for purposes of its administration.

Following the approval of the National Biotechnology and Biosafety Policy, and the fact that the country already has GM activities taking place including crops undergoing field trials, it is extremely important that Government expedites the process of enacting the regulatory framework to ensure the safe and responsible development and application of GMOs in the country. This framework should be based on the precautionary principle and should provide for a clear and transparent decision making process on matters involving



Science Journalists being shown the confined field trials of GM banana in Kawanda

GMOs. It should also address issues of liability and redress including compensation for damage that might arise out of activities involving genetically modified organisms. The framework should involve public participation and consultation.

4. GM Activities in Uganda

At the moment, the National Biosafety Committee (NBC) has cleared two GM crops for confined field trial in Uganda i.e the Bt Cotton which is said to be resistant to bollworm and GM bananas which are said to be resistant to Black Sigatoka, a bacterial disease that causes necrosis of leaves and low crop yields. The NBC has also received and started considering another application for confined field trials of GM Cassava. The trials are largely aimed at data collection on the potential of Bt cotton and GM bananas in addressing the problem of



GM Banana sample at INIBAP transit centre in Belgium before they were transported to Uganda

bollworm damage and sigatoka respectively. It has also been reported recently that Ugandan scientists would soon start genetic modification of live stock as away of increasing meat and dairy production in the country.



Sample of Organic Cotton field

approved for field trials), the need for greater transparency and public participation in decision making can not be over emphasized. Given their controversy, public acceptance of these technologies will largely depend on public trust and confidence in the technology, which necessitates public participation and consultation.

While these developments may be good for the country, appropriate policies, laws and institutional mechanisms need to be in place to guide the science and mitigate potential impacts, rather than science defining the direction of policy and regulatory framework, as seems to be the case. The country also needs to scale up its scientific and technological capacity in the different areas of modern biotechnology (including the areas of risk assessment and management) before it ventures further into GM activities. Given the first experience with GM crops in the country (where public got to know about them after they had been

5. Developments at the International Scene

It's important to recall that many contentious issues in the Cartagena Protocol on Biosafety including rules on labelling & identification, risk assessment & management, compliance, and liability and redress were left unresolved. These issues were left to the Conference of the Parties serving as the Meeting of the Parties (COP-MOP) to resolve with time. There have so far been four COP-MOPs at which several developments aimed at further elaborating rules and principles for the safe development and application of GMOs have been discussed and agreed upon. In particular, COP-MOP 4 held in Bonn-Germany in May 2008 adopted several decisions in the above respect, the most important ones being in respect of liability and redress for damage resulting from transboundary movement of Living Modified Organisms (LMOs), Risk assessment and Management, and compliance with the Protocol.

5.1 Liability & Redress

The question of liability and redress for damage resulting from LMOs remains an outstanding issue. While Article 27 of the Cartagena Protocol provides in effect that COP-MOP had to complete the process of elaborating international rules and procedures in the field of liability and redress for damage resulting from transboundary movement of LMOs in 2008, this will not be possible. At COP-MOP4, there remained outstanding issues to be agreed upon in the final text on the subject submitted by the Ad Hoc Working Group of Legal and Technical Experts on Liability and Redress. In Decision BS-IV/12, COP-MOP 4 therefore decided to establish a Group of the Friends of the Co-Chairs to further negotiate the international rules and procedures with regard to liability and redress resulting from LMOs. The Group is obliged to meet at least once before COP-MOP 5 in 2010 when the final text is expected to be considered for adoption. Therefore as of now, the international liability and redress regime for damage arising from the transboundary movement of LMOs remains elusive. However, for Uganda and other African States, it is important to recall the African Union decisions which calls upon and encourages member countries to adopt the African Model Law on Safety in Biotechnology position on liability and redress, pending the finalisation of the international regime.

5.2 Risk Assessment and Management

In its decision BS-IV/11, COP-MOP 4 established through the Biosafety Clearing House an open ended online forum on specific aspects of risk assessment, and an Ad Hoc Technical

Expert Group on Risk Assessment & Management. The major work of the Ad Hoc Technical Expert Group is to develop a roadmap on the necessary steps to conduct a risk assessment, and for each step to provide examples of relevant guidance documents, and to make recommendations to the secretariat on how to integrate the road map and the tools for retrieval of guidance materials available in the Biosafety Information Resource Centre of the Biosafety Clearing House that are relevant at the different stages of risk assessment. The Group is also to consider modalities for cooperation in identifying LMOs or specific traits that may have adverse effects on the



GM lab experiment on corn and apple

conservation and sustainable use of biological diversity, taking into account risks to human health. It is critical that Uganda as part of the African Group engages with these processes not only as a way of influencing the final outcome but also for capacity building in the respective areas.

5.3 Compliance

Compliance by all parties to the Cartagena Protocol is key not only in achieving the objectives of the instrument but also in ensuring that LMOs do not adversely affect the environment, human health, and social economic wellbeing of the different countries party to the protocol. It was for this reason that COP-MOP established a Compliance committee to address issues concerning non compliance by members. A highly controversial and outstanding issue is whether or not punitive measures should be adopted and enforced in cases of persistent non-compliance. At COP-MOP 4, where the meeting was expected to pronounce itself on the matter, in decision BS-IV/2, it deferred the matter “until such a time as experience may justify the need for developing and adopting such measures.” What this means therefore, is that at the international level, there are no punitive sanctions for non compliance with the protocol obligations. Member countries like Uganda can only ensure compliance from other members by adopting measures at the national level that can deter non compliance. In this respect, COP-MOP 4 reminded parties of their obligations to adopt appropriate domestic measures addressing illegal transboundary movement of LMOs and to report occurrences of such movements to the Biosafety Clearing House.

6. Next Steps

In light of Uganda’s social-economic circumstances, and the level of scientific and technological capacity, and the fact that the country already has GM activities taking place, it is of utmost importance that Government moves quickly to implement the National Biotechnology and Biosafety Policy. There must be a clear strategy for implementing the policy with clear time frames. The process of enacting the biosafety regulatory framework should also be fast tracked as a matter of urgency. Given the potential adverse effects of GMOs on other agricultural systems and farming practices (in particular organic agriculture, and traditional smallholder farming practice of saving, reusing and exchanging seeds), it is critical that Government also quickly considers and approves the National Policy on Organic Agriculture (to protect the sub sector from the threats of GMOs) and expedites the policy and legislation making processes bearing on the subject of protection of farmers’ rights and traditional knowledge and practices. In this respect, Government should speed up the process of implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture - which should be along the lines of the African Model Law on Community Knowledge, Community Rights and Access to Genetic Resources. Parliament should also quickly consider and pass the Plant Variety Protection Bill into law. This law should provide for the protection of farmers’ and community rights and in particular guarantee the farmers’ right to save, sow, reuse and freely exchange seed.