



**Food Security and Biotechnology in Africa**



This project is financed by the European Union  
and implemented by the ACP Secretariat

## Module 6

# TAILORING BIOTECHNOLOGIES: TOWARDS SOCIETAL RESPONSIBILITY AND COUNTRY SPECIFIC APPROACHES

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For detail see word and PDF supporting materials

# Course Structure

 Unit 1: Technology and innovation to the rise of biotechnology: 5 hours

 **Unit 2: Policy-making and communication: 3 hours**

 Unit 3: Value chain, agribusiness, local and global development: 3 hours

 Unit 4: Stakeholder participation: 3 hours

 Unit 5: Case studies of tailor-made biotechnology in specific countries: 6 hours

The final version of this module is on February 28th, 2017

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# Objective of module 6

The objective of this module is to allow students to understand how the innovation and policy making lead to tailor-made of both classic and modern versions of biotechnology to the needs and customs of specific countries. Tailoring biotechnology involves that stakeholders can use the tool within their own context and on their own conditions and have the opportunity to fulfil the required social, financial, ethical and other conditions for the implementation of the new technology.

# Specific Objectives

- ❖ Find the multiple currently available technologies and innovation and how they contribute to the rise of biotechnology.
- ❖ Understand the role of policy-making and media on adopting biotechnology
- ❖ Know how global and local value chain represent for local firms and suppliers in the countries to get access to larger markets and new technologies.
- ❖ The importance and the role of stakeholder perceptions, internalization and appropriation in the process of biotechnology for development.
- ❖ Discover current experience throughout case studies of African countries that apply GMO crops.



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# 6.2. Unit 2 . Policy-making and communications (3 hours)

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The objective of this unit is to illustrate the role of scientists, medias as well as poly-makers in national and international systems on adopting biotechnology.

# Role of scientists in determining policies related to biotechnology

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The current risk assessment of GMOs is primarily focused on potential health and environmental risks, while the benefits are usually not considered by the public.

Risk assessment based on specific guidelines and sound scientific evidence should be made available by scientists to ensure efficiency, transparency and safety so as to build confidence with the **public** and **policy-makers**. Farmers should be demonstrated through trials to show the advantages and drawbacks of Biotechnology.

# Role of scientists in determining policies related to biotechnology

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The public understanding of biotechnology as well as other scientific and technology issues might be defined as a knowledge of the facts, findings and methods of science.

Existing national policy such as laws or strategies should be known to allow citizens to be familiar to biotechnology, and gain access to reliable and balanced information.



# Role of scientists in determining policies related to biotechnology

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The scientist should :

- Provide to African decision-makers updated information on global scientific and technological trends in order to enable them to be efficiently engaged in policy-making on Sciences Technology and Innovation (**STI**) issues;
- Provide right information to civil society;
- Strengthen national capacities for **STI**
- Reinforce regional and international **STI** cooperation for sharing experience and knowledge.



A broad world wide understanding of biotechnology by citizens is imperative to ensure their personal integration into the technical and scientific aspects.

In practice, the non-specialist obtains his knowledge of all biotechnological things from the international dissemination of information, mainly by radio, TV, books, exhibitions, conferences, news papers, Internet, etc.

For the public to appreciate the importance of biotechnology and the need for adequate funding it usually refers to the adoption of the technology by the rest of the world. In general, Europe or USA is taken as example for most african countries.

Although biotechnology has some advantages, it is also perceived as having its drawbacks.

For some people drawbacks are dominant, and they may be afraid of biotechnology.

Many different ethical, religious, political and even commercial reasons all contribute to these attitudes.

Policy-makers such as government and parliament evaluate the societal significance of scientific and technological issues such as biotechnology.

Without a “policy-maker will” a country may face to non-functional regulatory frameworks, low public awareness and inability to handle approval processes.

The goal of public policy is to maximize the welfare of all its citizens.

Biosafety regulation can help to achieve that by providing certainty, stability and disciplinary rigor to the social framework required for risk assessment, management and communication.

A common citizen clearly cannot be expected to have an indepth understanding of all the facts, relationships and issues of biotechnology.

Former scientific achievements in **“traditional” agriculture** and **green revolution** were not accompanied by negative public reactions;

On the contrary, they were usually welcomed and adopted.

**However**, the generation of transgenic plants and the use of molecular tools have evoked public and regulatory concerns and sociological issues.

It is now clear that public acceptance and full commercialization of genetically enhanced crop plants and forest trees depend, in addition to breakthrough science, on proper public awareness of the issue, good perception and **political-support**.

The negative perception of GMOs in some western European countries has negatively influenced GM debates in Africa

This has reinforced the need for a transparent process of engaging the public in decision-making.



For example, in Burkina Faso, the National Agency of Biosecurity (ANB) created since 2003 launched the program for public understanding of Biotechnology.

The ANB activities aim to promote public awareness and understanding of modern biotechnology and to stimulate dialogue on its current and potential future applications.

**Public awareness was enhanced**

**by translating the biosafety law into local languages (Moore', Jula and Gulmacema) most commonly spoken language by cotton breeders.**

In 2008, Kenya implemented a national biotechnology awareness strategy (BioAWARE-Kenya).

The strategy meant to enhance public understanding and awareness through the dissemination of accurate, timely and balanced information to catalyze informed decision-making.

National communication efforts are strengthened by platforms such as the Open Forum on Agricultural Biotechnology in Africa (OFAB).

The OFAB enables interactions between and among scientists, journalists, the civil society, industrialists, policy makers, and farmer groups and consumer associations, which explore avenues of bringing the benefits of biotechnology to the grassroots level (<http://www.ofabafrica.org>).

The adoption of a any technological innovation implies a certain amount of risk and managing this risk is an important component of decision-making.

An assessment of the socio-economic impact of biotechnology is an invaluable input in regulatory decision-making. The conclusion of the Cartagena Protocol on Biosafety (**CPB**) to the Convention on Biological Diversity (**CBD**) was a major turning point in the regulation of GM organisms particularly those destined for intentional environmental release.

The CPB is significant for the agriculture sector as it recognizes both the benefits and the potential risks arising from GM technology.

IT stresses the need to do scientifically sound risk assessment and management practices to minimize adverse effects.

As of February 2016, the only countries in Africa that have not yet ratified or acceded to the Cartagena Protocol on Biosafety are Equatorial Guinea, São Tomé and Príncipe, and Sierra Leone.

A national policy is required to frame a country's unified approach to biotechnology and biosafety.

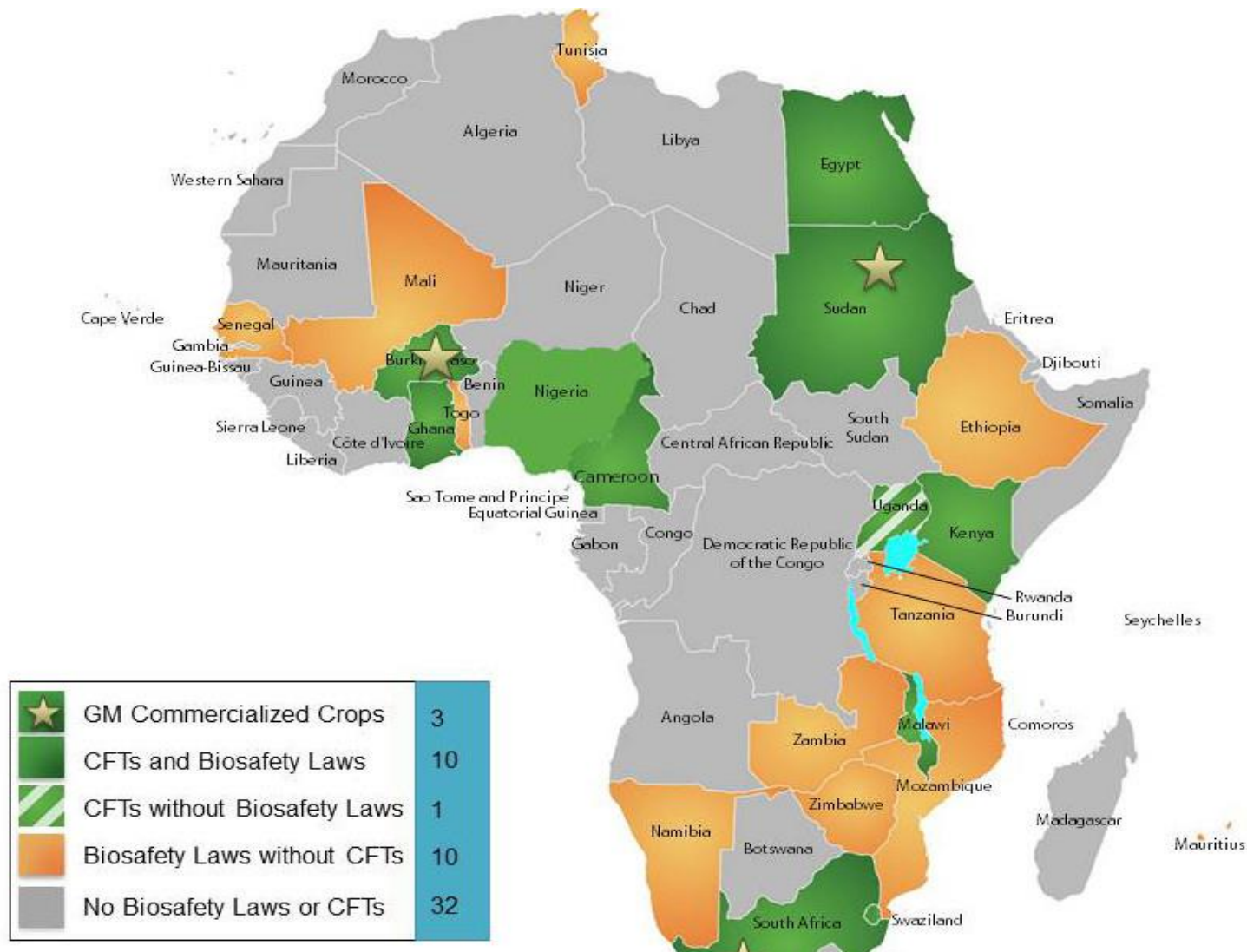
Problems arise when one sector of government has a positive approach to the development of biotechnology (often led by ministries responsible for agriculture or science), whereas other ministries (often those responsible for the environment or trade) adopt a negative view.

The diversity of approaches of different government departments leads to considerable uncertainty and can be considered partially to blame for regulatory delays and poor decision making.

# Current international and national policies

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## State of GM crops in Africa January 2016



Communication proceeds ITC's but many special interest groups may disseminate their own information and interpretations, also verbally in meetings and elsewhere.

In various countries, to varying extents and with varying quality, newspapers, magazines, radio, television, Internet fora, report and discuss new technological topics of public concern are used.

But biotechnology is fairly prominent among countries, especially when dealing with genetically modified crops and foods.



The main role of medias are to increase public awareness of biotechnology in impartial matter.

Medias should present the technology as simply as possible for a better understanding of general public.

Information exchange between media people and scientists on biotechnology and its best practices is necessary.

The trust between medias and african bio-scientist needs to be improved.

- What are current local laws in the country in relations to biosafety or why they don't exist?
- What can be done to parliament for a better comprehension and adoption of biotechnology?
- What can be done to government for a better comprehension and adoption of biotechnology
- Is it necessary to have specialized medias in the country dealing essentially with science technology and innovation?
- Can the african observatory of science, technology and innovation (<http://aosti.org>) play a role for better public understanding and adoption of biotechnology?

