

Koj

# Comments on COMESA's Draft Policy On GMOs

**July 2010** 



PO Box 29170, Melville 2109, South Africa www.biosafetyafrica.net

The African Centre for Biosafety (ACB) is a non-profit organisation, based in Johannesburg, South Africa. It provides authoritative, credible, relevant and current information, research and policy analysis on genetic engineering, biosafety, biopiracy, agrofuels and the Green Revolution push in Africa.

©The African Centre for Biosafety www.biosafetyafrica.org.za PO Box 29170, Melville 2109 South Africa Tel: +27 (0)11 486 1156

Design and layout: Adam Rumball, Sharkbouys Designs, Johannesburg

# CONTENTS

Acronyms	4
Introduction	5
Structure of document	6
Background	6
Critique of COMESA policy	7
Flawed policy paradigms	7
Vested interests	8
Commercial Trade in GMOs	8
GM Food Aid	9
Usurping national sovereignty	10
Panel of experts	11
Regionally Centralised Risk Management	11
Public participation	12
Conclusion	13
References	14

# ACRONYMS

ACB	Africa Centre for Biosafety
AFSTA	Africa Seed Trade Association
AU	African Union
BCH	Biosafety Clearing House
BSP	Biosafety Protocol
COMESA	Common Market for Eastern and Southern Africa
DAFF	Department of Agriculture, Forestry and Fisheries (South Africa)
EAC	East African Community
FFP	Food, Feed and Processing
FAO	Food and Agricultural Organisation of the United Nations
FTA	Free Trade Area
GMO	Genetically Modified Organism
IAASTD	International Assessment of Agricultural Science and Technology
	for Development
MT	Metric Ton
NBF	National Biosafety Framework
OAU	Organisation of African Unity
PoE	Panel of Experts
SADC	Southern African Development Community
SANBI	South African National Biodiversity Institute
SANSOR	South African National Seed Organisation
USAID	United States Agency for International Development
WFP	World Food Programme of the United Nations

## INTRODUCTION

The African Centre for Biosafety (ACB) was very recently handed a copy of the Common Market for Eastern and Southern Africa's (COMESA) 'Draft Policy Statements and Guidelines for commercial planting of GMOs, Trade in GMOs and Emergency Food aid with GMO content ("Policy"). The document is dated June 2010 and has not been released in the public domain as far as we know. COMESA comprises of 19 African countries' geared towards promoting regional economic integration through trade and investment.

We have perused the Policy and are alarmed and outraged that COMESA appears to support the undermining and displacing of more than a decade's worth of international, regional and national biosafety policies and legislation. It intends to do this by usurping *inter alia*, the biosafety policy space of the Cartagena Protocol on Biosafety ("Biosafety Protocol"), regional policies on food aid and the sovereign rights of COMESA member states.

The Biosafety Protocol is globally accepted as the principle international treaty to regulate the cross border movement of GMOs (genetically modified organisms). It establishes minimum international standards to protect the environment and society from the risks posed by GMOs. African governments have played a crucial role in the development of this instrument and have crafted the African Model Law on Biosafety through an open, transparent and inclusive process over the past ten years. They have also developed their own national biosafety policies and laws.

The biotechnology industry, agribusiness, free trade proponents and the food aid industry are extremely frustrated by their inability to penetrate the markets in Africa. The proposed COMESA Policy adopts an aggressive approach to the wholesale proliferation of GMOs on the African continent by undermining national sovereign decision-making and step-by-step risk assessments. It attempts to create a clumsy, confusing, cumbersome and prohibitively exorbitant centralised regional system that is utterly at odds with best biosafety practice.

It is ACB's opinion that a small group of experts closely aligned to the Biotechnology, seed and agrochemical industry drafted the Policy behind closed doors. Stakeholders whose interests will be adversely affected by the far-reaching proposals contained in the Policy have been entirely excluded from the process, particularly African small-scale farmers and other sectors of civil society.

Further, it appears as if the United States Agency for International Development (USAID) has lent its considerable resource support to the process.

We reserve our rights to make further comments on the Policy. In the interim, we implore COMESA member states to reject the Policy out of hand at their next meeting scheduled to take place 12-17 July 2010, in Zambia.

### STRUCTURE OF DOCUMENT

This document provides important background and contextual information of ACB's work in the realm of biosafety legislation on the African continent, including our recent work on the Revised African Model Law on Biosafety and the African Biosafety Strategy.<sup>2</sup> Thereafter, we provide our critique on the Policy.

## BACKGROUND

The ACB is committed to rigorous biosafety regulations of GMOs on the African continent, based on the precautionary principle. We have actively participated in biosafety policy development at international, regional and national levels. The ACB has provided pro-bono comments on numerous African biosafety laws in an effort to guide civil society; improving such laws, specifically through bringing these laws in line with the AU Model Law on Biosafety and the adoption of stringent biosafety measures. In the course of such work, the ACB has exposed instances where such laws appeared to have been unduly influenced by industry interests and pro-GM governments such as the USA, particularly through USAID. This work is well documented.

ACB has provided comments on draft biosafety legislation over the past five years to the following African countries: Nigeria, Uganda, Kenya, Zimbabwe, Swaziland, Lesotho, Ghana, Zambia, Malawi, Mauritius and Cameroon. In some cases e.g. Kenya, Uganda and Nigeria, comments were made on more than one draft.<sup>3</sup>

Our work has been further enriched by playing an active watchdog role at a national level in South Africa, which has become the GMO gateway to Africa, almost 1900 GMO permits have been granted since 2003.<sup>4</sup> We have identified a number of shortcomings with South Africa's biosafety regulatory system, including the lack of transparency in decision-making and information sharing. There is also an over-reliance on safety data prepared by industry. Indeed, the biotech industry enjoys a high degree of self-regulation in South Africa. The lack of capacity for monitoring and administering the large volume of permits granted continues to be of grave concern for us. For example, there is currently only one staff member employed in the GMO Monitoring and Research Unit at the South African National Biodiversity Institute (SANBI), the government agency mandated to monitor the post commercialisation impact of GMOs on the environment.

African governments have been extremely proactive in drafting international biosafety policy and have shown a deep commitment to safeguarding the interests of all Africans, especially African farmers, in international negotiations. The Biosafety Protocol came into force in September 2003. In July of that same year the AU's Executive Council urged Member States to use the African Model Law on Biotechnology, drafted by the former Organisation of African Unity (OAU), to guide the development of their domestic biosafety legislation. The Model Law was developed in recognition of "..... the challenges faced by Member States to implement the Protocol and its weaknesses as an international negotiated instrument capable of regulating Biosafety in the continent, especially with regard to the development of domestic GMOs, the use of GMOs in contained systems, the approval of deliberate releases into the environment and approval and labelling of GM food ...".<sup>5</sup>

However, vested interests, including those of USAID and the biotech industry have consistently taken advantage of the lack of capacity on the continent to erode the spirit of the Model Law resulting in many African biosafety frameworks not meeting the minimum standards of the Biosafety Protocol.<sup>6</sup>

The ACB has previously highlighted concerns about Regional Economic Communities (RECs) administering biosafety in their blocs<sup>7</sup> as well as its inclusion in the AU Biosafety Unit's African Biosafety Strategy. Ostensibly the RECs have functional secretariats that would enable them to carry out biosafety work in Africa<sup>8</sup>. We have raised our serious concerns that the RECs have no capacity with regard to biosafety work and have not played any historical role in this regard; instead, they are preoccupied with promoting the trade and commercialisation of GMOs. For this reason, the RECs would rely on USAID and the pro-biotech machinery for expertise and capacity building in biosafety matters. We expressed the opinion that this combination would inevitably result in regional markets for GM products with lax, uniform and centralised regulatory processes. The COMESA Policy thus validatesour worst fears.

# CRITIQUE OF COMESA POLICY

#### Flawed policy paradigms

The introduction of the Policy makes the bold statement: "Agricultural biotechnology, among the diverse options available, has been recognized as a viable tool that would make a significant contribution for improving crop yields, household incomes, and the nutritional quality of staple foods in an environmentally sustainable way" (pg 4). There is certainly neither global nor African consensus on this view and indeed the antithesis was concluded after a 6-year study carried out under the auspices of the Food and Agriculture Organisation (FAO) and World Bank.

Fifty-four governments approved the results of the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) in 2008. The study found a "significant lack of transparent communication among actors", making the assessment of GM technology difficult. They found that performance of GM crops was highly variable, with "10-33% yield gains in some places and yield declines in others". The study pointed out that GMOs threaten to concentrate ownership of agricultural resources and that the use of patents "may drive up costs, restrict experimentation by the individual farmer or public researcher while also potentially undermining local practices that enhance food security and economic sustainability."<sup>9</sup>

All the COMESA countries have either ratified or are complying with the requirements of the Cartagena Protocol on Biosafety. At least 17 COMESA member states have developed their own National Biosafety Frameworks (NBFs).<sup>10</sup>

Stand alone national biotech policies	Draft biotech policies	Sectoral policies with reference to biotech and biosafety
Kenya, Madagascar, Malawi, Rwanda, Sudan, Uganda, Zambia and Zimbabwe	Burundi, Comoros, DR Congo, Eritrea, Libya and Swaziland	Ethiopia, Djibouti, Egypt, Mauritius and Seychelles

The Biosafety Protocol is well recognised as the principle international environmental agreement to regulate the trade in GMOs by the provision of minimum standards for safety measures to minimise the risk of GMOs to human and animal health and the environment. Although the Policy makes repeated references to the BSP, it is evident that a new set of regulations are being drafted, not only to displace the BSP as the key reference point for biosafety regulation, but also to usurp its role. The Policy text clearly identifies the frustration at the lack of Biosafety Laws in place in Africa and thus the absence of legal frameworks to approve GMOs for commercial planting, as required by the Biosafety Protocol.

#### **Vested interests**

This Policy has clearly been prepared by a group with vested interests in the commercialisation of and trade in GMOs on the continent, rather than an interest in ensuring the safety of the environment and best biosafety practice. COMESA's process is running parallel and in opposition to the work being done by the AU's Biosafety Unit under the Directorate of Human Resources, Science and Technology. Civil society involvement in COMESA's Policy process is ominously absent.

ACB has written extensively on the intrusion of USAID in the development of biosafety regimes in Africa, and has noted that USAID has stepped in to offer capacity building as well as infrastructural development in return for weak biosafety regimes." The Ugandan Biosafety Bill, for example, is typical of the kind of regimes developed with assistance from USAID. The objectives of the Bill clearly indicate that it is to be used as an instrument to facilitate research and development involving GMOs rather than ensure sound biosafety practice.

A further concern regarding USAID is its strong interest in pushing for the acceptance of GM food aid in Africa, a key objective in the COMESA Policy Guideline. The USAID's website brazenly states that, "The principal beneficiary of America's foreign assistance programs has always been the United States. Close to 80% of the USAID contracts and grants go directly to American firms. Foreign assistance programs have helped create major markets for agricultural goods, created new markets for American industrial exports and meant hundreds of thousands of jobs for Americans.<sup>12</sup>"

We therefore have serious misgivings about USAID's involvement in and support for the COMESA process and its Policy document.

#### **Commercial Trade in GMOs**

While South Africa is not a member of COMESA, it is a member of the Southern African Development Community (SADC), as are several COMESA members, namely: the Democratic Republic of Congo, Madagascar, Malawi, Mauritius, the Seychelles, Swaziland, Zambia and Zimbabwe. The issue of regional trade will be further clouded if, as is planned, COMESA, SADC and the East African Community (EAC) launch their 'Tripartite Free Trade Area' (FTA) by January 2012.

The bulk commodity trade in GMOs, termed 'food, feed or for processing (FFP)' under the BSP, is virtually non-existent in the COMESA region. Presently only three countries in Africa grow GMOs commercially, Burkina Faso, Egypt and South Africa. Egypt (the only COMESA member of the three) planted a miniscule 1,000 ha of GM maize in 2009.<sup>13</sup> In 2008, (the latest date figures available), 11,200,068 ha of maize were grown in the COMESA region.<sup>14</sup> Allowing for discrepancies in the data it is clear that at present GM maize production in COMESA is negligible.

South Africa remains the only country on the continent that grows the kind of quantities of GM maize that could be traded commercially. Historically, the vast majority of GM maize grown in the country was for domestic consumption. In fact, before this year, just three shipments of GM maize left South Africa for FFP, to Japan in 2005 and Malaysia and Iran in 2008. However, since the beginning of 2010 South Africa (which this year produced between a 4 and 6 million ton maize surplus) has exported nearly 350,000 MT of GMOs to COMESA member countries. The public outcry in Kenya at this news forced the Kenyan government to issue a media statement categorically denying that it had been informed that the shipments in question contained GMOs. This was in stark contrast to a statement released by the South African Department of Agriculture, Fisheries and Food a week earlier, which claimed that the Kenyan authorities had been informed that the consignments contained GMOs. Around this time, it also emerged that maize contaminated with GMOs that had not been approved in Kenya, had been entering the country since at least 2008.<sup>15</sup>

South Africa has a sizeable export trade in GM maize seeds, especially since 2005, the majority of exports were to the Philippines, Columbia and Argentina. It is worth noting, however, that South Africa has been exporting GM insect resistant maize (Monsanto's controversial Bt maize MON810) to Egypt since 2002.<sup>16</sup> In terms of COMESA Policy (p20), it is recommended that GM seed approved by one COMESA member should be approved by another, pending the 'similarity' of the receiving environments. Where the environments that the seeds are proposed to trade between are deemed different, a risk assessment body is to deliberate on this and provide an 'Opinion', which will then become 'ultimately the position of COMESA on a given application' (p.8). It is not clear from this how much say the potential receiving country has in the matter. As Egypt has been importing Bt maize seeds for almost 8 years, the potential that this GMO can be dispersed freely to COMESA members that lack adequate biosafety structures is extremely worrying.

The laissez faire drive for the harmonization of trade in GMOs across the COMESA region is particularly unsettling when one considers the volume of informal trade in agricultural goods in Sub-Saharan Africa. Studies have estimated that in the East African Community (EAC), where all members, except for Tanzania are also COMESA members, as much as 80% of all trade in agricultural produce is done through informal channels.<sup>17</sup> In 2005/06, approximately 31% (nearly 180,000 MT) of all maize traded between the D.R. Congo, Malawi, Mozambique, Tanzania, Zambia and Zimbabwe was done informally. The same study found that maize is by far the largest informally traded agricultural commodity in Southern Africa.<sup>18</sup> In a region where biosafety is in its infancy and where hundreds of thousands of tons of traded maize are officially unaccounted for, policies designed to foster an increased trade in GMOs will be disastrous for Africa.

#### **GM Food Aid**

Article 5 of the Policy deals with a harmonised approach to the regulation of GM food aid and in one foul swoop, intends to reverse national sovereign decisions made with regard to bans and other forms of restrictions on GM food aid imposed by COMESA member states in the past few years.

The issue of GM food aid is a highly contentious one, particularly in Africa. During 2002/03, several countries in Southern Africa faced severe food shortages. Lesotho and Swaziland authorised the distribution of non-milled GM food aid; Malawi, Mozambique and Zimbabwe requested that all US imported GM maize was milled before distribution; while Zambia and Zimbabwe (for GM food aid sourced from the USA) proposed outright bans on GM food aid. This affirmation of national

sovereignty drew a vitriolic reaction in Washington, with one unnamed US official being quoted as saying that 'beggars can't be choosers'. Much less attention and energy was drawn to the fact that at the time of the crises sufficient non-GM maize and other cereals (for which coincidently, no GM alternative existed) were readily available from the African region, India, Mexico and even the United States.<sup>19</sup>

Further evidence of the political manipulation of the African food crises for the advancement of the biotech agenda emerged in 2004, with USAID cutting off food aid to the Sudan in response to its demands that food aid be certified as 'GM-free'. Angola's request that all GM food aid be milled prior to entry resulted in US funding to the WFP being cut by around US\$400 million. Shortly after this funding cut, the WFP announced that it would have to halve the amount of food rations given to the majority of the 1.9 million people it assists in Angola, citing a funding gap as the primary reason.<sup>20</sup> In January 2010 Swaziland refused delivery of 3,000 MT of GM maize (an unspecified amount of which was designated as food aid), stating that it required all GM maize to be milled prior to entry. The granting of the permits to export the maize to Swaziland was not made public by the South African Department of Agriculture, Forestry and Fisheries (DAFF) until March 2010. In April 2010, two further permits were granted, to the same grain traders, for the same quantities. Questions posed by the ACB to the DAFF requesting confirmation as to whether these were the same permits re-granted, or entirely new ones, have to date not been answered.<sup>21</sup> In either case, it is indicative of the 'beggars can't be choosers' mantra that COMESA's policy seeks to perpetuate.

It is worth nothing that SADC has guidelines for the handling of GM food aid as a result of the controversy at that time. SADC made several recommendations including that food aid be sourced preferably from within the region and that GM food aid be milled.<sup>22</sup> COMESA's Policy is intended to ridicule and undermine the SADC policy.

The policy urges COMESA members to accept GM food aid in accordance with the "universal ethical and moral standing of saving lives" (pg23). However, beneath this noble cause lies the cynical fact that USAID spends over \$1 billion a year buying American crops from agricultural corporations and shipping them out as food aid. By insisting that this food aid be purchased from US companies, Congress is able to support U.S. industry while appearing to help the Third World.<sup>23</sup> This also opens the door for the contamination of the African continent and ultimately renders resistance to the technology futile.

#### Usurping national sovereignty

Possibly the most shocking aspect of the COMESA Policy is the dream of giving a small group of experts sweeping powers to make decisions on behalf of the region and usurp national sovereign decision making. We proffer the following as examples:

In the definitions section of the Policy, "**Opinion**" is defined as "the final position of the Panel derived from consideration of reports of the risk assessors or the Sub-Committee(s) that is ultimately the position of COMESA on a given application as communicated to the Member State by the Secretary General." (pg 8)

Under Article 2 of the Policy, COMESA undertakes to "direct the COMESA secretariat to formally inform every Member State of its obligation to recognize the guidelines and to submit and subject all applications for commercial planting of GMOs in its environment to the centralized regional risk assessment procedures. Member countries are also encouraged to await COMESA's Opinion

on the application before taking a national decision, given the fact that once commercially planted, a GMO may not be realistically restricted to only one Member State's territory." (pg 10)

Article 3.7 of the Policy provides that "it is mandatory under this policy and guidelines that such an application shall be forwarded to COMESA Secretariat for consideration by the PoE [Panel of Experts] under the centralized regional risk assessment mechanism. (pg 17) The document then concedes that the national government may come to their own decision, but goes on to say that "such a decision shall not be taken before receiving the Opinion sought from COMESA." (pg 18)

These clauses not only infringe unacceptably on the sovereign rights of member states but they also constitute a highly unworkable and expensive risk assessment procedure.

#### **Panel of experts**

COMESA's Policy establishes a Panel of Experts to review GMO applications and make findings and recommendations. It is worth nothing that a Roster of Experts has been set up under the Biosafety Protocol and there is no good reason why COMESA should duplicate this endeavour.

In terms of the Policy, member States are obliged not to take any decisions on GMO applications, until COMESA's Panel of Experts (Art 3.7, pg 18 of the Policy) has published as Opinion. Although the identities of those who will serve as experts on COMESA's Panel are not yet known, it is extremely disconcerting that South Africa's Dr Wynand van der Walt is a key role player in the COMESA process. Dr van der Walt's historic links with industry are well known; he was the long-standing General Manager of South Africa's seed industry body, SANSOR, a former board member of the Africa Seed Trade Association (AFSTA) and industry lobby organisation, Africabio.<sup>24</sup> He was a key role player in the drafting of South Africa's notoriously flawed GMO legislation and has strenuously opposed consumer demands for the labelling of GMO products in the country, despite calls from civil society to do so over the past 12 years.

#### **Regionally Centralised Risk Assessment**

The Policy aims to centralise regional assessment and national decision, ostensibly to create more transparency, cost effectiveness and the sharing of resources and information.<sup>25</sup> However, the Policy will do the exact opposite – giving a small group of experts draconian powers over national decision making and creating an expensive and convoluted process that does not add any further value to what has been agreed upon in the Biosafety Protocol.

Egypt is the only COMESA country that has approved planting of a GM crop (Bt maize). In Mauritius the NBF and legislation makes provision for regulation of GMOs in the following areas: for market release into the environment, transit, import or export.

The Swaziland legal framework covers confined field trials, pre and commercial releases of GM materials and live imports.

In Zambia, a precautionary stance exists, the policy states that approval for transfer, use and release of GMOs shall not be given where there is reason to believe that harm or damage may result.

In Kenya and Uganda several trials have been taking place under existing regulations. Most of the countries in the region including Burundi and Sudan require risk assessment and management measures before environmental release of GMOs.<sup>26</sup>

What is really envisioned by the COMESA policy is an expedited procedure that completely does away with field trials on a country by country level before approval for commercial release. This approach directly contradicts the Biosafety Protocol, which calls for proper risk assessment. These include field trials in order to assess possible adverse impacts and if necessary, for Parties to conduct environmental impact assessments. What the Policy intends to do is to allow GMOs that have been commercially approved for growing in Egypt for instance, to be approved by the PoE to be safe for release in Zimbabwe.

It boggles the mind as to how a small group of experts can give GMOs the thumbs up as having no environmental impacts over such a large geographic space with diverse environmental conditions. The Policy is simply ludicrous.

#### **Public participation**

The section dealing with public participation and information is bereft of substance and detail. Instead, the document claims that stakeholder input that 'adds-value in preparation for the final opinion' shall be sought, but the reader is not made aware of what precisely constitutes this 'value'. Brief mention is made of public consultation within COMESA member states, but no mechanisms are mentioned that would monitor a state's performance in public participation, merely that 'member states are encouraged to solicit comments and inputs from stakeholders'. We are told that the public will be informed of the risk assessment procedure through 'a radio announcement or (emphasis added) placement in at least 2 popular daily newspapers'. No further details (for example the medium of language) are provided. It is also worth noting that the average adult<sup>27</sup> literacy rate across the COMESA region is approximately 73%, and as low as 36% in Ethiopia.<sup>28</sup>

Reference is made in the Policy to the establishment of a central regional clearing house. The African Centre for Biosafety has already written to the South African DAFF (which houses South Africa's national competent authority for Biosafety) on three separate occasions, to highlight South Africa's non-compliance with the Biosafety Protocol. We have lodged a complaint with the Compliance Committee of the BSP; such has been the dereliction of duty on the part of the South African authorities. Despite it having granted close to 1,900 permits since it became a Party to the BSP in 2003, South Africa is yet to submit a single risk assessment of its own to the Biosafety Clearing House (BCH).

In 2008, Kenya reported receiving maize from South Africa that was contaminated with a GM variety that had not been approved in Kenya. Contrary to its obligations, South Africa has still not reported this to the BCH.<sup>29</sup> If the experience of South Africa's BCH is anything to go by, we have deep reservations as to how COMESA members will manage to maintain an up to date, transparent and workable central biosafety clearing house.

Further, according to Internet World Stats, as at March 2009, the internet penetration across the COMESA region averaged just 8.3% of the population. Only Egypt, Mauritius and the Seychelles had achieved over 20% penetration. Excluding these three countries and average internet penetration in the region plummeted to 4.6%.<sup>30</sup> Oddly enough, COMESA's draft GMO policy document singularly fails to mention the paucity of internet access in the region, or the need to increase this if its main biosafety portal is to be accessible to more than a tiny minority of COMESA's nearly 400 million citizens.

# CONCLUSION

The ACB condemns the COMESA policy in its totality and requests that its member states reject it out of hand, and dedicate themselves to stringent biosafety on the continent, at the national level.

We strongly support the report by the International Assessment of Agricultural Science and Technology for Development (IAASTD), which highlights the many scientific uncertainties and potential negative socio-economic and environmental impacts of GMOs. The IAASTD suggests rather, that the road to food security, sovereignty and sound environmental practices for current and future generations, lies in adopting and enhancing ecological agricultural systems, often based on local knowledge.<sup>31</sup>

#### References

- 1 COMESA members comprise of the following African countries: Burundi, Comoros, D.R Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe.
- Swanby, H. 2009 The Revised African Model Law and the African Biosafety Strategy (briefing paper no. 9) and Ongoing concerns about harmonisation of Biosafety Regulations in Africa. African Centre for Biosafety www.biosafetyafrica.org.za
- 3. These can be accessed on the ACB website: www.biosafetyafrica.org.za
- 4. Compilation of GMO permit lists of the Department of Agriculture, Forestry and Fisheries http://www.daff.gov.za/ (accessed 09/07/2010)
- 5. African Union Commission. Department of Human Resources, Science and Technology. **Biosafety Brochure**. http://www.africaunion.org/ (accessed 28 August 2009)
- 6. Please see www.biosafetyafrica.org.za for critiques of 11 African NBFs).
- 7. Swanby, H. 2009 The Revised African Model Law and the African Biosafety Strategy (briefing paper no. 9) and Ongoing concerns about harmonisation of Biosafety Regulations in Africa. African Centre for Biosafety www.biosafetyafrica.org.za
- 8. African Union. November 2006. Directorate of Human Resources, Science and Technology. African Strategy on Biosafety. http://www.africa-union.org/ (accessed 9th June 2009).
- 9. Abate, T. *et al.* 2008. Executive Summary of the Synthesis report of the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD).
- 10. April 19-20, 2010, COMESA Regional Workshop On Draft Regional Biosafety Policies And Guidelines
- 11. See in particular Biosafety in Africa, a complex web of interests, www.biosafetyafrica.org.za.
- 12. GRAIN. April 2005. USAID Making the World Hungry for GMO Crops. http://www.grain.org/briefingsfiles/usaid-04-2005-en.pdf (accessed 28 August 2009) link no longer works at this time.
- 13. http://isaaa.org/resources/publications/briefs/41/executivesummary/pdf/Brief%2041%20-%20Executive%20Summary%20 -%20English.pdf (accessed 09/07/2010)
- 14. http://faostat.fao.org/site/567/DesktopDefault.aspx?PageID=567#ancor (accessed 09/07/2010)
- 15. African Centre for Biosafety (2010). A good neighbor? South Africa forcing GM maize onto African markets and policymakers. ACB briefing paper no.16.
- 16. GMO permit list 2002. Department of Agriculture, Forestry and Fisheries. http://www.daff.gov.za/ (accessed 09/07/2010)
- 17. African Centre for Biosafety (2010). A good neighbor? South Africa forcing GM maize onto African markets and policymakers. ACB briefing paper no.16.
- 18. ibid
- 19. **GM Food aid Africa denied choice once again?** (2004). African Centre for Biosafety, Earthlife Africa, Friends of the Earth Nigeria, GRAIN, SafeAge. http://www.biosafetyafrica.org.za/index.php/20100207289/GM-Food-aid-Africa-denied-choice-onceagain/menu-id-100025.html (accessed 11/07/2010)
- 20. Ibid.21.
- 21. African Centre for Biosafety (2010). A good neighbor? South Africa forcing GM maize onto African markets and policymakers. ACB briefing paper no.16.
- 22. http://www.unep.org/dewa/Africa/publications/AEO-2/content/164.htm (accessed o8/07/2010)
- 23. Patel. R, Delwiche, A. The profits of famine: Southern africa's long decade of hunger. Food first backgrounder, fall 2002, Volume 8, no. 4
- 24. http://www.seedquest.com/forum/v/VanDerWaltWynand/07jul.htm accessed 09/072010
- 25. April 19-20, 2010, COMESA Regional Workshop On Draft Regional Biosafety Policies And Guidelines
- 26. April 19-20, 2010, COMESA Regional Workshop On Draft Regional Biosafety Policies And Guidelines
- 27. For the purpose of this indicator UNStats deems anybody over 15 years to be an adult.
- 28. http://unstats.un.org/unsd/demographic/products/socind/literacy.htm (accessed 08/07/2010)
- http://biosafetyafrica.org.za/index.php/20100706317/Letter-to-Minister-of-Agriculture-regarding-South-Africa-s-noncompliance-with-information-sharing-requirements-of-the-Cartagena-Protocol.-6-July-2010/menu-id-100026.html (accessed 08/07/2010)
- 30. http://www.internetworldstats.com/stats1.htm (accessed 08/07/2010)
- 31. Abate, T. et al. 2008. Executive Summary of the Synthesis report of the International

Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD).