

Genetic Engineering and Food Sovereignty

Sustainable Agriculture is the *Only* Option to Feed the World

Reader on Studies and Experiences

Threats by GM-Agriculture,
Ways towards Sustainable Agriculture and
Lobbying Work in Developing Countries



by EED and Partners



Church Development Service EED
Bonn/Germany, 2009

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Cathy Rutivi, Julius Mugwagwa

Introduction

The debate surrounding genetically modified organisms (GMOs) remains an important one for consumers and consumer organisations the world over, and is characterized by strong views for, and against the technology. The debate is of particular interest to Africa, where the countries are yet to embrace the new technology and where food security challenges tend to amplify the dilemma faced by decision-makers. Consumers, represented through the work of consumer organizations, are a very active and vocal constituency in this debate, as it unfolds in Africa.

Genetic engineering involves techniques of combining genes from widely different types of organisms, which do not occur naturally. Hence, predicting the impact on the environment and human health, in the future, is difficult. The uncertainties and controversies around GMOs, or products, centre on many issues including trade, food and environmental safety. With regard to the environment, there are fears of gene flow from GM-crops to non-cultivated plants, agronomic risks from resistance problems in GM crops and in weeds, co-existence challenges between fields of farmers using GM-crops and those not using them; among others.

On the basis of these concerns, an internationally binding Cartagena Protocol on Biosafety (CPB), governing international trade in GMOs, was adopted on 29th January 2000, under the UN Convention on Biological Diversity. The main objective of the Protocol is “to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health, and specifically focusing on trans-boundary movements.”

The objective of this paper is to inform the reader on how the consumer movement has contributed to the GMO debate in Africa in the past few years and to highlight the potential socio-economic impacts on African consumers. Firstly, the paper summarises the consumer movement and its work with the Joint Advocacy Project on GMOs; and

secondly looks at the potential social, ethical and cultural impacts. Economic and environmental impacts are also discussed. The Socio-Economic Impact Assessment tool is highlighted as one of several tools to guide bio-safety decision-making policy. A few recommendations and policy implications are given at the end of the paper.

CI's GM Campaign and Contributions to the Debate

Consumers International (CI), the global movement that represents national consumer organizations, has played an active role in making consumers across the globe aware of the need for appropriate, consumer-friendly policies and bio-safety regulations.

In its effort to undertake significant campaign-oriented activities through the creation of a GMO campaign within its Food and Nutrition Programme, CI's past work in Africa, through most of its members, included work on creating awareness among citizens of different countries and lobbying governments to take precautions in applying and adopting the technology and its products.

Between 2004 and 2005, the Africa office convened several workshops and conferences for stakeholders to debate the issue, raise awareness and educate consumers on the technology. A study published in 2005, on the status of biotechnology and bio-safety in six selected countries of the world, including South Africa, indicated that at that time the majority of countries had no effective legal frameworks to regulate the technology. South Africa was then the only African country that had commercialized GM-crop production. However, since then Egypt and Burkina Faso¹ have joined the so-called 'biotech countries,' while the number of countries with legally-binding regulatory frameworks has increased only marginally².

Consumer organisations in Africa were being requested to advise their governments on whether they should accept GM food in the face of mounting hunger in their countries. In Zambia, the Zambia Consumers Association (ZACA) advised the government to take a precautionary approach. Other CI members in the region, including the Consumer Council of Zimbabwe (CCZ), Pro-Consumers, in Mozambique, and the Consumers Association of Malawi (CAMA), all took the position that donated GM corn or maize should be milled to eliminate the risk that it might be planted.

In 2005, CI launched its 'Consumers Say No to GMOs' campaign in response to the increase in GM food and crops and highlighted the gaps in policies and a lack of protection for consumer rights. CI was calling for mandatory labelling of GMOs, independent testing for safety and protection of GM-free crops from contamination.

The success of the three-year Joint Advocacy Project 'GMOs a threat to Food Sovereignty' promoted cross pollination and fusion of ideas, where partners from

Africa, Asia and Latin America, coordinated by Evangelischer Entwicklungsdienst (EED), worked to promote the rights of farmers to save their seed and to farm the way they choose; the rights of consumers to know and to make informed choices; and where vital and detailed researched information was exchanged and shared. As part of the Joint Advocacy Project, CI's main contribution was to organise a workshop on GM Labelling in Africa- 'Protecting the African Consumer's Right to Choose,' which was held from 9th to 10th August 2006, in Johannesburg, South Africa, in collaboration with ACB, another Joint Advocacy Project partner.

The event brought about 30 participants together, including 13 EED sponsored participants, made up of CI members and staff, Joint Advocacy Project members and members of the South African organisation, SAFeAGE. Other participants included South African government officials, business representatives, and other stakeholders. The outcome was capacity building for consumer activists and a campaign event at a local supermarket. Training sessions provided participants with new information to reinforce their efforts with respect to lobbying for labelling, stricter bio-safety legislation, bans and GM-free areas and provided outreach and education to consumers, activists and farmers. Feedback from participants indicated that the objectives had been achieved, and that participants appreciated the division between the more theoretical learning in the workshops, and the practical experience of the campaign event.

Currently, CI is implementing a project in eight countries between January 2008 to January 2010, aimed at increasing the prioritisation of bio-safety in the developing world for the benefit of biodiversity and consumer health and safety. This is based on the principle that consumers have the right to access a healthy, sustainable environment, to choose what is right as judged by them, and to be informed. They should be able to skilfully advocate their own interests in this area, and ensure implementation of the CPB, particularly with respect to public awareness and participation, the Biosafety Clearing House and risk assessment and risk management, as well as development and implementation of effective national legislative frameworks.

In Africa, three countries namely, Kenya, Mali and Morocco are participating in this project. One of the activities aimed at building the capacities of consumer organisations in the participating countries, for campaigning and advocacy broadly in the area of biosafety/GMOs, targeting different stakeholders in the regulatory decision making process, was done through a training workshop on these areas in Nairobi, in September 2008. There were participants from ten African countries- Kenya, Mali, Morocco, Nigeria, Malawi, Zambia, Zimbabwe, Uganda, Ghana and South Africa. It is envisaged that efforts such as these will go a long way in strengthening bio-safety policies and regulations in the participating countries and in ensuring that consumer's rights are upheld.

Impact on Consumers

Socio-economic, cultural and ethical considerations have not received as much attention as the risks to the environment, human health and biodiversity. Article 26 of the Protocol on Socio Economic considerations says that:

'The parties, in reaching a decision on imports under this Protocol or under its domestic measures implementing the Protocol, may take into account, consistent with their international obligations, socio-economic considerations arising from the impact of Living Modified Organisms (LMOs) on the conservation and sustainable use of biological diversity to indigenous and local communities. The parties are encouraged to cooperate on research and information exchange on any socio-economic impacts of LMOs, especially on indigenous and local communities'.

Consumer policy seeks to ensure that basic consumer rights are recognized and promotes understanding of people's rights and responsibilities as consumers. The eight universal consumer rights which form the basis of consumer campaigns are: the right to safety; the right to be informed; the right to choose; the right to be heard; right to redress; right to consumer education; right to a healthy environment and the right to satisfaction of basic needs; along with the five consumer responsibilities of action, social concern, critical awareness, solidarity and care of the environment.

Social, Ethical and Cultural Impact

African consumers also want to preserve their traditional foods and cultural practices and patterns, for example on-farm seed-saving by farmers (explained further, below). The general African consumer believes that local food forms part of an identity, a natural form of expression that cannot be found anywhere else, therefore consumer preferences reflect this strength of cultural identities. Thus any form of new technology that appears to threaten this status is of concern to African consumers with regard to undermining local cultures and value systems connected to food consumption and production.

The consumer movement in Africa tends to strengthen the position of groups of consumers who are often marginalized. Women play a critical role both as producers and consumers of goods and services. In Africa, women are the main decision-makers with respect to household consumption issues and are generally responsible for buying food for their families and managing household disposable incomes. A number of consumer organizations in Africa have organized women's buying clubs.

In recognition of the importance of youth in the consumer movement, CI has also introduced a consumer responsibility day (15th October) with the aim of promoting consumer education curriculum in schools. Guidelines on consumer education for youth have been prepared and disseminated to national governments.

The right of farmers to save seeds is another contentious issue with GM crops. These could impact on the traditional practice of saving, reusing, sharing, exchanging and selling farm-saved seeds. This traditional practice is widely regarded as a foundation of genetic diversity in agriculture today. Therefore stringent application by multinational companies of intellectual property protection systems on seeds potentially threatens food security and the way communities have always functioned. (TWN Briefing 3 for MOP4, 2008) GM crops have increased the biotech industry's control over seed supply, which is worrying as it creates monopolies and a culture of dependence for small-scale producers. In countries where there is an undue reliance on imported seeds, food production is undermined when foreign currency is in short supply, as is the case in Zimbabwe.

In South Africa where GMOs are grown commercially and sold in some supermarkets, consumers have successfully lobbied for the Consumer Protection Bill to make labelling a requirement of the legislation, to inform the public which foods are GM-free and which contain GM products. From 2006, the South African Freeze Alliance on Genetic Engineering (SAFeAGE), a network of organised consumers, initiated a nation-wide campaign for mandatory food labelling and support for a GM-free food list in South Africa. SAFeAGE has been successful in mobilizing consumers, educating and creating awareness on the debate nationally. Their well-researched and detailed submissions to the National Consumer Tribunal resulted in the success of the Consumer Protection Bill retaining its important, original sectional text on labelling of GMOs, which had been removed.

Economic Impact

To the ordinary consumer, GM crops have not brought the much-touted benefits. They are not necessarily cheaper, or of better quality. Industry still drives the choices on the traits being imparted to the crops, with herbicide tolerance and insect resistance being the most prominent. Thus, currently, the commercialized GM crops are largely benefiting the agribusiness and seed industries that control GM traits and the chemical products associated with GM crops. Therefore, the increase in GM crops in the producer countries is more the result of aggressive biotech industry marketing strategies than of benefits being derived from the use of the technology.

Moreover, GM crops have not shown any added benefits in tackling hunger in Africa. Most GM crops grown are destined for animal feed and none have been introduced to address hunger and poverty issues. In developing countries most GM crops are grown as cash crops for the export market, usually at the expense of food crops (Friends of the Earth, 2006).

The famous South African cotton farmers of the Makhathini flats in KwaZulu Natal, have been the flagship of Monsanto experiments. While they have tried to portray them as a success story, some researchers including Biowatch South Africa have been able to prove otherwise, with some farmers struggling to repay their loans. A majority of

the farmers have not corroborated the much touted significant yield increases, leaving some observers to conclude that the farmers highlighted as successes are only an exception, and not the rule. There is also documented evidence³ that the sweet potato project funded by Monsanto in Nairobi, Kenya failed, as GM yields were surpassed by non-GM sweet potatoes.

Environmental Impact

Research has shown that a decline in soil fertility and erosion has been associated with the intensive cultivation of soya beans in other parts of the world. (FoE, 2006) Even though GM forest trees do not attract the same immediate health concerns as GM food crops, in reality they pose an even greater threat than do GM crops because they impact directly on the natural forests that are essential for the survival of the planet. Trees are larger and live longer, and therefore can spread transgenes further and wider, while their extensive root systems are a hotbed for horizontal gene transfer and recombination (Cummins J & Mae-Wan Ho, 2007)

Table1: Potential Environmental Impacts of GMOs and their Consequences for Consumers

Identified Issue	Potential Negative Impacts on Environment	Consequences for Consumers
Mutation of genes once inserted into the organism	Organism could out-compete naturally occurring species Possible reduction of yields	Food security risks Unknown impacts on consumer's health if new strains of viruses arise
Interaction with wild and native population varieties	Modification of non-target crops – pose a threat to crop biodiversity. GM crops could compete with, and substitute crops of traditional farmers	Health risks Reduced choice of seeds, undermine food security
Herbicide resistant genes going into weeds	More problematic weeds, require much stronger chemical control	Adverse health impacts due to chemical pollution
Widespread use of GM crops could lead to the development of resistance in insect populations exposed to GM crops.	Worse crop attacks by pests	Food insecurity as a result of reduced yields

Source: Compiled from a CI Africa report by Hafashimana (2005)

The potential negative impacts of GMOs on the environment are summarized in Table 1 above. As a result of their impact on the environment, these potential negative impacts are likely to threaten consumer's food security status.

Socio-Economic Impact Assessments

A number of tools can assist in guiding decisions on research, development and introduction of GMOs. The socio-economic impact assessment tool is a potential participatory tool for use in setting processes for bio-safety policy e.g. national bio-safety framework, bio-safety regulation or national law. It helps decision makers assess the potential benefits and risks of GMOs. (Elenita C. Dano, 2007) Thus, the assessments on GMOs should not be made when decisions have already been taken, but should be considered at all the different stages of the process: from contained experiments, to field trials, up to the time before commercial release.

Implications for Policy

The different concerns raised above confirm that effective regulation of biotechnology requires engagement of different stakeholders within the national context. Consumers have a role to play in shaping both the technology and the regulatory systems for the technology, from the perspective of the basic consumer rights, as highlighted earlier, and as enshrined in Article 23 (Public Awareness and Participation) of the CPB. CI has played, and continues to play an active part in ensuring that consumers are informed and treated as important stakeholders in this issue. For African countries, because of shared cultures across national boundaries, one key component of engaging consumers in the GMO debate is ensuring that citizens are educated on the potential impact of uncontrolled cross-border movement of seeds or other planting material. There is, thus, a case for a regional approach to biotechnology regulation broadly, and specifically, for educating citizens about biotechnology.

The differences in technological capacities, and regulatory preparedness, amongst African countries, makes a regional approach as much a challenge, as it is an imperative. The following statement, made after the experience of the 2002-03 food aid debacle, epitomizes the challenge:

'How, for instance, was Malawi to move maize donated by the United States, and thus obtaining [genetically-modified] Bt-maize, through Tanzania in mid-2002 in the absence of complementary biosafety protocols in Tanzania and Malawi, and in the absence of associated testing machinery?' – Steven Were Omamo and Klaus von Grebmer, 2005:2⁴.

At the same time, while acknowledging challenges such as the above, the reality is each country is sovereign and has an obligation to protect its citizens through effective decision-making and support systems. The following statement issued by the United Nations on 27th August 2002, following the food aid crisis acknowledged that;

'Concerns have been expressed in southern Africa about the unintentional introduction of GM maize varieties into the region as a result of plantings or spillage of whole kernel maize provided as food aid ...' but further noted that 'Based on national information from a variety of sources and current scientific knowledge, FAO, WHO and WFP hold the view that the consumption of foods containing GMOs, now being provided as food aid in southern Africa is not likely to present human health risk. Therefore, these foods may be eaten...' before reiterating that ...'The ultimate responsibility and decision regarding the acceptance and distribution of food aid containing GMOs rests with the governments concerned, considering all the factors outlined above' (United Nations, 2002)⁵.

For poor countries; battling to feed their populations in the backdrop of unprepared regulatory systems, and in the face of powerful corporate actors, the challenges in making the right decisions are not less enviable. In these, food aid scenarios, there are contentions that not enough is being done by donor countries to source food aid from non-GM sources, as confirmed by similar experiences in Angola and Darfur in 2004. This makes it difficult to separate food aid from the aggressive efforts by some countries to promote GM crops and foods in developing countries (Prendergast, 2004)⁶.

The Economic Commission of West Africa (ECOWAS), in support of biotechnology, is currently geared to implementing its action plan, and thus far the recommendations of consumer organisations have not been fully incorporated into these plans.

In Ghana the presence of GMO rice attracted media attention and consumer organizations were able to alert consumers. However despite all the efforts to stop the rice from entering Ghana's markets, it later found its way to other markets in West Africa.

Recommendations

- Countries should be free to exercise their sovereign decisions on imposing restrictions on GM food aid while not jeopardising the lives of their citizens.
- Hence, it is imperative that partners, donors and stakeholders respect international law, regional guidelines and national regulations and restrictions imposed on GM food.
- Donor partners should respect the choices made by food aid recipient governments, providing GM-free foods and alternatives such as cash in kind needed for own purchases, or for cash transfers to targeted beneficiaries.
- Implementing bio-safety laws and harmonisation of policies related to the movement of foods across borders becomes important in addressing the challenges and crises that may arise in the regions and in the continent as a whole.
- Civil society organisations are key stakeholders in GMO policy processes, starting from development of the policies right through to their implementation,

monitoring and evaluation. They play a crucial role in raising consumer awareness by providing information and through their advocacy for social and economic justice to small farmers and indigenous people.

African countries should move fast to develop bio-safety polices and GM-related legislation for consumer protection, with labelling laws that give consumers choices.

The Consumer Movement's Key Demands:

- Consumers must have a choice.
- Consumers must be informed via unambiguous and clear labelling. We are demanding mandatory labelling of GM foods.
- Governments must get their houses in order and formulate comprehensive and unambiguous bio-safety bills.
- Liability for use of GM foods rests with the originator (multinational corporations) rather than the end user (consumers and African farmers).

Conclusion

Since no known benefits from this technology have been derived by consumers, small farmers and the environment, there should be more emphasis on alternatives normally available to farmers, and which can be easily adapted. Consumers have the right to know what they are eating. Therefore appropriate labelling of goods gives them the power to make informed choices based on safety and environmental friendliness, while addressing ethical and religious concerns.

The African consumer's food security and livelihoods are threatened as farmers are denied access, or are required to pay a fee for the patented seeds. (Muchopa C. 2005) This also proves that no significant economic benefits have accrued to the majority of Africa's small-holding farmers.

African consumers have been at the receiving end of GM food, as food aid and GM imports enter the countries undetected, and these food items are forced on unsuspecting consumers. Several tests done by SAFeAGE in South Africa have revealed that some foods contain GM ingredients but are not labelled. Other African countries have also reported GM foods on their store shelves. Since most countries are evaluating such technologies to improve crop yields, it is also important that socio-economic and environmental effects are taken into consideration. This will address consumer concerns as well as safeguard the environment and protect small farmers and the rights of the indigenous groups.

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¹ (Source: *International Service for the Acquisition of Agri-biotech Applications, July 11 2008 Bulletin*)

² The following countries had legally-binding frameworks as of October 2008: Burkina Faso, Egypt, Malawi, Mauritius, South Africa, Zambia and Zimbabwe (source – Mugwagwa J T (2008), PhD Thesis, The Open University, UK)

³ e.g. see <http://www.organicconsumers.org/monsanto/africapotato020204.cfm>

⁴ Omamo, S.W. and von Grebmer, K. (eds). *Biotechnology, Agriculture and Food Security in Southern Africa*, Washington DC and Harare: IFPRI and FANRPAN, 2005.

⁵ UN statement on the use of GM foods as food aid in Southern Africa: <http://www.fao.org/english/newsroom/news/2002/8660-en.html>

⁶ In: GM food aid controversy erupts again in Africa: article by Kate Prendergast, June 6, 2004: <http://www.truthforce.info/?q=node/view/262>