Africa Office
Private Bag A6215, Avondale
Harare, Zimbabwe
Tel: +263 4 302 283
Fax: +263 4 303 092
e-mail: roaf@harare.iafrica.com
www.consumersinternational.org/roaf

Conference
"Biosciences and their Challenges in International Law"

Organised by Konrad Adenauer Stichtung
Bonn / Petersberg, 22-23 Nov. 2004

Presentation by Amadou C. KANOUTE

"Green genetic Engineering in the light of Environment protection, Health and Poverty Alleviation"

I would want to record my thanks to the Konrad Adenauer Foundation for initiating this type of dialogue.
Then let me concur with most of the presenters that there are risks and opportunities in biotechnology.
Then I have to make a clarification on one point, as some parts of the debates yesterday –to my mind- did not set that very clearly: Civil society organisations and NGOS are not against all technology.
In the case of biotechnology —we have concerns with a certain subset of biotechnology called "genetic engineering" [GE] (aka "genetic modification"), but are not against all uses of biotechnology. The example of the development of the New Rices for Africa (NERICA) is a good example of biotechnology that we support and I will come back to that later in my presentation.

What are the issues we are concerned about in GE?
The controversy comes with "genetic engineering" and, more specifically, the recombinant DNA technologies (the so-called "cut and splice" technologies).
Reasons for the controversy include:

i) the lack of control over where the genetic material is inserted into the host genome, which can lead to many unexpected effects and,

ii) the fact that the genetic cassettes (which contain the transgene of interest, a marker gene and appropriate regulatory elements) are designed to be mobile (this facilitates their insertion into the host genome), which could lead to increased genetic instability of the transgene. The mobility of the genetic cassette may facilitate insertion into the host genome, but it could also mean that the transgene has a higher probability of moving around in the genome rather than staying. And each time the transgene moves within the genome, this could result in an "unexpected effect."

Aware of these potential hazards, Consumers International believes that the consumer voice has been overlooked while GE seeds, crops and foods are rapidly introduced into the market, often with minimal regulation.
The regulatory framework we advocate for would include, among others, 4 basic principles and elements; which we see as crucial parts and parcels of any transparent marketplace geared towards a just, equitable and sustainable distribution of existing resources in a globalising world:

1. Safety: We believe a basic threshold of reasonable certainty of no harm to human health and the environment should be reached before any goods are marketed.
Unfortunately the environment within which the safety debate has been conducted has been marked by opacity and silencing of any dissenting voice by key players be they governments or corporations. Examples of such are:
- the dismissal of the British Minister for Environment in June 2003 for –reportedly- refusing to back untested use of GM plants;
- the dismissal of one of the world's leading GM researcher Dr Arpad Pudzai from the UK Rowett Institute research centre, for going public with alarming research findings about rats fed on GM potatoes suffering stunted growth and immune system damage;

Anyone would agree that such an environment is not conducive to securing consumer confidence. This is particularly crucial now as even the WHO acknowledge while they

have no evidence to say that it is dangerous to consume products that contain GMOs, they also recognise that they do not know the adverse effects of GM foods and urge for further research.

2. Traceability: a mechanism should be put in place that will make it possible to trace all foods derived from GMOs and their ingredients to facilitate the proper and fast identification of products and their ingredients.
We believe that science -by essence- cannot give definite answers so any scientific innovation should be monitored during production, marketing and post marketing.
The traceability mechanism will facilitate identification of the sources of problems and will be an engine for continued scientific innovation and improvement.
Without a traceability mechanism and labelling in place it is difficult to argue that no disease or accident thus far is associated or can be attributed to consumption of product derived from genetic modification.

3. Liability: While the debate between scientists is still raging on the risks of GE contamination and pollution, policy makers, farmers and consumers still struggle with the question of who is liable when a problem of contamination of a nearby conventional field happens or when milk from cows injected with a GM substance, like r-BGH, causes health problems to consumers?
One of the principles of a fair and transparent marketplace is for producers to reap the benefits of their innovation and products when they deliver, or bear responsibility when the same products fail to deliver or cause harm to a third party. It is only fair that the onus should be put on the developer of the technology in case GM crops contaminate organic or other non-GM varieties.
But policy makers, GM corporations, farmers and consumers are yet to get to a conclusive agreement on the issue of liability, while the issue of coexistence of the different types of agricultures is turning into a nightmare for them.

4. Labelling: For any market to function efficiently, product information is key. The primary source of information for a consumer to exercise his right to choice is labelling. It is our view that markets that fail to provide this basic requirement may mislead consumers and spur uncompetitive business practises that in turn can undermine consumers' economic interests.

These four basic principles (encapsulated in the 4 letters STLL) are the corner stones of CI's global campaign on GMOs.
We believe that any comprehensive regulatory framework that seeks to maximise on the benefits of a technology while minimising its potential socio-economic negative effects should uphold these principles; as a way to carry public confidence.

Now comes another set of critical ethical issues that we need to consider when we discuss the role GE can play in poverty alleviation in a developing country.

1. A major ethical issue is what to do about the huge costs associated with all the needed capacities -including the regulatory framework I have just mentioned-, the ability to monitor and enforce laws, the institutional infrastructure and the human resources required for the responsible use of genetically engineered organisms.
Then the question arises for any policy maker whether the potential benefits of GE organisms can offset these costs and whether it is economically desirable?

2. Another very major ethical concern of GE is the IPR (intellectual property rights) issue vis-a-vis farmers' rights, especially the right to save seeds.
The European Free Trade Association (members of which are Norway, Switzerland, Iceland, Liechtenstein) is in the process of negotiating a bilateral free-trade agreement (FTA) with the Southern Africa Customs Union (SACU members-Botswana, Lesotho, Namibia, Swaziland and South Africa-) that would require SACU members to allow patents on "biotechnological inventions." Since this term isn't defined, that would mean that potentially patents on both plants and animals may be granted.
Furthermore, the free trade agreement would ask SACU members to join the International Union for the Protection of New Varieties of Plants (UPOV convention), which is a specific form of intellectual property protection for plants.
New signatories to the UPOV convention would have to sign on to the 1991 version, which forbids farmers from exchanging seeds of protected varieties and also severely curtails or eliminates farmers ability to save seed.
Such PR provisions -especially the one restricting farmers' right to save seed- would be very anti-farmer and very anti-sustainable agriculture, as up to 90% of seeds planted in SACU countries are farm-saved seed and also raise serious ethical concerns!
In addition, the IPR provisions in the EFTA FTA with SACU clearly contradict the position taken by the African Group at the June 2003 TRIPS Council meeting: "Patents on life forms are unethical and the TRIPS Agreement should prohibit them."
The IPR provisions associated with "genetic engineering" are very problematical for farmers, for consumers and the overall socio-economic developmental needs of our countries.

For all these reasons, it might make more sense to put scarce money in other technologies that are more ecologically and socially rational or in the development of other alternative cropping systems or pest control mechanisms that may yield the same goals as the GE/GM approach.

Rather than ask how "green genetic engineering" can fit it in with environmental protection, health and poverty alleviation, I think the more important point is to define the problem that needs solving and then talk about the various different ways -and biotechnology or "green genetic engineering" may be one way out of numerous ways- to solve the said problem.

I'd argue that "genetic engineering" is not the ideal solution to agricultural problems, especially in developing countries.
I'd argue that a more holistic, agro ecological, participatory approach is more appropriate.
And I'd argue for an approach that is more knowledge-intensive rather than capital intensive.

Three examples:
1. A perfect example is the approach to the stemborer pest of maize in Africa. The "genetic engineering" approach is the IRMA (Insect Resistant Maize for Africa) project. The project has cost US$7 million so far, and is a joint project of CIMMYT, Syngenta, KARI, etc. The IRMA project has not released any varieties and is only now getting around to field testing.

On the other side we have the ecologically rational "push-pull" project of ICIPE (International Centre for Insect Physiology and Ecology) that has led to increase in farmer incomes and increased soil fertility.
The push-pull system effectively controls stemborers, simply by changing the cropping system. It involves interplanting maize with Desmodium and planting Sudan grass or Napier grass around the edges of the field. That system is based on a cropping system that repels (or push) the stemborer away from the maize and attracts (or pull) them towards the trap crop.
Lack of funding for the “push-pull” system has prevented Dr Hans Herren the Executive Director of the ICIPE to extend the work to Ethiopia and Tanzania and he had to use some of the money from his World Food Prize won in 1995 to fund the spread of the system.

2) The same push-pull system has given valuable results in controlling the Striga: a very serious weed pest in maize and other cereals (e.g. millet, sorghum, etc.) while the GE approach is to engineer herbicide tolerance into maize (so that you could spray a herbicide to kill the Striga).

3) The GE drought tolerant rice versus the NERICA (New Rices for Africa). The Nerica were developed by the West Africa Rice Development Association through embryo rescue and backcrossing of the farmers’ and women’s most preferred traits from both the African and Asian varieties. This resulted in higher yields, 2 to 3 times that of traditional rice varieties, resistance to the African rice gall midge , the worst rice insect pest in West and Central Africa.
The Nerica varieties are now grown by 20 000 farmers and released in 10 West African countries and 2 countries in Central and East Africa. The Warda is planning to increase area cultivated under Nerica from 24 000 hectares to 210 000 hectares in four years.
In addition to the benefits mentioned, some of the process of the development of the Nerica was very participatory, where the rice farmers were actively involved in the early stages of the research, determining which traits were important to them and growing and selecting those traits themselves in a process called PVS –participatory variety selection- that also involves community seed production.

Dr Monty Jones, a scientist from Sierra Leone who led with his colleagues the development of the Nerica has just received the 2004 World Food Prize Award and the Hunger Prize in 2003.

What are the common denominators to these alternatives to GE?

- They are all about maximizing the resources that farmers have -thus alleviating poverty in rural areas- rather than developing products to sell them.
- Their initiators failed to get the necessary support –both from public and private sources- to further their work.
- These success stories such as the Nerica and the pull-push system do not receive the recognition they deserve compared to the GE counterparts.

In conclusion let me refer to a friend of mine, an African woman, an environmentalist. She once told me after I made a presentation on the same issue of Biotechnology and poverty alleviation in Africa: “Amadou it is critical that we speak out on the issue of biotechnology as NO TECHNOLOGY IS NEUTRAL”.

To illustrate what she meant she went on to say “In my community we give seeds as part of the dowry when you want to marry a woman. Seeds for us are a symbol of life, sharing and procreation.
Some other people look at seeds and see… sterilization and ownership”.
And that friend is Wangari Matthai the 2004 Nobel Prize winner.

I thank you for your attention.

Amadou C. KANOUTE
Consumers International Office for Africa
Petersberg (Germany) 23 Nov. 2004
ackanoute@ci-roaf.co.zw; ackanoute@yahoo.com