

Review comments by Pat Mooney of ETC Group to FAO secretariat concerning:  
**Current status and options from biotechnologies in crops to address food security in developing countries**

(Initial draft documents leading to the ABDC-10 Conference in Guadalajara, Mexico)

**General comment:**

I was invited specifically to look at the draft document on plant biotechnologies. However, I have also read the draft documents on fish, livestock, forests and processing and find all of them interesting and informative. Nevertheless, I also find all of them unwarrantedly-positivist toward advanced biotechnologies. Even accepting that the document length must be constrained and the discourse confined, the documents systematically ignore or obfuscate important issues and perspectives that cannot be avoided if FAO's upcoming conference is to evade accusations of bias. I would be happy to comment on each of the draft documents but, for the moment, will confine myself to the specific text I was encouraged to review.

**Crop biotechnology:**

Concerning the plant biotechnology document I can offer the following summary comments:

- 1. False start:** The intellectual and institutional FAO starting point for this paper is the 2008 IAASTD analysis. This landmark study is referenced only once in the draft in the context of Chinese biotech research. This encourages the unfortunate assumption that this unlikely reference is only to allow the conference to say that it did not ignore the IAASTD while still avoiding the study's comments on biotechnology.
- 2. Foggy premise:** The extraordinarily broad definition of biotechnology employed in the draft buries many of the contentious issues surrounding plant biotechnology in a fog of peripheral technologies and issues. Using this broad definition, any endorsement of the last century of agricultural research could mislead the public and policymakers by being interpreted as support for some specific and highly-controversial biotechnologies.
- 3. PPP Oversight:** For all the extensive references to Public-Private Partnerships, there is no useful reference to FAO's major Public-Public Partnership on biotechnology safety with the Convention on Biological Diversity (CBD) and its Cartagena protocol. Rather like the IAASTD, the CBD is mentioned only for its definition of biotechnology. This draft document should, instead, explore the CBD's experience in capacity-building with respect to the Cartagena protocol and examine concerns that leading scientists in developing countries are being diverted from research to regulation. It would also be useful to explore the progress (or lack of) of the many PPP's announced during the 2002 World Summit on Sustainable Development in Johannesburg.

**4. GM contamination:** The international debate on the extent of/importance of GM contamination (sometimes re-invented as "adventitious presence") is not mentioned. This is arguably the most important and contentious issue affecting GM seeds and cannot credibly be overlooked by the FAO conference. If this essential topic is being avoided out of deference to the host country, FAO should move the event to a venue that does not preclude full scientific and social debate. Indeed, it will be essential for FAO to encourage the active participation of the indigenous peasant communities affected by GM contamination.

**5. Corporate concentration:** The issue of corporate concentration and patent monopoly in biotechnology is touched upon briefly but none of the data or examples of problems – or solutions – are addressed. This issue is being discussed now in many fora including UNCTAD, the UN Special Rapporteur on the Right to Food, and even the U.S. Congress. ETC Group published a report on corporate concentration in food and agriculture in late 2008 titled "Who Owns Nature?" [Source: ETC Communiqué 100, [http://www.etcgroup.org/en/materials/publications.html?pub\\_id=707](http://www.etcgroup.org/en/materials/publications.html?pub_id=707) ].

**6. Climate change:** The draft's emphasis on the need for agricultural research to respond to the vicissitudes of climate change is well-warranted and laudable. However (and despite concerns expressed about IP monopolies in other parts of the paper), there is no mention of the unprecedentedly broad patent claims made by the major agricultural biotechnology companies in claiming access to large sections of DNA that are common to virtually every agricultural species. If these patents are allowed, a handful of companies will have monopoly control over the world's major (and minor) food crops. The paper should note this development and explore appropriate responses. An analysis (published in 2008) of "climate-ready" crops is available from ETC Group on its website. [Source: "Patenting the "Climate Genes" ...and Capturing the Climate Agenda", [http://www.etcgroup.org/en/materials/publications.html?pub\\_id=687](http://www.etcgroup.org/en/materials/publications.html?pub_id=687) ].

**7. Cost and chronology:** The costs – and time – involved in establishing GM traits in cultivars in comparison to conventional breeding – is not addressed in this draft. Recent studies by well-established experts. In a recent Dow Jones newswire [Source: Doug Cameron, Dow Jones Newswire, "US REGULATORS SPEED SEED OVERSIGHT AFTER DELAYS," September 3, 2009.], a senior Monsanto official advised that the costs of a new GM trait range between \$100 million and \$150 million. Perhaps more cautiously, Major Goodman in the USA suggests that the average cost of moving a sequenced gene into a commercial product is in excess of \$60 million. A 2007 study of regulatory costs in 10 countries concluded that the cost of introducing a GM trait can run between \$6-\$15 million [(Kalaitzandonakes et al. "Compliance costs for regulatory approval of new biotech crops," *Nature Biotechnology* 25: 509-511, 2007.) Goodman notes that the introduction of the Bt trait took approximately 16 years and that the average is at least a decade. Goodman compares this to the cost of conventional variety – about \$100,000 – or between one 50th in one 150th the cost of a GM variety. Goodman also questions the robustness of the GM pipeline arguing that either the pipeline doesn't exist or that it is a scattering of disconnected pipes with no line.<sup>1</sup> [Source: Goodman, M., "Plant Breeding Requirements for Applied Molecular Biology," *Crop Science*, Vol. 44,

November- December 2004, p. 1913-14.] This is important information for FAO and developing countries considering adopting GM technologies.

**8. Health and bio-safety:** Disappointingly, there is no acknowledgment of the history or the long time-frames involved in assessing the socioeconomic, health, and environmental implications of a technology used in food and agriculture. This issue should be addressed in the document on food processing but since it is also raised fleetingly in the crop biotechnology document, reference at least should be made to the recent very worrisome findings published by the American Academy of Environmental Medicine [Source: American Academy of Environmental Medicine, Position on Genetically Modified Foods, May 8th, 2009. <http://www.aeonline.org/gmopost.html> ] and the recent report in Critical Reviews in Food, Science and Nutrition [Source: [Health Risks of Genetically Modified Foods](#), Artemis Dona; Ioannis S. Arvanitoyannis, *Critical Reviews in Food Science and Nutrition*, 1549-7852, Volume 49, Issue 2, 2009, Pages 164 – 175]

**9. Gene Revolution:** The Green Revolution is given credit for solving the problems of hunger in the 1960s and 70s without any recognition of other data that shows that hunger increased between 1970s and 1990s in all parts of the developing world except China. [Source: Lappé, Frances Moore, Joseph Collins and Peter Rosset, with Luis Esparza. 1998 *World Hunger: Twelve Myths*. Second Edition. (New York and London: Grove Press/Earthscan).] It is also disturbing that the references to yield increases suggested in the draft do not make space for research that shows that many smallholders are growing more than one crop in a field and can achieve higher – and more nutritional – yields in this way than on monoculture fields. [Source: Rosset, P.M. 1999. *The Multiple Functions and Benefits of Small Farm Agriculture in the Context of Global Trade Negotiations*. Institute for Food and Development Policy, Food First Policy Brief No. 4, 22 pp.]

**10. Future shock -- GURTS:** Although there is considerable positive discussion about the potential uses of agricultural biotechnology's to meet future food problems, there is no reference to Genetic-Use Restriction Technologies (GURTS or Terminator/Trans-container technologies). Major seed companies such as Monsanto, DuPont and Syngenta have publicly stated that they will not sell GURTS seeds to farmers but, at the same time, they continue to undertake GURTS research and apply and receive new patents on the technology. Reference should be made to the *de facto* moratorium on GURTS established by the UN Convention on Biological Diversity in 2000 and reaffirmed again in 2006. Some OECD states have attempted to overturn this decision and another attempt is expected at the CBD's COP 10 in Japan in October, 2010. It is also important to note that the CGIAR has publicly stated that it will not make seeds using GURTS technologies available to farmers.

**11. Research exemption or extinction?** Corporate restrictions on scientific research into the utility of GM seeds is not discussed. This is a very serious oversight given the current public debate and the letter sent to the US government by 24 US maize researchers complaining that major seed companies such as Monsanto, DuPont and Syngenta are making sure that the only peer-reviewed reports available on GM seeds are those that support their commercial interests. This effort to prevent negative scientific

studies raises questions about the veracity and usefulness of the positive studies cited in this draft document. Because of this, it is necessary for the draft to discuss this issue openly and fully. [Source: “Do Seed Companies Control GM Crop Research? Scientists must ask corporations for permission before publishing independent research on genetically modified crops. That restriction must end” by the Editors, [Scientific American Magazine](#) - August 13, 2009]

**12. Future “biotech” advances:** The draft document purports to look ahead at the potential uses of new biotechnologies for agriculture yet the potential use of synthetic biology and nanotechnology are not addressed. This is disappointing since there is a fleeting reference to nanotechnology in the food processing draft, even though there is considerable research relevant to plant breeding. FAO and WHO convened a conference on nanotechnology and food in June 2009 and reference to their report should be made. In July 2009, the OECD conducted a conference on nanotechnology and the environment including a panel on agriculture. There should be a reference to this as well.

**13. Full disclosure:** In part, because of the commercial efforts to prevent the publication of damaging research, this document should clearly disclose any possible conflicts of interest for the documents’ authors as well as of all references in the document. It would be helpful for the document to provide a note on the percentage of references citing private sector studies and the percentage citing studies wholly or partly funded by the private sector. Indeed, if this is not done for each of the documents, others will almost inevitably do so.

**14. Other voices:** Since the conference has been delayed (is there a new date established?) there should be time to encourage the production of other documents on the same topics prepared by a more diverse group of authors – especially smallholder farmers, fishers, livestock-keepers, urban gardeners, etc.. All of these groups have organizations and could make a constructive contribution to the conference.

In conclusion, I want to express my appreciation for much of the information that is in the crop and other draft documents. I've had to necessarily focus on those issues in the text where I perceive problems. This does not mean that there is not much that is beneficial in the drafts. However, I am afraid that the drafts reflect a bias that – if published without major changes such as those proposed above – will do harm to the reputation of FAO and the purposes of the conference. These documents cannot be allowed to proceed to the conference without these changes.

Yours sincerely,  
Pat Mooney  
Executive Director, ETC Group