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To:
Dr. Ahmed Djoghlaf
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Convention on Biological Diversity
Montreal, Canada
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Re: SCBD/BCH/CG/WDY/jh/60095 27 September 2007
views concerning socio-economic impacts of LMOs

30 November 2007

Dear Dr. Djoghlaf,

In response to your invitation to submit views and information in preparation for MOP4 concerning socio-economic impacts of LMOs (Decision BS-II/12, paragraph 5), the Public Research and Regulation Initiative (PRRI) hereby submits the following thoughts for consideration by the MOP.

Article 26 of the Cartagena Protocol states that Parties, in reaching a decision on import under the 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 on the conservation and sustainable use of biological diversity.

PRRI believes that this article is crucial for the functioning of the Protocol, because it makes clear that informed decision making on LMOs not only means taking into account potential impacts on the conservation and sustainable use of biological diversity, but also socio-economic impacts, including socio-economic benefits. I expand on this below.

Article 15, in conjunction with Annex III, makes clear that the process of risk assessment starts with an identification of potential adverse effects on the conservation and sustainable use of biological diversity, and ends with an assessment of whether any identified risks are acceptable or manageable. The use of the term ‘acceptable’ means that identified risks are ‘weighed’ against any beneficial impacts on the conservation and sustainable use of biological diversity. For example, the potential effects on non-target insects of an insect resistant crop plant may be outweighed by the benefits for those same non-target organisms due to the reduction in application of synthetic pesticides.

Looking at this in the broader context of environmental protection, we bring to the attention of the MOP that the two major genes presently commercialised in GMOs come from bacteria; resistance to a relatively inexpensive, environmentally friendly, and toxicologically safe herbicide, and a gene encoding a single protein conferring resistance to insects from a bacterium called *Bacillus thuringiensis* (Bt). The same bacterium with its myriad of proteins is sprayed at great expense to control insects in organic agriculture. In genetically modified Bt crops, a single Bt gene is put into the crop plants and the farmer just plants it out. The herbicide resistance allows the farmer to refrain from soil eroding and soil compacting tillage. In the use of these two genes alone between 1996-2004 there has been a saving of a million tons of petroleum, a reduction of pesticide use by 172,000 tons, resulting in a positive ecological footprint improvement of 14% globally (Brookes and Barfoot 2006).

As the use of GMOs can have many different benefits for the conservation and sustainable use of biological diversity, PRRI intends to hold a side event at MOP4 in which we will present and discuss examples of such benefits.

Turning to the topic at hand, PRRI further believes that for informed and balanced decision making, it is equally important to be able to take into account potential socio-economic benefits arising from the use of LMOs.

As experience shows, the use of GMOs can also have direct socio-economic benefits for individual farmers. For example, the reduction of pesticide use as a result of the cultivation of Bt cotton by small farmers in developing countries also has clear health benefits for those farmers who in the past were exposed to the pesticides which they sprayed manually with little pumps mounted on their backs without protective gloves and clothing, often resulting in acute illnesses, not to mention the chronic effects of long term exposure. As experience also shows, the use of Bt crops can lead to the reduction of mycotoxins in maize. Mycotoxins are cancer-causing toxins produced by fungi, which can grow on the wounds of maize plants caused by pest insects. As has recently been demonstrated in South Africa with herbicide resistant maize, it can replace hand weeding, eliminating drudgery and allowed farmers to cultivate more of their arable lands, while spending more time on other, more productive aspects of their lives. This has had the greatest impact with women farmers, allowing them to have greater time with family affairs, and has allowed HIV-AIDS infected farmers, with reduced physical capacity, to continue farming.

Looking at this in the broader context of global food security, it is important to remain aware that farmers are up against a large number of constraints in trying to provide a sustainable, sufficient, and safe supply of foods, and have a constant battle with a continuously evolving nature in trying to do so. The crops have a myriad of insect pests, diseases and weeds to cope with. There are also problems of soil erosion, drought, and flooding. Farmers have to invest heavily in tillage, fertilizer and pesticides to deal with these problems. Any solution that can be put into the crop seed; higher productivity, disease and insect resistance, resistances to inexpensive herbicides, drought tolerance, increased fertilizer use, efficiency, etc., lessens costs of inputs as well as decreases environmental impact. Breeding has helped with many crops to a point, until a genetic 'glass ceiling' was reached. Breeding can only recombine genes that a crop has on its chromosomes, e.g. if genes for a particular insect resistance do not exist in the crop's genome, no amount of breeding will ever achieve resistance. Breeding has helped less with some crops because they have a lower genetic glass ceiling, i.e. fewer genes for the breeder to work with, and several of these crops are not cultivated as much as they used to be, leaving us dependent on 4 crops for 80% of the calories in our and our livestock's diet. This is a dangerous precedent considering the possibilities for global disease and insect pandemics. Thus, for all our crops there is a need to broaden the genetic base so that the genetic glass ceiling can be breached, and that a greater diversity of crops can be cultivated. The only way to increase the genetic base is to bring in genes that cannot be brought in by breeding.

PRRI intends to present and discuss examples of these and other socio-economic benefits in the proposed side event at MOP4 mentioned above.

For more information about PRRI and how it can help, please contact the Executive Secretary of PRRI, Piet van der Meer, at pietvandermeer@cs.com.

Yours truly,

Em. Professor Marc van Montagu
Chairman of the Steering Committee of the Public Research and Regulation Initiative