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IFPRI

# FOOD POLICY STATEMENT

NUMBER 35, OCTOBER 2001

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## THE POLITICS OF PRECAUTION GENETICALLY MODIFIED CROPS IN DEVELOPING COUNTRIES

ROBERT L. PAARLBERG

Genetically modified (GM) agricultural crops such as cotton, maize, or soybeans have been planted widely by farmers since 1995 in three western hemisphere countries—the United States, Argentina, and Canada. Where GM crops have been planted they have performed as advertised, allowing farmers to reduce costs by controlling insects and weeds with fewer, less toxic, and less persistent chemicals.

Yet the planting of GM crops has not spread significantly beyond these three countries, which still account for roughly 98 percent of total GM crop acreage worldwide. It is perhaps understandable that GM crops have not made inroads into Europe or Japan, where consumers are well fed, farmers are prosperous without GM crops, and where green parties and anti-globalization nongovernmental organizations (NGOs) promote a highly precautionary approach to food safety and environmental protection. But why haven't more developing countries begun planting GM crops? In poor countries many farmers are far from being fully productive and many citizens must worry more about food availability or food cost than about unconfirmed food safety dangers. In poor countries the development imperative ordinarily trumps issues of environmental precaution. So why has a pattern of policy resistance to GM crops emerged instead?

In this original study Robert Paarlberg examines local policy responses to GM crop technologies in four important developing countries: Brazil, India, Kenya, and China. He shows that in the first three of these countries regulatory authorities have not yet given farmers official permission to plant any GM crops. And in China, where farmers have been permitted to plant GM cotton, regulators are still holding back on the release of most GM food and feed crops, even though China's own national agricultural research system has invested a considerable effort in developing such crops. This degree of governmental precaution regarding the release of GM crops for planting is actually greater than in Europe or Japan, where unofficial consumer resistance rather than a lack of official regulatory approval has held up the planting of GM crops.

The explanation for this official caution toward GM crops in the developing world is complex. In some cases (Kenya) the caution grows partly out of a weak national capacity to test GM crops for all possible local biosafety risks. Despite this weak capacity, the international donor community—pushed by environmental NGOs—has insisted that GM crops not be introduced into poor countries until regulations, facilities, and trained personnel are in place to permit thorough case-by-case biosafety screening. Many poor countries do now have the regulations, but few have the facilities, trained personnel, or budgetary resources. In such countries, rather than be caught failing to measure up to their own announced biosafety standards, regulators often decide to err on the side of not granting any GM crop approvals.

In other cases (Brazil and India) the non-approval of GM crops has been a direct result of media campaigns and direct actions by local and international NGOs (such as Greenpeace) opposed to GM crops. National regulatory authorities have been blocked from giving commercial release to GM crops by court actions challenging the constitutional authority of national biosafety committees, or they have been deterred from moving ahead by NGO acts—such as attacks on crop field trials—designed to create social and media resistance to GM crops and foods.

In still other cases (China), the release of GM food and feed crops has recently been slowed in part by anxieties regarding consumer acceptance abroad. Regulators working in China's more tightly controlled political system have had less to fear from domestic

media criticism or actions by NGOs and partly as a result they have been able to approve and promote the production of an important GM industrial crop, Bt cotton. Yet partly for fear of losing access to export markets in Asia or Europe, these same Chinese regulators have decided so far not to approve the commercial planting of GM feed or food crops such as maize or rice. Anxiety about the future acceptance of GM crops in export markets is also a growing factor in Brazil's policymaking process.

This study shows that it is usually in the name of biosafety that governments in the developing world have acted to slow the commercial release of GM crops, even though biological safety has traditionally been no more than a secondary concern in these countries, and even though the GM crops being screened may present no documented biosafety threat. National biosafety authorities in Kenya have not yet approved the planting of virus-resistant sweetpotatoes on grounds of biological safety, despite the fact that unwanted geneflow from this crop does not pose a danger in Kenya because there are no wild relatives of the sweetpotato in Africa and because the crop is propagated vegetatively. Herbicide-tolerant soybeans are being held up on biosafety grounds in Brazil even though there are no wild relatives of the soybean anywhere in the Western Hemisphere and even though

most of the known effects of planting this GM variety on the biological environment tend to be positive (including the use of fewer, less toxic, and less persistent herbicides). Developing country governments are using biosafety regulations to go slow on GM crops even in cases where biological safety is not the true concern.

This study also shows that international constraints on the use of intellectual property have not been a principle reason so far for the slow spread of GM crops to the developing world. In some cases (Kenya) corporate intellectual property rights (IPR) holders have been willing to share the rights to their GM technologies free of charge for use on noncommercial food crops such as sweetpotatoes grown in the developing world. In other cases (India) corporations have protected themselves against loss of IPR by incorporating their valuable transgenic technologies into hybrid crops, which do not keep their desirable traits beyond a single planting. In still other cases (China) corporations have brought in valuable GM seeds despite the prospect of significant local piracy, as a way to begin at least some commercial GM seed sales in a large and potentially lucrative developing-world market.

A larger constraint on the successful introduction of useful GM crops into the developing world has been low spending by national governments on biotechnology research. Larger

investments in GM crop research by national agricultural research systems (NARS) would have several benefits. They would steer GM crop development more often in the direction of poor people's crops, which tend to be neglected by private corporate research. A larger NARS role would also help relieve anxieties regarding the dominant role that some powerful multinational seed and chemical companies have recently assumed in the promotion of GM crops. GM crop critics in the developing world have an easy time blocking this technology when it is brought in from abroad by widely mistrusted foreign multinational corporations. If the technology were seen emerging instead from scientists working for national development purposes within publicly financed national laboratories, local political resistance could diminish. China has been willing to go ahead with Bt cotton in part because some of the varieties now being planted were locally developed within that nation's own agricultural research system.

It is still too early to judge how far the planting of GM crops will eventually spread in the developing world. Yet it is somewhat discouraging at this point to see in so many cases that the most important local stakeholders—poor farmers with families to feed—have not yet been given official permission to use this important new tool for raising farm productivity.

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