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Abstract:

Recent years have seen numerous rejections of food aid containing genetically modified organisms (GMOs). The US, as the principal donor of this aid, went on the defensive, and blamed the European Union for hunger in developing countries. Rarely is food aid rejected. And rarely do food aid donors act so strongly to blame other donors. The reaction of both donors and recipients is also puzzling because it contradicts the much of the literature from the 1990s which argued that the international food aid regime had become largely "depoliticized" following reforms to food aid policies in the 1980s. The current literature on food aid has not adequately addressed the ways in which the advent of GMOs has affected the food aid regime. I argue that scientific debates over the safety of GMOs, and economic factors tied to the market for genetically modified crops, both highly political issues, are extremely relevant to current debates on food aid.

In 2002 the US sent significant quantities of food aid, in the form of whole kernel maize, to southern Africa in response to the looming famine in the drought stricken region. It soon became apparent that the aid contained genetically modified organisms (GMOs), though the recipients had not been notified prior to the shipments being sent. Many southern African countries initially refused to accept the GM food aid, partly as a health precaution, and partly on the grounds that it could contaminate their own crops, thus hurting potential future exports to Europe. A number of the countries eventually accepted the food aid provided it was milled first, but Zambia continued to refuse even the milled maize. The US argued that it could not supply non-genetically modified (GM) food aid, and it refused to pay for the milling. The US then blamed Europe's moratorium on imports of GM foods and seed for contributing to hunger in southern Africa.

This incident highlights a new aspect of the recent global predicament over how the international movement of GMOs should be governed. While there has been much analysis of this question with respect to commercial trade in recent years, particularly regarding the adoption of the biosafety protocol[1], the literature on food aid has not kept up with these new developments. Recent academic analyses of food aid have paid little attention to the question of GMOs. The literature on food aid has focused mainly on the motivations for donating food aid, and its potential as a development tool. Some have argued that while economic and political considerations are present to some degree in the motivation for giving food it, today it is mainly given as part of a development regime that aims primarily to promote food security and rural development rather than as a means to serve donor countries' domestic economic and political interests.[2]

In light of the changes in global agriculture over the past decade, especially the rise of the US as a major producer of GM crops, it is important to re-examine the political economy of food aid. There appear to be strong economic motivations for the US to pursue the food aid policy described above, as well as scientific motivations, not addressed by the earlier food aid literature. Both of these motivations are highly politicized. Europe has not followed the lead of the US on GM food aid policy. The divergence of the policies of the EU and the US on this issue may well lead to interesting politics in the years to come in the international battle over GMOs. Only this time, the debate looks set to be played out globally, with some of the world's poorest countries as unwitting participants in the conflict.

Why revisit food aid politics?

The modern era of food aid was instituted in the US in 1954, with the passage of US Public Law (PL) 480. Since that time food aid has been an important feature of US assistance to developing countries, though its role has changed over time. In the 1950s food aid accounted for nearly a third of US agricultural exports, whereas in the mid 1990s it was closer to 6 percent.[3] Food aid under PL 480 is given under different categories of assistance. Title I is government to government aid in the form of concessional sales with the express aim of opening new markets for US grain. Title II is grant food aid distributed in emergencies. Such aid can be distributed via NGOs and the World Food Program. Title III is government to government grants of food aid for development activities.[4]

From its origins, US food aid was largely seen as a multi-purpose tool. On the surface, the idea of the PL 480 was to provide the world's food deficit countries with food from the US,

as part of a broader humanitarian effort. It was also clearly a mechanism for surplus disposal and export promotion in the US. It created a market for surplus food and as such it had the effect of raising US domestic prices for grain. Further, shipping free or consessionally-priced US grain to poor countries, it was hoped, would create new markets in the future for commercially traded US grain.[5] US food aid was, however, soon seen as a political tool as well. The US had even gone so far as to amend PL 480 in the 1960s to explicitly tie the donation of food aid to political goals, in particular to favour non-communist countries.[6] Other countries followed the US in giving food aid, including Canada, which began its program in the 1950s, and the European Economic Community, which began to give food aid in the late 1960s.[7] Canada and the European donors have been less overtly political and economic in their rationale for food aid, though some surplus disposal mechanism has been part of their food aid donations at various times.

The World Food Program (WFP) of the United Nations was set up in 1963 as a multilateral channel for food aid from donor countries. In its early years the WFP distributed around 10 percent of food aid, while today nearly 50 percent of all food aid is channeled through the WFP.[8] The Food Aid Convention (FAC) was first established in 1968 as part of the Kennedy Round of GATT negotiations, and was attached to the International Wheat Trade Convention.[9] The FAC members are the donor countries, and the agreement sets out minimum amounts of food aid per year to be given by each donor (denominated in tonnes of wheat). The FAC, re-negotiated periodically, now stipulates that food aid can be given either in-kind or in cash equivalent, and other commodities apart from wheat can be given (but they are still measured in wheat equivalents). Today the donor members of the FAC include Argentina, Australia, Canada, the European Community and its member states, Japan, Norway, Switzerland, and the United States.[10] From the early days of food aid to the present, the US has remained the principal donor

country, and gives its aid primarily in-kind. Other donors have over the past decade increasingly given their food aid in the form of cash, which is directed toward third country purchases or local purchases in the recipient region.

Since the 1980s food aid policies in the US have been reformed significantly, with the overt political goals removed from the PL 480. And in the mid-1990s the surplus of grain in the US diminished, making the surplus disposal element of food aid appear to be less significant than it was in the past.[11] In the European Union, food aid policies since the 1990s have focused on giving aid in the form cash to finance food distribution programs with local or third party sources of the food, rather than in-kind. This policy has been reinforced by the EU's regulation requiring the shift toward cash-based food aid in 1996.[12] This policy on the part of the EU was largely in response to studies which showed that cash spent on local purchases of food in aid recipient regions boosts the local economies and allows for much more flexibility in terms of sourcing culturally appropriate foods.[13]

Because of these policy shifts, some have argued that food aid by the late 1980s and early 1990s had in fact become largely a development tool, with the motivations for donating food governed more by the existence of an international regime (and desire to cooperate) than by donor economic and political considerations, which is in line with a liberal institutionalist perspective on international relations.[14] In other words, a 'depoliticized' food aid regime was seen to have emerged, which was not merely serving the interests of the donors, but rather was promoting international development. This was especially the case for European donors. Uvin argued that by the early 1990s most EU food aid and about 60 percent of food aid from the US was clearly not driven by economic or political motivations.[15] Other, more recent studies have made similar arguments. Eric Neumayer, for example, argues that in the 1990s while US

economic and military-strategic interests had some influence on food aid donations for program, or longer term food aid, it is an insignificant influence on emergency relief.[16]

In light of the development of agricultural biotechnology in recent years, I argue that it is important to re-examine the political economy of food aid. Important factors influencing donor motivations in an age of agricultural biotechnology are not adequately considered in the food aid literature. Economic factors may once again be key motivating factors for food aid policy. These factors are especially important to consider given the growing corporate concentration in the agricultural biotechnology sector and its close ties with US government agencies, as well as the US dispute with the EU over its 1998-2004 moratorium on GMOs. Moreover, new factors that may influence food aid policy must also be considered, such as the scientific debates over the safety of genetically modified food. These factors appear to be influencing food aid policies on the part of both donors and recipients, and they are highly political.

GMOs in Food Aid

GMOs have been present in food aid since GM soy and maize were initially approved for production in the US in the mid-1990s. Its presence in food aid was inevitable for a number of reasons. US food aid is predominantly given in-kind and is made up of food (mainly wheat, corn and soy) grown in the US. The US is by far the largest producer of GM crops, accounting for over 60 percent of the global acreage planted with GM varieties. Between 1996 and 2003 the global area planted with GM crops increased by 40 fold, in 2003 covering some 67.7 million hectares.[17] In 2002 some three-quarters of the soy and over a third of maize grown in the US were GM varieties.[18] Moreover, there is not a segregated system for GM and non-GM crops in

the US, and cross contamination has been widespread. This is important, as the US accounts for 60 percent of all food aid donations.

Though negotiations began in 1995 on a protocol on biosafety under the Convention on Biodiversity to address the safety issues related to trade in GMOs, little attention was paid to their presence in food aid transactions at that time. It is not surprising, then, that when it was discovered that some food aid donations contained GMOs in 2000, many were caught unaware. Both USAID and the WFP had sent shipments of food aid containing GMOs, amounting to some 3.5 million tonnes per year.[19] Such shipments were often in contravention of the national regulations in the recipient country.

Ecuador was the first known developing country to receive food aid containing GMOs in a shipment of soy from the US and channeled through the WFP. The product was eventually destroyed following complaints by Ecuador.[20] There were also cases of GMOs being sent in food aid shipments to Sudan and India in 2000. In 2001 GMO soy was found in food aid shipments sent to Columbia and Uganda. Food aid maize from the US containing GMOs was also reportedly sent to Bolivia in 2002, despite the fact that the country had a moratorium in place on the import of GMO crops. The GMOs found in the Bolivian aid contained StarLink corn, which is a modified form of corn that was not approved in the US for human consumption (it was approved as animal feed), but which nonetheless managed to find its way into the human food system in the US in the fall of 2000. NGOs claim that despite the fact that when StarLink was found in the US food supply it was immediately removed from the market, the US did little to remove the maize from Bolivia. In 2002 Nicaragua and Guatemala were also sent GM corn seed as food aid from the WFP. This caused a stir in Nicaragua in particular, as that country is a centre of origin for corn.[21]

By mid-2002, there were enough incidents of GMO food aid to have made the donors fully aware of the issue. Recipient countries expressed concern about the potential health and environmental impacts of GMOs, including allergenicity, and out-crossing of GMOs with wild relatives (if the grains are planted rather than eaten) which could reduce biodiversity by contaminating and driving out local varieties. Once GMOs are released into an environment, they are difficult, if not impossible, to remove. Food aid, when given in whole grain form, is often planted by local farmers, who may have exhausted their seed supply as food in times of crisis.[22] The fact that GM crops have not been approved in many countries, including in the European Union which had placed a moratorium on their imports and new approvals of GM crops in 1998, fueled many of these concerns, especially for those countries which have export markets in the EU.

Until mid-2002 the food aid shipments identified as containing GMOs were mainly to areas, which, while in food deficit, were not facing an acute food shortage. This changed in mid-2002 with the looming famine southern African. Some 14 million people in 6 countries faced imminent food shortages and famine at that time. The situation was seen to have been precipitated by a number of factors. Drought and floods were identified as one of the immediate causes. However, underlying factors were just as important. These include the high prevalence of HIV/AIDs in the region, as well as conflict in Angola (and refugees from Angola in neighbouring countries), domestic agricultural policies, as well as the impacts of trade liberalization under structural adjustment in some countries in the region.[23] It was the worst food shortage faced by the region in 50 years.

In response to this crisis the US sent 500,000 tonnes of maize in whole kernel form to the region in the summer and fall of 2002 as food aid. It was estimated by the WFP that around 75

percent of food aid to the region at that time contained GMOs.[24] The countries that received the shipments were Zambia, Zimbabwe, Malawi, Swaziland, Mozambique and Lesotho. The aid was channeled through the WFP as well as NGOs. When the countries discovered that the aid contained GMOs, they were forced to consider whether they wanted to accept the aid. Zimbabwe and Zambia said they would not accept the food aid at all, while Mozambique, Swaziland and Lesotho said they would accept it if it was milled first. Malawi accepted it with strict monitoring to ensure that its farmers do not plant it. Zimbabwe eventually said it would accept it if it was milled and labelled first.[25]

Zambia stood firm in not accepting it for its own people. It did eventually accept it in milled form but only for the 130,000 Angolan refugees in camps within its borders, but not for the general population.[26] Zambia expressed its concern that any health problems that might arise from eating GMOs would be too costly for the country to address. Since the Zambian diet consists of far more maize than the diets of North American consumers, such health problems may not be foreseen. Moreover, Zambia does have some maize exports to Europe, and contamination of its maize with GMOs could affect its exports if the EU moratorium continues.[27] The WFP scrambled to find non-GMO aid for Zambia, which had some 3 million people at risk of starvation. In the end, the WFP was only able to source about one half of the necessary 21,000 tonnes of maize needed for Zambia.[28]

The WFP responded by saying that it was impossible to mobilize non-GMO food aid fast enough. The WFP made it clear that it respected the right of the countries to refuse to accept the aid, and it did what it could to organize the milling of the maize for those countries that would accept it in that form, and to source non-GMO aid for Zambia. The WFP had to quickly arrange local milling, and in the case of Zambia, it had to remove shipments which had already been

delivered. The milling did provide the WFP with the ability to fortify the grain to raise its micronutrient content, however, which was seen as an unexpected benefit. Further, the WFP did manage to solicit donations from non-traditional donors of aid for food, including a number of developing countries.[29]

The response of the US was much more defensive. The US refused to mill the maize before sending it to the region, claiming that it was too expensive to do so, raising the cost of the food by as much as 25 percent, and reducing its shelf life. It also initially refused to send non-GM varieties of corn to the region, claiming that it was impossible to source non-GM crops from the US. It refused to give cash instead of in-kind aid, on the grounds that it has traditionally given in-kind aid, and has done so for 50 years. The US did, however, stress that it would respect the wishes of the countries that did not want GMO food aid sent to them. The US position was clearly spelled out in a USAID website 'questions and answers' on the GMO food aid crisis.[30] The US did eventually give Zambia a donation of GM-free maize of some 30,000 tonnes, however, after heavy international pressure to do so.[31]

The US also blamed Europe for the crisis, saying that its moratorium on approval of seeds and foods containing GMOs was stalling efforts to promote food security.[32] In the midst of the African crisis the US began to seriously consider launching a formal complaint at the WTO over the EU's moratorium on GMOs, claiming that it was in contravention of WTO rules. Though the WTO rules do allow countries to ban imports of a product on food safety concerns while the country seeks further scientific evidence, the US argued that five years was plenty of time and that no such evidence had been gathered. The US was concerned that this position of the EU was influencing too many countries, including those in Africa.[33]

Throughout the fall of 2002 and early in 2003 the US put pressure on Europe to remove its moratorium. The US finally launched the formal complaint against the EU at the WTO in the May 2003. Argentina and Canada joined the formal challenge.[34] At the time US President Bush stated: "European governments should join – not hinder- the great cause of ending hunger in Africa."[35] Egypt was initially listed as a co-complainant, but it pulled out. Though Egypt does have an active agricultural biotechnology research program, it withdrew from the dispute because Europe is a very important market for its exports of fresh fruits and vegetables. The US had hoped that having Egypt on board would help it to drive the point home that GM crops are beneficial to Africa. The US retaliated against Egypt for its withdrawal by pulling out of talks on a free trade agreement with that country.[36]

When the US launched the dispute, the European Union issued a press release stating its regret over the US decision to take action on this case. It criticized the US for using the African countries' refusal of GM food aid to pressure the EU:

> The European Commission finds it unacceptable that such legitimate concerns are used by the US against the EU policy on GMOs … Food aid to starving populations should be about meeting the urgent humanitarian needs of those who are in need. It should not be about trying to advance the case for GM food abroad …[37]

In the midst of the southern African crisis the European Commission specifically requested the WFP to only purchase non-GM maize as food aid with the money the EU donates for such assistance.[38]

In mid-2003, another dispute over GM food aid emerged. Sudan had been pressured by the US to accept GM food aid, despite its recently passed legislation that requires food aid to be certified GM-free. In response to US pressure, the Sudan issued a temporary six month waiver to this legislation in order to give the US more time to source GM-free food aid. In March 2004, however, the US threatened to cut the Sudan off from food aid completely.[39] This prompted the Sudan to extend the waiver to early 2005.

Unclear Rules on International Trade in GMOs

How is it that such massive shipments of GM food aid could have been sent without the recipients knowing about it before it was sent? The rules regarding trade in GMOs were unclear at both the global and local levels between the mid 1990s and 2003. This was the very period when much of the controversy over GMO food aid was at its highest.

As of mid-2002 when the southern African crisis erupted, only a few developing countries had any domestic legislation dealing with imports of GMOs, let alone GMO food aid. The only sub-Saharan African countries with biosafety laws in place at that time were South Africa and Zimbabwe, though a number have since begun to develop policies dealing with the import of genetically modified organisms. Zimbabwe had a Biosafety board to advise on GMOs, but it has not approved any GM crops for commercial release. South Africa is the only sub-Saharan African country which has approved the commercial planting of genetically modified crops. In July 2001 the Organization of African Unity (OAU, now the African Union) endorsed a Model Law on Safety in Biotechnology which takes a precautionary approach to biotechnology and calls for clear labeling and identification of imports of GMOs. This model legislation was designed as guidance for countries in formulating their own national laws on biosafety as well as

a way to develop an Africa-wide system for biosafety. As of 2003, no countries in Africa had yet adopted the model law into its legislation.[40]

In response to the southern African crisis in 2002, the Southern African Development Community (SADC) established an advisory committee to set out guidelines for policy on GMOs in the region. These guidelines stipulate that 'food aid that contains or may contain GMOs has to be delivered with the prior informed consent of the recipient country and that shipments must be labeled."[41] But such guidelines were not available at the time of the crisis. Other regional responses include efforts by the Common Market for Eastern and Southern Africa (COMESA) to develop a regional policy on GMOs, including food aid. And the New Partnership for Africa's Development (NEPAD) decided in mid-2003 to establish a panel to advise African countries on biosafety and biotechnology as a means to try to harmonize regulations on these issues across Africa.[42]

At the international level, rules on biosafety and trade in GMOs were also not all that clear prior to 2003. The Cartegena Protocol on Biosafety, which governs trade in GMOs, was negotiated between 1995 and 2000 (when it was adopted), but was not in legal force until September 2003.[43] The Protocol's rules state that GMOs (living modified organisms) intended for release into the environment (seeds) in the importing country, are subject to a formal Advanced Informed Agreement (AIA) procedure for the first international transboundary movement to a country. Importing countries can reject these if they wish, based on risk assessment. Genetically modified commodities (living modified organisms intended for food, feed or processing) are exempted from the formal AIA procedure, and instead are subject to a separate form of notification, in the form of a Biosafety Clearing House, an internet-based database where exporters are required to note whether shipments of such commodities 'may

contain GMOs'. Importers can also reject such shipments, based on risk assessment. In both cases, parties are given the right to make decisions on imports on the basis of precaution in cases where full scientific certainty is lacking.[44] The food aid donations shipped prior to the Protocol's entry into force were not covered by these rules. And now that it is in force, these rules only apply to those countries that have signed and ratified the agreement. The US and Canada, two of the major food aid donors which grow significant quantities of GMOs, have not yet ratified the Protocol, and thus are not bound by its rules.

The Codex Alimentarius Commission, which sets voluntary international guidelines on food standards, was from the late 1990s trying to address questions of biotechnology and food safety. In 1999 the Codex established a special Task Force on Biotechnology to address the wider concerns expressed about biotechnology and food safety, especially those related to risk analysis. The Task Force only released its guidelines in mid-2003. Though they are voluntary, the standards are considered a benchmark for international trade under the WTO. The biotechnology guidelines adopted include safety evaluations prior to marketing of GM products, and measures to ensure traceability in case a GM product needs to be recalled.[45] But because these guidelines were not in place at the time of the food crisis in southern Africa, nothing was done to ensure these guidelines were followed for food aid.

The WFP did not set an explicit policy on how to deal with GMOs until mid-2003. Its policy has long been to give food aid to countries in food deficit if the food met requirements for food safety by both the donor and the recipient. But if neither the recipient nor the donor had a policy of notification, it was difficult for the WFP to keep track of them. It defended its lack of a GMO policy prior to that date by stating that "none of the international bodies charged with dealing with foods derived from biotechnology had ever requested that the Programme handle

GM/biotech commodities in any special manner for either health or environmental reasons."[46] Because of the media attention to the issue, and claims that the WFP was negligent, the WFP decided to establish a formal policy for dealing with GMOs in food aid in 2002, which was finalized in 2003. The new policy asks recipient country offices of the WFP to be aware of and comply with national regulations regarding GM food imports. It also maintains its original policy that it will only provide food as aid which is approved as safe in both donor and recipient nations. Countries that clearly state that they do not wish to receive GM food aid will have their wishes respected. The WFP stated that it will still accept GM food aid from donors, but will also respect the wishes of donors who give cash in lieu of in-kind aid if they request that the money not be spent on GM food.[47]

Unpacking Motivations for GM Food Aid Policy

What explains the widely divergent positions on GM food aid on the part of the donors, specifically the US and the EU, and the rejections by the recipient countries? As mentioned above, much of the food aid literature sees the current donor motivation for giving food aid as being driven not so much economic and political goals as had been the case in the past, especially in the case of emergency aid. In this section I argue that we need to revisit this issue. In an age of agricultural biotechnology, new issues must be considered as having an influence on food aid policy, primarily the scientific debate over the safety of GM food. Further, economic and political incentives, inextricably tied to corporate interests in agricultural biotechnology, appear once again to be important factors behind the US position on GM food aid in particular.

Debates over the Science of GMOs: Differing Interpretations of Risk and Precaution

The southern African crisis fuelled an already existing scientific debate over the safety of GMOs and their role in promoting food security. The debate has largely been over whether there is sufficient risk associated with the planting and consumption of GM crops and foods to warrant precaution with respect to their adoption. In the media accounts of the GM food aid incidents in southern Africa, this scientific dimension has tended to dominate the explanations for the policies pursued by the donors and the recipients.

The North American position on the safety of GM foods and crops is that there is minimal risk attached to them, and that because of this a precautionary approach in their adoption is not warranted. In both the US and in Canada, regulatory procedures for GMOs are built on the notion that if the developer of a genetically-modified crop or food can demonstrate that it is 'substantially equivalent' to a conventional counterpart, the GM crop or food does not require an extensive risk assessment prior to its approval.[48] Ongoing scientific uncertainty with respect to the risks of GMOs does not automatically invoke a precautionary approach in these countries. In other words, agricultural biotechnology products are assumed to be innocent until proven guilty. It is further argued that that the benefits of GM crops, in terms of higher yields and easier management of weeds, far outweigh the (known) risks associated with them.[49] The US and Canada view their approach to the regulation of agricultural biotechnology as being firmly grounded in 'sound science'.

The approach to regulating agricultural biotechnology products is very different in the EU and in many developing countries. The EU's interpretation of the potential risks associated with GMOs is much more precautionary. It views the existence of scientific uncertainty with respect to the safety of agricultural biotechnology as enough reason to take more time to evaluate

the full range of potential risks associated with these products prior to their approval. Before such products can be approved, they must be subject to a rigorous scientific risk assessment.[50] In this sense, agricultural biotechnology products are assumed to be guilty until proven innocent. Many developing countries lack a regulatory structure for approval of agricultural biotechnology products, and for this reason they have tended to favor the EU approach which applies precaution in the face of scientific uncertainty. Further, there is widespread sentiment in Europe and in many developing countries that the potential risks, such as the potential for out-crossing with wild relatives and creating new allergens, do not outweigh the possible benefits, which reinforces the precautionary mood in those countries.

The different interpretations of the science and risks of GMOs goes some way to explaining the widely divergent positions with respect to GM food aid amongst the US, the EU, and the recipient countries. The hostility on the part of the US toward those countries that rejected the GM food aid, and placing of the blame on Europe, are partly products of these different viewpoints. In particular, the US sees the EU's regulatory system, which is much more precautionary, as being too 'emotional' and not scientifically based. The US would much rather see its own regulatory style, rather than the EU approach, adopted in developing countries that currently lack a regulatory framework. This attitude on the part of the US can be seen in the comments made by US Senator Chuck Grassley, at a speech to the Congressional Leadership Institute in March 2003, just prior to the launch of the trade dispute against the EU:

> By refusing to adopt scientifically based laws regarding biotechnology, the EU has fed the myth that biotech crops are somehow dangerous… The European Union's lack of science based biotech laws is unacceptable, and is threatening the health of millions of Africans.[51]

The refusal of the GM food aid on the part of the southern African countries can also be seen as a reflection of their position in the scientific debate, as many of the comments made by African leaders when rejecting the aid made this specific link. For example, Zambian president Levy Mwanawasa expressed his concern that GM food aid was 'poison', stating "If it is safe, then we will give it to our people. But if it is not, then we would rather starve than get something toxic".[52] The Zambian government did authorize a scientific delegation to study the issue, which was sponsored by the US government and several European countries. This delegation traveled to South Africa, a number of European countries, and the US. The eventual report from the delegation, which came in the fall of 2002, cautioned against the acceptance of GMOs in Zambia, much to the disappointment of the US.[53]

Economic Motivations

While the different interpretations of risk and precaution are clearly relevant in explaining motivations for GM food aid policy, they are not the only important factors. In an age of agricultural biotechnology, it appears that economic considerations are re-emerging as explanatory factors for food aid policy, at least on the part of the US.

Throughout the history of food aid, surplus disposal has remained important for the US.[54] Because stocks have declined over the past 50 years, and over the past decade in particular, however, some say that surplus disposal is no longer as important as it once was.[55] But the advent of GM food aid may be reviving and reinforcing the surplus disposal aspect of US food aid. The European moratorium on imports of GMOs has meant a significant loss of markets for US grain. The US has lost around US$300 million *per year* in sales of maize to Europe, for

example, since 1998.[56] Some 35 countries, comprising half of the world's population, have rejected GM technology, and this is also closing the market opportunities for GMO producing countries to export their products. In addition to the European Union, Australia, Japan, China, Indonesia and Saudi Arabia, also refuse to approve most agricultural biotechnology for domestic use and import.[57] Because of the loss of these markets, the US may well be looking for other outlets for its GM maize.

The inability to find export markets for its GM grain may well be a principal reason why the US continues to insist on giving its food aid in-kind, rather than in the form of cash. Both the FAC and the WFP encourage food aid donations in cash rather than in-kind, and the EU has been pushing to have cash-only donations of food aid incorporated into WTO rules. In the case of southern Africa, the US was the only donor that gave food aid in kind rather than as cash.[58] This may be in part due to the preferences of the strong grain lobby in the US. In a letter to the US trade representative on this issue, the National Wheat Growers Association stated: "We wish to assure you that producers across the nation are strong supporters of humanitarian programs, but will not be willing to support cash-only programs."[59]

A second potential economic motivation for the US in giving GM food aid, not unrelated to surplus disposal, is to subsidize the production and sale of GM crops, as well as the agricultural biotechnology sector more broadly, which is dominated by US transnational corporations (TNCs). Some 80 percent of funds for the PL 480 program are in actual fact spent in the US.[60] In 2000 it was reported that Archer Daniels Midland and Cargill, two of the largest grain trading corporations, were granted a third of all food aid contracts in the US in 1999, worth some US$140 million.[61] The US Department of Agriculture (USDA), which is responsible for regulating biotechnology in the US and which also oversees the Title I food aid, works in close

cooperation with the agricultural biotechnology industry.[62] One example of this is the 2002 US Farm Bill which provided funding for the USDA to set up a biotechnology and agricultural trade program with the aim "to remove, resolve or mitigate significant regulatory non-tariff barriers to the export of United States agricultural commodities."[63] USAID, which is responsible for Title II and Title III food aid, also actively promotes the adoption of agricultural biotechnology in the developing world through educational programs, giving some US$ 100 million for that purpose in recent years.[64] This includes USAID funding for private-public partnerships such as the African Agricultural Technology Foundation[65] and the Agricultural Biotechnology Support Project[66] both of which have heavy participation from TNCs in the agricultural biotechnology industry. These initiatives seek to promote the use of agricultural biotechnology in the developing world through research, education and training, and they also acknowledge that they hope such efforts will open new markets in the future.[67]

Critics see such efforts as a means by which the US is trying to pave the way for the introduction of pro-GM legislation to facilitate the export of GM crops and seeds around the world.[68] For many the position of the US in the southern African crisis, especially its refusal to mill the GM grain and its attack on Europe's regulatory structure, was seen as a deliberate strategy to spread GMOs as far and as wide as possible, in order break the remaining resistance to the technology.[69]

Economic considerations in the EU must also be taken into account in unpacking donor motivations. The EU's position on GM food aid is very much tied up in the WTO trade dispute over GMOs more broadly. The US had been pressuring the EU to lift its moratorium on approvals of GM crops and foods before the crisis hit in southern Africa, and so it is not surprising that the EU position was in opposition to that of the US. Tied up in this broader

dispute is the question of export markets for the EU as well. It may be that the EU is seeking to solidify trade relations with developing countries by creating a non-GM market which would exclude the US. The EU has also been pushing for several years now for cash-only food aid to be written into WTO rules as part of the ongoing talks on the revision of the WTO's Agreement on Agriculture. The EU sees the US in-kind food aid, and Title I sales of food aid, as unfair subsidies to the US agricultural industry, and wishes to see these removed in exchange for its own subsidy reductions. This helps to explain the EU's criticism of in-kind food aid.[70]

On the recipient side, economic considerations are also important in helping to explain their acceptance or rejection of food aid. The southern African countries were concerned about their export prospects with the EU if they accepted GM food aid in whole grain form. If GM food aid were planted and crossed with local varieties, this could affect exports of maize. Zambia, for example, exports some maize to European countries, and Zambia and other countries in the region did not want to close the door to potential future markets in Europe for GM free maize exports.[71]

Conclusion

It is unfortunate that the debate over biotechnology has been played out in the developing world through the politics of food aid. It has profoundly affected the recipient countries, and their environments and future trade prospects may suffer from it. The literature on food aid has to date paid insufficient attention to the question of GMOs and the impact they have on the food aid regime.[72] I argue that it is time to insert the question of agricultural biotechnology squarely into the debates on food aid. The food aid regime is being influenced by a number of factors that are

unique to an age of agricultural biotechnology. These include the scientific debate over the safety of GMOs, as well as economic considerations linked to markets for GM crops. Both of these factors appear to have had an important influence on the policies on GM food aid pursued by both donors and recipients. In many ways, these factors are hard to separate from one another, and both are highly political. The notion put forward in the early 1990s that the food aid regime become largely 'depoliticized' must today be questioned. It is clear that the advent of agricultural biotechnology has fundamentally changed the nature of the regime.

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