FEEDING THE WORLD:

BATTLE ROYALE OF 21ST CENTURY AGRICULTURE*

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Back in 1997, US Secretary of Agriculture Dan Glickman described biotechnology and the patenting of life as "the Battle Royale of 21st century agriculture." In Seattle during the closing month of the 20th century, the United States and its cohort of fellow exporters of genetically modified organisms fired their first shots in this battle and found that they fizzled. Not only did the World Trade Organisation fail to launch a new round of trade talks, but proposals for the WTO to consider biotechnology issues also flopped while African nations demanded a ban on the patenting of all living organisms. In the first month of the new century, the US and other GMO exporters lost another round – their eight-year campaign to avoid a new international treaty to help safeguard the environment and public health related to the GMO trade. As the WTO's built-in agenda for agriculture and intellectual property rights heats up in the next few years of the 21st century, the global traders may find that society's preference for food security, ecological balance and human rights wins the war.

Fiasco in Seattle

Many remember Seattle as a kaleidoscope of boisterous citizen protests that defeated the World Trade Organization's efforts to launch a new "Millenium Round" of trade talks. Trade unionists, religious and peace activists, consumer and environmental advocates, and thousands of young people fed up with corporate globalization and the dictatorial behavior of the WTO made it clear that "business as usual" was unacceptable. There is no doubt that the fifty thousand or more citizens who dominated the streetscape of Seattle in December 1999 had a huge impact, but the more immediate cause of the failure was a profound lack of democratic practice within the WTO itself.

For years, developing countries had been complaining of a systematic failure to implement those elements of the 1994 Uruguay Round agreements that benefited them, while those benefiting the

industrialized sector were rigorously enforced. Fingers were also pointed at US Trade Representative Charlene Barshefsky and WTO Director-General Michael Moore, who resorted to the infamous "Green Room" technique, inviting selected governments into a closed-door session designed to brow-beat them into a series of trade-offs on the most contentious issues. While a common technique in past trade negotiations, it backfired in Seattle. As a group of Caribbean countries put it, "as long as due respect to the procedures and conditions of transparency, openness and participation that allow for adequately balanced results in respect of the interests of all members do not exist, we will not join the consensus to meet the objectives of this Ministerial Conference." This sentiment was echoed by African and Latin American countries as well, foreshadowing by one full day the eventual announcement of December 3rd that the Seattle talks were ended.

The biotechnology lobby was seriously let down in Seattle. The US had joined Canada and Japan in proposing a WTO "Working Party on Biotechnology" whose mandate was unclear. The US wanted it "to examine approval processes" for genetically modified organisms (GMOs) – taking dead aim at the European Union's (EU) array of national and regional restrictions on the import, planting and consumption of genetically engineered seeds and foods. A large number of developing countries objected, however, largely on grounds that the proper place to debate the matter was at the biosafety negotiations a month later, not at the WTO – and they never gave in.

As the obvious target of the WTO proposal, the EU was initially in agreement that biotechnology should be dealt with through the biosafety negotiations. EU delegates therefore reacted with outrage when the lead negotiator for the EU, Commissioner Pascal Lamy voiced EU support for a Working Party. Lamy defended his position by saying, "My job as a negotiator is how to get the maximum... I have to spend money to get money. I don't find it a problem if I can get what I need... At the end of the day, the Council [of Ministers] will make their decision." The next day, five environmental ministers of EU member states issued a public objection to Lamy's unilateral decision to switch positions; that night, they were joined by all 15 trade ministers of the member states, challenging the European Commission's authority to unilaterally define EU policy.

For Europeans, the issues of democracy and food safety mingle in a profound way. Earlier in 1999, the WTO overturned their ban on imports of beef laced with growth hormones, agreeing with the US that the ban is not "scientifically justifiable" and acts as a "barrier to trade." EU attempts to include the precautionary principle as a justifiable consideration in WTO policies were rebuffed by the US and its friends.

Biosafety Becomes Law

Citizens were back in the streets a month later, this time in Montreal to lobby their governments about what would become the newest international treaty: the Cartagena Protocol on Biosafety. Hundreds of people poured into the streets in frigid windy weather to march and hold overnight vigils and otherwise demonstrate their objections to the trade and release of GMOs into the global environment.

In the lead-up to Montreal, the EU had insisted that the precautionary principle was a non-negotiable demand – and its steadfastness paid off. The Cartagena Protocol articulates what may

be the most advanced expression of the precautionary principle in any international agreement. It states that, "lack of scientific certainty due to insufficient relevant scientific information and knowledge regarding the extent of the potential adverse effects...shall not prevent [a] party from taking a decision, as appropriate, with regard to the import" of a GMO. All national governments' rights to regulate all GMOs are affirmed, subject to certain procedures, while developing countries and countries in transition (the former Soviet states) may use the Protocol to regulate commodities even before national policies are in place.

In May, 2000, the new treaty was signed by 67 nations during the Fifth Conference of the Parties to the Convention on Biological Diversity in Nairobi. Since then, at least another 8 nations have signed on. When fifty of the signatories have ratified the new treaty according to their national legislative procedures, the count-down begins: ninety days later, the Biosafety Protocol will enter into force as international law. Legally, the United States cannot become a party to the new Protocol until it ratifies the parent treaty, the Convention on Biological Diversity (CBD). But the rest of the world made sure that it will have to follow the rules: the new law says that GMO trade between parties and non-parties "shall be consistent" with the Protocol's objectives and that parties "shall encourage" non-parties to comply.

While Europeans and the general public celebrate, the true victors of the Biosafety Protocol are, again, the developing countries. Throughout the years of negotiations, a "Like-Minded Group" – representing well over 80% of the planet's population and at least 80% of its biological diversity – was relentless in its commitment to biosafety. They insisted that all GMOs can have potentially harmful interactions within a given specific ecosystem, and that there is no substitute for case-by-case risk assessment and no substitute for nationally-determined risk management. In addition to environmental impacts, they succeeded in ensuring that human health and socio-economic factors are recognised as valid considerations in determining whether to accept or reject GMO imports.

The Like-Minded Group also insisted that the scope of the Protocol be comprehensive, and it is. They were especially adamant about commodities, and despite the vigorous objections of the GMO-exporting nations, commodities are included. As the Ethiopian spokesperson Tewolde Egziabher explained, a bag of feed corn is just as likely to spill off a truck during transit as a bag of seed corn, and farmers with a field to sow are unlikely to notice whether a bag of corn is labeled "seed" or "feed."

However, there is a big loophole. The Protocol does not require the full "Advanced Informed Agreement" procedure required for GMO exports not intended for food, feed, or processing – whereby each exporting country must notify each importing country of each impending shipment; the importing nation then has the option to accept it or not. Instead, the burden in the case of commodities rests on potential importing nations, who must monitor the "Biosafety Clearing-House" via the Internet in search of the obligatory notices to be posted whenever a GMO-producing nation approves a new GMO for commercial use. Then, each potential importing government has the option, without knowing whether the new GMO is on its way to its docks or not, of informing the exporting government that it will not accept any shipments of that GMO, based on the precautionary principle, as long as risk assessment procedures have been followed.

Labeling and Liability Provisions Pending

The fragile compromise of Montreal hinged on three key issues – the precautionary principle, the relationship to the WTO, and whether or not bulk commodity shipments of living GMOs required labeling. At approximately 4:45 a.m., the European Union conceded to the Miami Group (US, Canada, Australia, Argentina, Chile and Uruguay – all GMO-producers) that the shipments need merely be accompanied by documentation stating they "may contain" living GMOs. However, the Protocol stipulates that "detailed requirements" on this provision are to be worked out within two years after entry into force.

This issue may soon be propelled into a vortex of new controversy, as the possibility that a variety of genetically-engineered corn not approved in the US for human consumption due to possible allergic effects may be included in bulk shipments worldwide. Two multi-million dollar recalls of taco shells found by anti-GMO activists to contain this "StarLink" variety of Bt corn, approved only for animal feed, was announced by Kraft and Safeway the taco shell manufacturers. The US Department of Agriculture (USDA) is attempting to buy back crops from farmers who planted StarLink seed on some 315,000 acres this year, for re-sale to animal feedlots and ethanol producers; Aventis CropScience, the developer of StarLink, will reimburse the government. Aventis has also suspended further sales and its US registration for this variety of Bt seed. Archer Daniels Midland, Cargill and ConAgra are all figuring out how to handle their existing corn stocks and how to handle the rest of this season's deliveries.

Farmers and rural elevators are in a panic, and attorneys anticipate a rash of lawsuits as farmers and companies and government agencies all point fingers at each other for allowing this scandal to happen. US liability law will be tested, as the StarLink case unfolds. But what will happen if StarLink corn is detected in overseas shipments? Like the labeling issue, the Biosafety Protocol postpones consideration of liability until two years after entry into force.

Numerous international agreements have been negotiated to deal with liability and compensation that may be caused by other risky business. For example, in the case of oil pollution at sea, liability rests with the private sector, backed up by an international oil pollution compensation fund. In the case of nuclear damage, the duty to compensate rests on the operator of the nuclear installation, exonerating all other parties who may have been involved in the development of this high-risk form of energy. The Convention on International Liability for Damage Caused by Space Objects places the liability on states, but only for personal injury and not damage to or loss of property. Under the Basel Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and their Disposal (Basel Protocol), the liability lies with the carrier, shipper, or other party found to be at fault. Where fault cannot be proved, strict liability is placed on the exporter for transportation incidents or on the disposer should damages occur after receipt. All potentially liable parties are required to carry insurance, bonds, or other financial guarantees covering liability in advance.

Do any of these models properly allocate the liability for environmental, human health or socio-economic damage that may be caused by GMOs? In cases in which states properly implemented the Biosafety Protocol and damage resulted nonetheless, there may be one answer. What about cases in which states do not follow this treaty's rules?

Harmonizing the Precautionary Principle, the WTO and Other Biotech Agreements

Many observers suggest the effort in Seattle to inject biotechnology issues into the WTO's negotiating mandate was intended to preempt the Biosafety Protocol. Indeed, the fragile compromise of Montreal would seem to affirm this suggestion.

In exchange for the precautionary principle, the EU conceded to the Miami Group of GMO-exporting nations a weird recitation of clauses in the preamble of the Protocol regarding its relationship to the WTO. These read:

- "Recognising that trade and environment agreements should be mutually supportive with a view to achieving sustainable development,
- "Emphasising that this Protocol shall not be interpreted as implying a change in the rights and obligations of a Party under any existing international agreements,
- "Understanding that the above recital is not intended to subordinate this Protocol to other international agreements..."

At the heart of these legalistic ploys lies a longstanding ambiguity in international law: the relationship between a multilateral environmental agreement (MEA) and a trade agreement with inherently contradictory purposes and terms. Until the Biosafety Protocol enters into force, trade lawyers would probably agree that the fundamental WTO prohibition against discriminating against "like products" regardless of their method of production would hold, since there is no scientific risk assessment as yet indicating GMOs are harmful – as it did in the infamous beef hormone case between the US and EU. However, the Protocol establishes a clear distinction between GMOs and non-GMOs, despite strenuous efforts on the part of the US regulatory apparatus to declare them "substantially equivalent," and fully recognizes the Precautionary Principle. Upon entry into force, the Protocol establishes procedures enabling the regulation of living GMOs in virtually any country to protect the environment or plant, animal or human life and health, providing a scientific risk assessment is undertaken. The question then will become whether or not the WTO can trump this MEA.

Some observers suggest this is unlikely, on grounds any attempt by the WTO to disallow import restrictions on GMOs would generate such a public outcry, the WTO's already vulnerable credibility would suffer severely. Perhaps anticipating such conflict, the legal division of the WTO has suggested the WTO General Council adopt a definitive interpretation of the relationship between the WTO, the Cartagena Protocol on Biosafety and its parent treaty, the Convention on Biological Diversity. Such an authoritative decision would require a three-fourths majority of the General Council, on which all WTO members sit.

At least so far, no dispute has as yet been filed at the WTO staking terms of an MEA against terms of the WTO. But in September 2000, well before the Biosafety Protocol enters into force, Thailand filed the first WTO complaint involving GMOs. The complaint charges Egypt with illegally banning imports of Thai tuna-fish packed in soy oil, asserting that Egypt has no evidence the soy oil is genetically engineered and that the ban is discriminatory, targeting only Thai products. It is noteable, however, that Thailand did not dispute Egypt's right to ban GMOs generally.

Other less familiar settings for international deal-making have also put the issue of GMOs on their agendas. For example, the Codex Alimentarius Commission – a body of the UN's Food and Agriculture Organisation (FAO) and the World Health Organisation (WHO) that once set guidelines and provided technical assistance on food safety but was annointed by the WTO in 1995 as the presumptive standard-setting body – has set up an "ad hoc Intergovernmental Task Force on Foods Derived from Biotechnologies." The FAO's Commission on Genetic Resources for Food and Agriculture has established another intergovernmental group to develop a "Code of Conduct on Biotechnology."

The Trans-Atlantic Economic Partnership is set up to devise executive level "Mutual Recognition Agreements" to harmonize US and EU regulations, bypassing the normal regulatory processes of each country. With ever-greater public awareness in both the US-EU and a continuing intercontinental trade war, including US threats to dispute European regulations governing GMOs at the WTO, a pre-emptive Multilateral Recognition Agreement on GMOs seems unlikely for now. But the over-riding issue – how to harmonize multiple national policies and international agreements covering genetic engineering – is unresolved.

TRIPs Conflicts with Human Rights and Other Agreements

Second only to US-EU battles over agriculture policy, the issue of intellectual property rights dominated the Uruguay Round negotiations from 1986-1994. Diplomats in Geneva concede that the pharmaceutical industry actually drafted much of the Agreement on Trade-Related Aspects of Intellectual Property Rights – better known as "TRIPs." And the results were so controversial, the text required that the section on plant patenting be reviewed in 1999 and the whole TRIPs Agreement be reviewed every two years.

Intellectual property rights assign to inventors and artists (or more often their corporate sponsors) the option to monopolize novel forms of commercially valuable knowledge – such as new drugs, software, graphic design, or musical recordings – for extended periods of time, usually 20 years. These monopolies generally take the form of patents, trademarks or copyrights and have traditionally fallen under the domain of national law. Over the years, different countries have produced different intellectual property laws, each one a balance between the desire of innovators to be rewarded for their efforts and the right of society to benefit from useful innovations.

With the advent of TRIPS, virtually all the world's nations have lost their right to determine the balance of private and public benefits designed to meet national goals. Instead, they must comply with a single international standard designed to open their markets to transnational corporate interests, with severe consequences for food security and rural communities. TRIPs requires WTO members to provide for patents on genetically-engineered organisms and microorganisms, as well as "essentially non-biological and microbiological processes," and to provide for either patents or an "effective *sui generis*" form of intellectual property protection for plant varieties.

The "life industry" as Monsanto and other leading agrochemical-pharmaceutical conglomerates now call themselves, assert that patents are essential for research and development. Without royalties guaranteed through patents, they say, they could not afford to invest in the search for

plants whose active ingredients may be the source of new life-saving drugs. However, public health advocates point out that patented drugs are far more expensive than their generic counterparts, generating windfall profits well beyond the actual costs of development. Public interest scientists worry that researchers are increasingly reluctant to publish early discoveries to protect the likelihood that they (or, more often, their companies or universities) will be the first to patent a commercial result.

The proponents of life patents also argue that the monopoly and high returns are vital to genetic engineering, with which they will "feed the world." Yet once a commercially viable product is patented, companies invest in massive marketing campaigns and do not hesitate to enlist governments in promoting the product through international financial institutions, rural extension services, and special loans and grants tied to designated seed-and-chemical packages. As a result, vast monocultures are planted with genetically identical seed, which in turn leads to blights and the disappearance of local plant varieties and local food supplies. Furthermore, just as inbreeding in a human family over several generations can produce defective offspring, so too the narrowing of the gene pool for useful plants can jeopardize food security – not only that of farming households and communities but of all who eat. Even professional breeders depend on periodic cross-breeding with wild relatives of cultivated plants, precisely in order to diversify their genetic make-up. It is crucial for all humanity that the planet's genetic diversity remain robust.

The sellers of patented seeds may proclaim their products confer drought-resistance or salt-tolerance or other preparedness for changing agricultural conditions, but agronomic success really depends on multiple traits responding to particular rainfall patterns, complex soil chemistry, the tens of thousands of fungal and bacterial organisms in healthy soil, the prevalence of both pests and beneficial insects, birds and so on. Indigenous knowledge about these multiple conditions specific to each segment of arable land is simply not substitutable. The value of and the obligation to protect such indigenous knowledge is recognized in the Convention on Biological Diversity, but undermined by TRIPS.

Similarly, the United Nations Food and Agriculture Organization back in 1989 defined Farmers' Rights as "rights arising from the past, present and future contributions of farmers in conserving, improving and making available genetic resources." The FAO is now convening negotiations for a legally-binding agreement to operationalize Farmers' Rights, known as the International Undertaking on Plant Genetic Resources. Among other things, the agreed draft text of this document recognizes the right of farmers to "use, exchange, and, in the case of landraces and varieties that are no longer registered, market farm-saved seeds."

Many nations – including Thailand, India, and much of Africa – are developing *sui generis* systems that recognize the rights of farmers to save seed and of traditional peoples to regulate access to their knowledge of medicinal plants. This recognition of human rights is fully consistent with the Convention on Biological Diversity; the International Undertaking on Plant Genetic Resources; Convention 169 of the International Labour Organization; the Universal Declaration on Human Rights and the UN Covenants on Economic, Social, and Cultural rights; and - perhaps most significantly – customary law which has been exercised by local communities since time immemorial. And yet, the US government is seeking to disqualify these sui generis

systems and may in the future invoke the WTO dispute settlement process to evaluate them – probably on the basis of whether or not they are "effective."

Meanwhile, even before developing countries were due to comply with TRIPs, the US has unilaterally sanctioned or threatened to sanction other countries for perceived violations of TRIPs. In 1997, the US reimposed import duties on $260 million of Argentine exports in retaliation for Argentina's refusal to rewrite its patent legislation to US satisfaction and sent a letter to the Royal Thai Government (RTG) regarding draft Thai legislation allowing Thai healers to register traditional medicines, thus keeping them within the public domain. The letter advised the RTG that "Washington believes that such a registration system could constitute a possible violation of TRIPS and hamper medical research into these compounds" The US has repeatedly threatened Ecuador with the possible loss of $80 million worth of income from its fish exports to the U.S. in order to force ratification of a bilateral agreement on intellectual property rights. India, Pakistan, Ethiopia, Brazil, and many other countries have similarly faced unilateral threats from the US government about their patent laws.

Well aware of US aggression on the patents issue, developing countries are making the most of the required reviews. In preparations for the Seattle Ministerial meeting of the WTO, developing countries, led by the African Group, drafted proposals amending TRIPs so that "all living organisms and their parts cannot be patented; and those natural processes that produce living organisms should not be patentable." They also proposed that the list of exceptions to patentability would include the list of essential drugs identified by the World Health Organisation. In addition, they called for revisions to "ensure the protection of innovations of indigenous and local farming communities; the continuation of traditional farming processes including the right to use, exchange and save seeds, and promote food security" and for the explicit recognition of the Convention on Biological Diversity.

During the on-going reviews of the TRIPs Agreement, there is no doubt these reforms will continue to be pursued.

Conclusion

In Geneva, negotiators are back at the drawing table working on agriculture issues. This was a requirement of the Uruguay Round: in 2000, to start re-negotiations of the WTO Agreement on Agriculture (AoA) towards the long-term objective of "fundamental reform...taking into account the experience to that date" and "non-trade concerns" such as the environment and food security. There is no mandate for the WTO to consider biotechnology, although the US is trying again, during early sessions of the AoA negotiations, to inject the issue of GMOs. With the advent of the Cartagena Protocol on Biosafety, there may be more momentum than before to settle the perennial question of the WTO:MEA relationship. The required review of the TRIPs Agreement is going forward. Support for the African and Like-Minded Groups' proposals could help ensure that economic and political justice as well as the social and cultural rights of rural communities over their genetic resources are reinstituted.

In December 2000, the first meeting of the Inter-governmental Intergovernmental Committee for the Cartagena Protocol on Biosafety (ICCP) will convene in France. Farm organisations,

consumer groups, environmentalists, and others are preparing to engage government officials as labeling and liability issues seize center-stage. Research and policy decisions on these issues is needed, in the international as well as national contexts, as marketing proceeds meanwhile, virtually unchecked.

The Conference of the Parties to the Convention on Biological Diversity meets annually, to review progress towards implementing not only the Cartagena Protocol but the obligation to "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities" and more generally promote the sustainable conservation and use of biological resources and the equitable sharing of their benefits. Similarly, the UN's Food and Agriculture Organisation will continue its efforts to reach agreement on the International Undertaking, a treaty regarding the management of genetic resources for food and agriculture that is expected to become yet another protocol to implement the 1992 Convention on Biological Diversity.

At its most fundamental level, the debates over genetic engineering and patents on life reflect the wider public debates over globalization and global governance. There is a growing sense that not only the WTO but all of the entrenched bureaucracy of corporate globalisation is vulnerable to citizen action. In many countries, citizens are becoming more aware, more alarmed and more organized in their objections to GMOs. In response, companies are taking steps to develop GMO-free products including Gerber's and Heinz' baby foods, McDonald's and Burger King's potatoes, Frito-Lay, Seagram's liquor, and all of Novartis' food products. Many supermarkets in Europe are advertising their own brands GMO-free products. ADM is offering premiums to farmers that can supply the company with GMO-free corn. More and more farmers are opting to plant non-GMO seeds.

Where consumers have influenced markets, regulations follow. Not only the EU but Japan, Korea, Australia, New Zealand, Brazil, Egypt, Sri Lanka and China have joined the list of countries regulating GMOs to one degree or another. Thanks to the StarLink fiasco, the U.S. may no longer be able to pretend that its regulatory system is adequate. Soon, it may be that the biotech industry itself may opt for a coordinated international system rather than trying to find its way through a maze of varied national regulations.

Ultimately, the food security of the planet is at stake. While the industry promotes patented genetic engineering products as the solution to hunger, others believe it presents threats to agro-biodiversity and the planet's capacity to regenerate life. In fact, there is little convergence between the destination of export crops in the global marketplace and areas where people are suffering from malnutrition. Less than 0.3% of total corn exports from the United States, for example, went to the 25 countries listed by the FAO as the world's most severely undernourished. Instead, a diversified production system based on locally adapted seeds and integrated cropping is likelier to feed the world of the 21st century.

After the floods in Southern Africa earlier this year, a group of scientists from the region, including plant breeders, geneticists, and biotechnology experts, issued a public letter dated March 2000 in which they requested relief organizations *not* to send genetically engineered or patented seed. Instead, they urged the international community to "support efforts to reconstitute locally adapted planting material and quality seed material/varieties, like indigenous land races

or farmers' varieties appropriate to the various ecosystems." They insisted that this solution is best not only for the immediate regeneration of production systems after the severe flooding, but also for the medium and long term. In every case, they emphasized that farmers know how to use locally adapted seed; they don't need cash or chemicals to use them; and they can be resown and spread readily for continual adaptation under local conditions.

Which approach will prevail? The Battle Royale of the 21st century is not over yet.