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**Terminator and Traitor Technology: The Indigenous Response**

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## **Terminator and Traitor Technology: The Indigenous Response**

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## I. Overview

This paper does not attempt to speak "for" indigenous peoples. Indigenous peoples speak for themselves. Rather, this paper is an academic exercise; a collection of the author's observations regarding certain trends in the law that she believes will affect indigenous peoples and agricultural biotechnology.

This paper also focuses on a particular kind of genetically modified organism (GMO), the so-called Terminator or Technology Protection System (TPS) and Traitor technologies because they take intellectual property rights (ipr) towards its most extreme and logical conclusion, a conclusion that cannot stand given the global struggle over indigenous ipr. Further, these fundamental ipr issues are related to the current debate over GMOs and their labeling.

Some scientists claim that "Asia's developing countries must invest heavily in genetic engineering or risk being unable to feed their growing populations in the next century."<sup>1</sup> Supporters of this view include Norman Borlaug, a Nobel laureate, and one of the architects of the 60s "Green Revolution."<sup>2</sup> Others counter that, "GM crops are 'irrelevant' to ending world hunger, will concentrate power in too few hands . . . [and] are . . . creating classic preconditions for hunger and famine."<sup>3</sup> They point to Indian research showing that land reform and simple irrigation can boost crops by 50% in contrast to 10% increases from GM crops. Critics of GM crops also point to the large amounts and expense of various inputs that even Green Revolution crops required,<sup>4</sup> inputs that developing nations could ill afford<sup>5</sup> yet resulted in enormous profits to agribusiness.<sup>6</sup>

### A. Indigenous Defined

There are some 300 million indigenous peoples living worldwide. Most of them are among the poorest and most disadvantaged groups within their particular countries. The

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<sup>1</sup> *Scientists Say Food Supplies Hinge on Genetic Engineering*, The Guardian & The Observer, May 1, 1999 by Claire Wallerstein, reporting on the results of a report commissioned by the Asian Development Bank.

<sup>2</sup> "The world's population is 6bn, and there are already 800m of us facing severe hunger. If you used the farming techniques being employed in the 1930s, you wouldn't be able to feed more than 2bn people". . . . 'He [Borlaug] said wheat itself was a product of natural genetic engineering -- containing seven additional chromosomes from a different species with which it had cross-bred before the advent of agriculture.' "If we regularly eat wheat, which contains seven whole alien chromosomes, how much danger can there be from a single gene?" Id., quoting Norman Borlaug.

<sup>3</sup> *GM Giants "Will Force the World into Famine*, The Guardian & Observer, May 10, 1999, by John Vidal, reporting on the results of a major report from Christian Aid.

<sup>4</sup> "Most 'Green Revolution' seeds required high levels of additional inputs, including natural resources such as irrigation and corporate products such as artificial fertilizers and pesticides." *The Self-Destructing Seed: Genetic Engineering Threatens Food Sovereignty*, Native Americas at 34, Spring 1999 by Craig Benjamin.

<sup>5</sup> "Today, there is considerable debate whether or not the high yields initially achieved by the Green Revolution have actually been sustained and whether these increase, if any, adequately compensate for the high costs of inputs and the hard to the environment which has been caused by this industrial model of agriculture." Id. At page 34.

<sup>6</sup> "What is clear is that the Green Revolution was a major set back to local self-sufficiency and crop diversity that, nonetheless, was highly profitable to agribusiness and in fact helped fuel the expansion of these corporations into the Southern Hemisphere." Id at 34.

use of the term "indigenous" and a precise definition of who exactly are "indigenous peoples" have been the subject of much controversy. Efforts by entities such as the World Bank, the United Nations, and the International Labor Organization to come to a precise, single definition of these terms have been largely unsuccessful. This paper therefore starts with a working definition of indigenous peoples that will be used throughout this document.

For purposes of this Roundtable, this paper adopts the following indicia<sup>7</sup> for determining which groups are indigenous peoples, although there are certainly other definitions<sup>8</sup> in use:

#### *Essential Requirements*

- self-identification as a distinct ethnic group
- historical experience of, or contingent vulnerability to, severe disruption, dislocation, or exploitation
- long connection with the region
- the wish to retain a distinct identity

#### *Relevant Indicia*

- nondominance in the national (or regional) society
- close cultural affinity with a particular area of land or territories
- historic continuity (especially by descent) with prior occupants of land in the region
- socioeconomic and cultural differences from the ambient population
- distinct objective characteristics: language, race, material or spiritual culture, etc.
- regarded as indigenous by the ambient population or treated as such in legal and administrative arrangements.

This paper will treat American Indians of the Western Hemisphere as well as African American small farmers in the southern United States as indigenous peoples for purposes of this Roundtable. The former group is undeniably within the above indicia for indigenous peoples. Some would also include the latter group within those indicia as well. Others would not. However, since the experiences of the African American small farmer within this country are instructive, African Americans are included as indigenous

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<sup>7</sup> Hunter, David, Salzman, James, Zaelke, Durwood, International Environmental Law and Policy, Foundation Press, New York, New York (1998) p. 1336.

<sup>8</sup> One such definition is quoted in International Environmental Law and Policy and is taken from Henry Steiner & Philip Alston, International Human Rights in Context 1007 (1996): "Although no authoritative text defines *indigenous peoples*, the term is usually thought to refer to communities or nation as having an important historical continuity with societies that inhabited the same general territory and that predated colonization or invasion by other peoples. We are here concerned with such peoples who seek to preserve their ethnic and cultural identity, often through preservation of ancestral territory, and to continue as distinctive communities with their own social and legal institutions."

peoples for purposes of this paper. Finally, this paper will also use the terms "American Indian" and "Native American" interchangeably as well as the terms "Black" and "African American."

## **B. Recurring Themes**

Indigenous peoples seem have to been on a collision course for a long time with the business and scientific worlds over the latter's use of intellectual property laws to profit from products originally developed by indigenous peoples. Professor Naomi Roht-Arriaza of Hastings College of Law provides a laundry list of just a few of the areas in which such collisions have occurred in her article, *Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities*.

According to Roht-Arriaza, just a few examples include quinine (used for malaria), rosy periwinkle used by Eli Lilly in anticancer drugs, neem (used as an insecticide), endod berry used by the University of Toledo in controlling threats to marine ecosystems, katempfe and serendipity berry patented by the University of California and Lucky Biotech (used as a calorie-free sweetener), naturally colored cotton patented by entomologist and entrepreneur Sally Fox,<sup>9</sup> as well as attempts, some successful, to patent human cell lines of indigenous people.

Western governments also have a long history of formulating and executing policies aimed at destroying indigenous peoples by removing or undermining their ability to feed themselves. After the subjugation of indigenous peoples in the Americas was complete, Western governments have consistently implemented policies and actions that sacrifice the long-term productivity of indigenous farmers for short-term corporate gain.

One example may be found in Peru. From the 1930s to the 1980s, the Peruvian government instituted a series of laws and policies that were designed to destroy perennial, naturally pigmented forms of indigenously grown cotton. These measures were supposedly instituted to protect all-white varieties of cotton that were more commercially viable. They included measures to quarantine the colored cotton grown by indigenous farmers so that all possible alternative plant hosts for cotton pests were eliminated, plus liberal applications of pesticides.<sup>10</sup>

The benefits of adopting such measures proved dubious at best as even the survival of the commercial all-white cotton was eventually severely threatened by the governmental policies.<sup>11</sup> New plant pathogens arose after the massive pesticide applications. In 1990, the Peruvian government finally made its eradication practices illegal. However, Peru's

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<sup>9</sup> Under the U.S. Plant Variety Protection Act.

<sup>10</sup> Vreeland, James M. Jr., "The Revival of Colored Cotton," *Scientific American*, Volume 280, Number 4, April 1999, page 117.

<sup>11</sup> Id at 117-118.

annual consumption of pesticides reached an all-time high in the current decade although only 1 percent of the insect pest damage was being controlled using such methods.<sup>12</sup>

Another example may be found in Mexico. When the North American Free Trade Agreement (NAFTA) became a possibility, the Mexican government actually rewrote its constitution to allow the privatization and sale of *ejido* lands. In the early 1960s, Mexico was almost entirely self-sufficient in food production, largely thanks to the indigenous and peasant farmers who toiled away on collectively owned *ejido* lands. The loss of *ejido* lands and the resulting loss of self-sufficiency that such lands guaranteed triggered the Mayan uprisings in Chiapas.<sup>13</sup>

Current concerns about how the business and scientific communities use copyrights<sup>14</sup>, trademarks<sup>15</sup>, and patents<sup>16</sup> to "cash in" within both indigenous<sup>17</sup> and ostensibly non-indigenous<sup>18</sup> contexts reveal several recurring themes that are particularly pertinent to Native Americans:

1. The biotech industry depends for its growth on the ability to patent life forms.<sup>19</sup>

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<sup>12</sup> Id at 118.

<sup>13</sup> Native Americas at 33.

<sup>14</sup> See, for example, James Boyle's, *Shamans, Software, & Spleens*, Harvard University Press (1996).

<sup>15</sup> See, for example, Rosemary J. Coombe's, *The Cultural Life of Intellectual Properties*, Duke University Press (1998).

<sup>16</sup> Roht-Arriaza, Naomi, *Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities*, 17 Mich. J. Int'l L. 919 (1996).

<sup>17</sup> "Indigenous and local communities have a long history of using plants for almost all needs, including food, shelter, clothing, and medicine. Common remedies used today were often first developed by healers prior to contact with industrial societies. Yet, although many of today's drugs and cosmetics originated from the stewardship and knowledge of indigenous and local communities, that knowledge remains unrecognized and unvalued until appropriated from those communities by Western corporations or institutions." Id at 921.

<sup>18</sup> "This is a quick and dirty grab -- like the wild West, where everyone was trying to stake a claim,' complained one geneticist, who spoke on the condition of anonymity because he said he had several friends involved in genome companies. 'It's basically people with a lot of human genome money trying to cash in.'" Fisher, Lawrence M., *Mining the Genome: Big Science as Big Business -- A special report.; PROFITS AND ETHICS CLASH IN RESEARCH ON GENETIC CODING*, The New York Times, Section 1, page 1, January 30, 1994.

<sup>19</sup> "The common denominator of our business is biology. The research and technology is applied to discover, develop and sell products that have an effect on biological systems, be they human beings, plants or animals." Daniel Vasella, CEO of Novartis, as quoted in Pilling, David. "The Facts of Life: Chemical and Pharmaceutical Companies see their future in biological innovation. Financial Times, 9 December 1998, p. 21.

"In the 20<sup>th</sup> century, chemical companies made most of their products with non-living systems. In the next century, we will make many of them with living systems." Jack Krol, DuPont chairman of board, quoted in case study prepared by Professor Jonathan West, Harvard Business School, "E.I. DuPont de Nemours and Company," November 19, 1998, no. N-9-699-037.

"Seeds are software. And we have the seeds." Alfonso Romo Garza, owner of Empresas La Moderna, a Mexico-based seed company that controls 24% of the global vegetable seed market, as quoted from Friedland, J. and Kilman, S. "As Geneticists develop an appetite for greens, Mr. Romo flourishes," Wall St. Journal, 28 January 1999.

2. Many of the GMO patents have been obtained for processes and/or products that are neither novel, inventive nor useful. GMOs are usually rather bizarre copies of living forms that are either already available in nature and/or developed by indigenous peoples using conventional selective breeding methods over a period of time. Rather than acknowledge some of the inherent flaws in GMOs, the definition of what is patentable has been stretched beyond recognition to sidestep important issues.

3. The biotech industry is heavily dependent on ignoring the fact that all technologies are embedded in particular economic and social systems with various costs and benefits.<sup>20</sup> This means that society can **choose** to use or **not use** a particular technology.

4. The biotech industry is also heavily dependent on important remnants in national and international legal systems that continue to reflect a brutally oppressive past in which the legality of the enslavement of, genocide against, and theft from indigenous peoples was acceptable.

In today's world, the deep dependence of the biotech industry on the most ugly remnants of outmoded legal systems depends on not being openly acknowledged to continue. "Few people would feel comfortable with private corporations owning the basis of the world's food supply. Most people would object to businesses appropriating the physical essences of native peoples around the world, without their consent or benefit."<sup>21</sup> Obviously, corporations believe this is true or they would not be so concerned with keeping this knowledge from the public at large. Hence, labeling and/or attempts to disguise true contents of various products will continue to be hotly debated.

Ostensibly, the current debate over the use of agricultural biotechnology and the patentability of life forms would seem to be emanating from indigenous groups outside the U.S. that have been affected by the activities of American-owned corporations

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"The agricultural and medical marketplaces are very different but at the research level there is growing commonality. Technologies such as gene sequencing, combinatorial chemistry and high-throughput screening are as relevant to the agricultural as to the human health section." Sir David Barnes, chairman of Zeneca as quoted from an article by Clive Cookson and Nikki Tait, "from Corn to Cancer," Financial Times, June 2, 1998.

"Our goal is now to have sequenced, mapped and filed for intellectual property on the novel and most commercially relevant genes by the second half of the year 2000." Incyte.

*All quotes are taken from The Gene Giants, RAFI Communique, March/April 1999.*

<sup>20</sup> *Selling Suicide*, Christian Aid Report, May 1999.

<sup>21</sup> Martin Teitel, *Selling Cells: The Thriving Business of Patenting Life*, Dollars and Sense, Sept/Oct. 1994 No. 195, page 39.

operating in foreign countries.<sup>22</sup> For example, indigenous peoples from Amazonia have formally begun to challenge questionable patents.

On March 30, 1999, the Center for International Environmental Law, the Coordinating Body of Indigenous Organizations, and the Coalition for Amazonian Peoples and Their Environment filed a request with the U.S. Patent and Trademark Office seeking the cancellation of a patent (No. 5,751) on the ayahuasca plant. Ayahuasca (*Banisteriopsis caapi*) is native to the Amazon rainforest and is collected by indigenous peoples for ceremonial and medicinal uses. The PTO issued this patent to Loren Miller in 1986.

Loren Miller claimed the plant was novel because he identified its medicinal qualities. Miller apparently completely ignored the fact that indigenous peoples in the Amazon had already identified the plant's medicinal qualities for generations. He claimed that the plant was distinct because it had different colored flowers from other plants of the same species. In contrast, a leading expert claims that the flowers are typical of the species.<sup>23</sup>

The suppression of agricultural production by indigenous peoples within the U.S. was largely complete by the beginning of the Industrial Revolution. White farmers dominated the American landscape. They cultivated largely indigenous crops and used indigenous farming techniques without ever acknowledging the source of their success, the indigenous farmer.<sup>24</sup> Since that time, the typical white farmer has, in turn, increasingly been displaced by larger, industrialized agribusiness organizations that are largely dominated by whites.

Nevertheless, there are still indigenous groups within the U.S., such as the Zuni<sup>25</sup>, Santa Ana and San Juan Pueblos in New Mexico, who are still able to practice traditional forms of agriculture. Other tribes within the U.S. include the Iroquois of New York,<sup>26</sup> and the Anishinabe or Chippewa of Minnesota.<sup>27</sup> Tribes within the U.S. like the Zuni and others would be affected by the various developments in the agricultural biotech industry discussed in this paper.<sup>28</sup>

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<sup>22</sup> "The global economy, largely beyond the control of any national government, is an extremely powerful factor in the development of our future. Today, Transnational Corporations (TNC) control two-thirds of world trade. Many TNCs are today among the largest economies in the world; 50 of the world's 100 largest economies are TNCs. Many TNCs are much richer and more powerful than national governments. Their activities are the root of very many of the problems faced by indigenous peoples in the field of cultural and intellectual property rights, land and resource rights." quoting Baer, Lars Anders (V.P. of SAAMI Council, Jokkmokk, Sweden), *Initiatives for Protection of Rights of Holders of Traditional Knowledge, Indigenous Peoples and Local Communities*, WIPO/INDIP/RT/98/4A, p.2, paper presented at WIPO Roundtable on Intellectual Property and Indigenous Peoples, Geneva, July 23 and 24, 1998.

<sup>23</sup> Additional information on the challenge to the ayahuasca plant patent may contact David Downes, Senior Attorney at the Center for International Environmental Law in Washington D.C.

<sup>24</sup> Theda Purdue, *Cherokee Women: Gender and Culture Change, 1700-1835*, pp. 188-190.

<sup>25</sup> Corn, beans, squash, melons, chilies, and peaches.

<sup>26</sup> White corn and corn products

<sup>27</sup> Wild rice in organically certified lakes

<sup>28</sup> See Greaves, Tom, Editor, *Intellectual Property for Indigenous Peoples: A Sourcebook* (1994) for additional information on some experiences of the Zuni.

As noted on the first page, this paper does not attempt to speak for indigenous peoples. The quotes below provide the reader with a small sample of some of the comments that indigenous peoples themselves are making:

"The effects of continually expanding requirements from urban societies are speeding up global economic activities. Without a change in the way of thinking and practicing there will be an ever-increasing effect on indigenous peoples. It is therefore time that all parties concentrate on making serious and constructive attempts to solve those problems."<sup>29</sup>

"We are living through a period of wholesale plundering or pirating of indigenous knowledge and products without any related benefits for our peoples. For instance, until quite recently the involvement of indigenous botanists and medicine men was considered retrograde in medicine, while today many of medicine's transnational pharmaceutical companies are investing large or smaller amounts of money to gain control of traditional indigenous medicine, and even registering sacred plants as if they have been developed in a laboratory."<sup>30</sup>

"The present legal situation is the result of a grim unlawful past. It is hard to see how to find a lasting settlement without resolving core problems, one of which is the lack of protection for fundamental indigenous rights, such as intellectual property rights. Commercial interests very often violate indigenous intellectual property rights. Although, such violations do not formally constitute a breach of written legal standards, as neither national legislations (sic) not (sic) international standards acknowledge the rights of indigenous peoples, these enterprises are still accountable to indigenous customary law. **This fact cannot any longer be ignored by governments, the UN-system and business entities.** (emphasis mine)<sup>31</sup>

It can be anticipated that the responses of indigenous peoples to Terminator and Traitor technologies will reflect, at least in part, some of these kinds of comments.

## **II. Analysis of Corporate and USDA Response to Criticisms of Agricultural Biotechnology**

### Corporate Response

The corporate response to indigenous and other critics of agricultural biotechnology seems to be largely an outgrowth of the same lines of thinking expressed in support of the use of hybrid crops during the Green Revolution.

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<sup>29</sup> Id at n.22.

<sup>30</sup> Lopez, Atencio (President of Napguana Association, Panama), WIPO/INDIP/RT/98/4B, page 1 of paper presented at WIPO Roundtable.

<sup>31</sup> Id at n.22.

With respect to agricultural biotechnology, GMOs in general, and Terminator technology, corporate interests claim that avoiding worldwide famine and the evils of protectionism necessitate the use of GM crops. They tout seeds that have been modified to resist pests and herbicides as miraculous ways in which to boost yields<sup>32</sup> in agriculturally troubled areas such as India.<sup>33</sup> They point to the fact that since unlabeled genetically modified canola and soybeans are already on the market there is no need now to label GMOs.

Governments are also among the cheerleaders for the use of GM crops.<sup>34</sup> This is very important. Corporations would not be able to foist GMOs on an uninformed public without governments either actively supporting corporate efforts or at least turning a blind eye to their activities. The Peruvian and Mexican examples already discussed in this paper demonstrate how far Western governments are willing to go to subordinate the interests of the most disadvantaged groups within their borders to the whims and interests of the more powerful.

With respect to Terminator (TPS) technology, corporate interests have echoed most of the assertions made in support of GMOs and have added claims like the following:

- Farmers will not be forced to buy Terminator seed.
- Farmers will not be prevented from saving seed from traditional crops.
- Terminator technology will not work successfully in the field.
- "TPS will protect American agriculture from technological piracy"<sup>35</sup>
- U.S. farmers are paying for advanced technologies which farmers in other countries have used without paying for them and then competed with U.S. farmers.
- TPS will help protect the environment from potential gene escapes into other species.
- "Using seed with TPS will never be a requirement, but merely one option out of thousands for farmers throughout the world."

Now that scientists and farm economists in the world's largest agriculture research network, The Consultative Group on International Agriculture Research (CGIAR), have condemned the technology and other organizations are calling for at least a moratorium on the use of GMOs while the issues are sorted out, some corporate interests have fallen back to the position of expressing corporate respect for and deference to public concerns:

Monsanto's 'terminator technology' may not be terminated, but neither will it be germinated soon because of the global furor it has caused.

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<sup>32</sup> *Bitter Words Over Better Seeds*, Business Week, January 11, 1999, p. 16.

<sup>33</sup> *Id.*

<sup>34</sup> "The enthusiasm isn't limited to multinationals. Indian government scientists have been working since the late 1980s on genetically modified crops, including rice and tomatoes. 'Our intention is to take it to the market,' says P.K. Ghosh, head of the government's Biotechnology Dept. 'Let the farmer decide.'" Quoted in *Bitter Words Over Better Seeds*.

<sup>35</sup> Harry Collins, Vice President, technology transfer, Delta Pine & Land Co., quoted in his letter to the Star Tribune, April 24, 1999.

St. Louis-based Monsanto Co. announced Thursday that it would not market the controversial new gene technology until the completion of studies that examine the environmental, economic and social effects.

We believe that the concerns about gene protection technologies should be heard and carefully considered before any decisions are made to commercialize them,' the company said in a statement.

For Monsanto, Thursday's announcement amounts to a retreat from its spirited defense of the technology. Philip Angell, Monsanto's director of communications, said the company had taken its new position 'because the reaction to terminator in a lot of different quarters in many countries was clearly becoming the dominant discussion about biotechnology.

Angell said Monsanto had consulted with prominent scientists before issuing its statement, which he described as 'recognition that we need some level of public acceptance to do our business.'<sup>36</sup>

Others continue to dismiss unfavorable criticism. They accomplish this by either ignoring the criticism or characterizing it as resulting from vague socioeconomic interests that are unrelated or even detrimental to an informed debate about GMOs. Because of historical weaknesses in legal protection for indigenous peoples, media neglect, and the massive government support that corporations and agribusiness usually enjoy in foreign countries such as Mexico and Peru, these techniques for dismissing criticism have been largely successful.

### USDA Response

Within the U.S., the experience of the small, African American farmer with the USDA illustrates the kind of governmental attitudes and "encouragement" that indigenous farmers such as the Pueblos, the Iroquois, and the Anishinabe are likely to encounter today as the debate over agricultural biotechnology continues. To introduce the reader to what is a vast record of government-sanctioned discrimination against nonwhite farmers, the following is quoted from the District Court opinion in the settlement reached this April in the case *Pigford v. Glickman*<sup>37</sup>:

Forty acres and a mule. As the Civil War drew to a close, the United States government created the Freedmen's Bureau to provide assistance to former slaves. The government promised to sell or lease to farmers parcels of unoccupied land and land that had been confiscated by the Union during the war, and it promised the loan of a federal government

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<sup>36</sup> Quoted from *Monsanto Will Wait for Studies on Disputed New Gene Technology*, April 23, 1999 St. Louis Post-Dispatch, page A4.

<sup>37</sup> *Timothy Pigford, et al., v. Dan Glickman, Secretary, United States Department of Agriculture*, 1999 U.S. Dist. LEXIS 5220, Decided and filed April 14, 1999.

mule to plow that land. Some African Americans took advantage of these programs and either bought or leased parcels of land. During Reconstruction, however, President Andrew Johnson vetoed a bill to enlarge the powers and activities of the Freedmen's Bureau, and he reversed many of the policies of the Bureau. Much of the promised land that had been leased to African American farmers was taken away and returned to Confederate loyalists . . . [still] African Americans persevered. By 1910, they had acquired approximately 16 million acres of farmland. By 1920, there were 9250,000 African American farms in the United States.

On May 15, 1862 . . . the United States Department of Agriculture was created . . . .

As the Department of Agriculture has grown, the number of African American farmers has declined dramatically. Today, there are few than 18,000 African American farms in the United States, and African American farmers now own less than 3 million acres of land. The United States Department of Agriculture and the county commissioners to whom it has delegated so much power bear much of the responsibility for this dramatic decline. . . .

For decades . . . . the Department of Agriculture and the county commissioners discriminated against African American farmers when they denied, delayed or otherwise frustrated the applications of those farmers for farm loans and other credit and benefit programs. Further compounding the problem, in 1983 the Department of Agriculture disbanded its Office of Civil Rights and stopped responding to claims of discrimination. These events were the culmination of a string of broken promises that had been made to African American farmers for well over a century.

It is worth noting that, in spite of the recent settlement, ". . . for many of them, it was too little, too late. Those black farmers have lost everything -- their homes, their land, their dignity and the chances to pass on to their families the wealth that they have been able to amass. The settlement's provisions for \$50,000 per farmer, tax-free, and relief from farm-related debt owed to the federal government won't help those who still owe hundreds of thousands to the commercial lender to whom they had to turn once the government either rejected loans or sat on until after planting seasons."<sup>38</sup> The bottom line is that black farmers have lost millions of acres of land within this century through government action and inaction.

It is also worth noting that it was roughly during this same period of time that the U.S. government adopted the "allotment" program, under which tribes within the U.S. lost

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<sup>38</sup> Editorial, *Too little, too late*, The Courier-Journal, January 7, 1999.

more than 90 million acres of tribal lands, and the "Indian relocation program" under which many tribal members were enticed to move from the reservation into urban areas. Numerous employment opportunities supposedly awaited Indian people who relocated. Today, they and their descendants remain in these urban ghettos. The bottom line is that indigenous peoples in the U.S. have lost millions of acres of tribal land within this century through government action and inaction.

Finally, it is also worth noting that as recently as October of 1998, the USDA completely ignored the needs of indigenous farmers still engaged in traditional agriculture within this country in its explanation of why it has played such a pivotal role in the development of TPS or Terminator technology<sup>39</sup>:

- *TPS uses a genetic engineering approach to prevent **unwanted** (emphasis mine) germination of plant seeds.*

This statement implicitly takes the side of the agricultural biotech industry without explicitly acknowledging that the USDA has evidently adopted that industry as its most important constituency. It also completely ignores the fact that the overwhelming majority of indigenous farmers in this country are engaged in subsistence agriculture.

- *These approvals [USDA's Animal and Plant Health Inspection Service, U.S. Food and Drug Administration] are expected because there appear to be no crop or food safety risks to the new technology. There also appear to be no environmental risks.*

This statement is dangerously premature. The Consultative Group on International Agriculture Research recently condemned TPS technology. Other organizations have just begun to study the issue.<sup>40</sup> Christian Aid says that large farmers are the only ones who will benefit from GM technology and has called for a five-year freeze on GM crops while the food and environmental safety risks are studied. Within the U.S., many tribes have not been consulted at all. As a consequence, they have not yet had meaningful opportunities to assess either the costs or the benefits that GM crops may present to them.

- *Could the new technology hurt small farmers by ending 'brown-bagging,' the practice of collecting seed at harvest and bagging it to use as the next year's planting stock? Few U.S. farmers do this; it is much more common in other countries.*

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<sup>39</sup> Each of the above quotes in italics are taken from the USDA Fact Sheet, "Why USDA's Technology Protection System (a.k.a "Terminator") Benefits Agriculture - A Discovery to Spur New Crop Improvement," October, 1998.

<sup>40</sup> For example, the International Food Policy Research Institute also may be studying the issue. Phil Pardey, a research fellow for the Washington-based institute, referred to 'a woeful lack of understanding of the potential impacts on both developed and developing nations.

Not only does the USDA dismiss indigenous farmers in this statement, they also disparage their plant breeding techniques by characterizing them as "brown bagging."

- *Countries where brown bagging is common practice will still be able to save their traditional seeds and other public varieties.*

This statement ignores this country's long history of adopting governmental policies designed to undermine and destroy indigenous farming inside and outside the United States.

- *it [Terminator technology] will be so widely adopted that farmers will only be able to buy seeds that cannot be re-germinated.*<sup>41</sup>

The USDA's prediction about the eventual pervasiveness of Terminator technology illustrates how accepted, and even expected, the domination of corporate interests is. This can only bode ill for indigenous peoples.

### III. Through the Window of Human Rights Laws

#### A. Some General Legal Protections

Given the enormous power that corporate interests can bring to bear on the governments of the world, are there any legal mechanisms in place that indigenous peoples can use to bring some balance into the picture and to protect themselves? On an international level, two covenants in particular refer to the right of all peoples not to be deprived of their means of subsistence. They are the International Covenant on Civil and Political Rights (ICCPR), U.N.G.A. Res. 2200A(XXI)(Dec. 16, 1996), 21 U.N.G.A.O.R. Supp. (No. 16) at 52, U.N. doc. A/6316 (1966), 999 U.N.T.S. 171 and the International Covenant on Economic, Social and Cultural Rights (ICESCR), U.N.G.A. Res. 2200A (XXI)(Dec. 16, 1966), 21 U.N.G.A.O.R. Supp. (No. 16) at 49, U.N. doc. A/6316 (1966), 993 U.N.T.S. 3.

The ICCPR and the ICESCR say that all States which are parties to these covenants shall promote and respect the realization of self-determination of **all** peoples. Further, these covenants say that those States with ethnic, religious or linguistic minorities within them shall not be denied the right to enjoy their own culture. Ostensibly, the ICCPR and ICESCR appear to contain language that would provide some measure of legal protection to an *individual* indigenous person to practice traditional agriculture, which is culturally based, without outside governmental interference. However, both covenants also contain a provision that neither covenant is to be interpreted so as to "impair" the inherent right of all peoples to "enjoy and utilize fully their natural wealth and resources." It is unclear how this language would be interpreted in the event that indigenous peoples as individuals tried to use either covenant to protect themselves from governmental threats to their way of life.

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<sup>41</sup> This quote from the USDA is taken from *GM Giants "Will Force the World into Famine,"* The Guardian and the Observer, John Vidal, May 10, 1999.

One can look to several other general international human rights laws for clues to the likelihood for indigenous success. There do exist several human rights provisions that guarantee all peoples the right to a healthy environment, the right to life, to health, and to be free of interference of one's home and property. These provisions stem from various sources such as the 1988 "San Salvador" Protocol to the American Convention on Human Rights, the African Charter on Human and Peoples' Rights, the ICCPR, the ICESCR, etc. However, even the strongest of these kinds of provisions have not been able to overcome a propensity for finding that a particular interference<sup>42</sup> is justified in spite of the right guaranteeing noninterference.<sup>43</sup>

## B. Legal Protections Specific to Indigenous Peoples

There do exist legal provisions that are supposed to apply specifically to indigenous peoples. Two **binding** international instruments that have been ratified by the International Labor Organization are the 1957 ILO Convention on the Protection of Indigenous and Other Tribal and Semi-tribal Populations in Independent Countries, 328 UNTS 247 (1957) (a.k.a. Convention No. 107) and the 1989 ILO convention Concerning Indigenous and Tribal Peoples, 28 I.L.M. 1382 (1989)(a.k.a. Convention No. 169). Note that Convention 169 partly supersedes Convention 107 (for countries that have ratified both) and is one of most far-reaching international instruments addressing indigenous peoples.

Convention 169 explicitly recognizes the right of indigenous peoples to control their own economic development and to participate in the use, management, and conservation of their natural resources. However, very few States have ratified this Convention so that it has little practical effect. In response, the United Nations has been developing a Draft Declaration on the Rights of Indigenous Peoples since 1985, but, if ratified, it is a nonbinding document.

There remains a law within the United States, the federal Alien Tort Claims Act (ATCA) of 1789, 28 U.S.C. §1350, which may yet provide indigenous peoples who engage in traditional agriculture with some measure of legal protection. One case in particular, Beanal v. Freeport McMoRan, Inc., has touched on the human rights ramifications of subordinating indigenous ways of life to corporate claims and objectives by focusing on the devastating effects of the environmental damage that usually ensues on indigenous peoples. The use of the ATCA turns on the fact that genocide is an international tort. Genocide is defined in Article II of the convention on the Prevention and Punishment of the Crime of Genocide, 78 U.N.T.S 277 ("Convention on Genocide") as:

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<sup>42</sup> For example, *G. and E. v. Norway* (DR 35/30)(interference by proposed hydroelectric project was necessary in traditional reindeer grazing areas of Saami peoples); *Powell and Rayner v. United Kingdom*, 12 E.H.R.R. 355, Series A, No. 172 (Feb. 12, 1990)(noise from Heathrow Airport interfered with property but was necessary for the good of the country); *S. v. France* D 13728/88 (May 17, 1990)(changes in microclimate and noise were nuisance but justified).

<sup>43</sup> The primary exception is the case of *Lopez-Ostra v. Spain*, 20 E.H.R.R. 277, Ser. A, No. 303 (Dec. 9, 1994) (emission of toxic fumes violated the human right to the quiet use of property).

Any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such:

- (a) Killing members of the group;
- (b) Causing serious bodily or mental harm to members of the group;
- (c) Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part;
- (d) Imposing measures intended to prevent births within the group;
- (e) Forcibly transferring children of the group to another group.

Both state and non-state actors may be held liable for genocide, "persons committing genocide . . . shall be punished, whether they are constitutionally responsible rulers, public officials, or private individuals." Convention on Genocide, art. IV.

In *Beanal v. Freeport McMoRan Inc.*, 969 F.Supp.362 (1997), the plaintiff, a leader of the Amungme people in Irian Jaya, Indonesia, sued Freeport-McMorRan, Inc. and Freeport-McMoRan Copper & Gold, Inc., both headquartered in New Orleans, for environmental damage and human rights violations arising out of their mining practices in the Irian Jaya region.<sup>44</sup> Among other allegations, Mr. Beanal claimed that the environmental damage committed by the corporation, and supported by the Indonesian government, constituted genocide against his people. Beanal brought his claims under the federal Alien Tort Claims Act (ATCA) of 1789<sup>45</sup> and the Torture Victim Protection Act of 1991.

A Section 1350 claim must be able to satisfy three elements: (1) an alien sues (2) for a tort (3) committed in violation of the laws of nations. In *Beanal*, the court found that the plaintiff had failed to state a claim for either genocide or an environmental tort in violation of the law of nations, largely because the complaint was not sufficiently specific or detailed. The claims alleging official state action were dismissed as being more inferences that had to be made by the reader than definite allegations. An appeal is pending.<sup>46</sup>

Three years prior to the *Beanal* suit, the ATCA and the genocide argument was invoked in a suit charging Texaco with improperly dumping toxic substances in Ecuador among the indigenous tribes in the Oriente region.<sup>47</sup> The district court dismissed the case, holding that the U.S. did not have jurisdiction and that Ecuador should have been joined as a party to the suit. The Second Circuit of the Court of Appeals reversed. On remand to the district court, the parties must argue whether this suit is to be heard in the United States or in Ecuador.<sup>48</sup>

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<sup>44</sup> "Suits Test Environment Jurisdiction: Can U.S. courts treat rain forest damage like genocide?" *National Law Journal*, February 8, 1999.

<sup>45</sup> 28 U.S.C. §1350.

<sup>46</sup> *Suits Test Environment Jurisdiction: Can U.S. courts treat rain forest damage like genocide?* *National Law Journal*, February 8, 1999, B1.

<sup>47</sup> *Aguinda v. Texaco, Inc.*, 93-7527.

<sup>48</sup> *Id* at n.50.

International legal protections for indigenous peoples are therefore still weak or, at the very least, in a state of flux. However, given the *Aguinda* and *Beanal* cases, there have been some interesting recent developments that may serve to move such protections out of their current state of limbo. One can see similar incipient developments in other laws within the U.S. This paper will conclude with a look at the potential legal mechanisms for protecting indigenous farmers in the areas of warranties, antitrust, and public morality.

#### **IV. Warranties, Monopolies, and Public Morality**

##### **A. Warranties**

Two important kinds of warranties -- express and implied -- accompany the sale of personal property. An express warranty is a plain statement about the goods that may be oral or written. In the case of seeds, the warranty may be printed on the seed tags. Oral statements may accompany the actual selling of the seeds. Express and implied warranties apply to the sale of seeds in ways that can be of importance to indigenous farmers within the U.S.

Implied warranties do not require that any kind of statement be made. The obvious purpose of the product, without any statement or action to make the seller believe that the buyer intends to use it for some different purpose, can be sufficient to create an implied warranty. The doctrine of *caveat emptor*, or "let the buyer beware," has long been important in contract law, particularly with respect to warranties, so that a buyer would still be bound to a contract if he buys something and fails to detect a defect that the average buyer would have detected. Nevertheless, old cases reveal that even the doctrine of *caveat emptor* had its limits when the seller makes expressly false statements.<sup>49</sup>

*Caveat emptor* is applied less literally than it was a century ago. Today, the Uniform Commercial Code further clarifies implied warranties in particular. Sections 2-314 and 2-315 cover the implied warranties of merchantability<sup>50</sup> and fitness for a particular purpose.<sup>51</sup> Case law further expands and clarifies these implied warranties with respect to seeds. In the pivotal case of *E.K. Hardison Seed Co. v. Jones*, the Sixth Circuit Court of Appeals held that the burden of knowing what is for sale and telling the truth about it is placed on the distributor under the policy behind the Federal Seed Act<sup>52</sup>, because the seller is presumed to have better facilities for ascertaining the facts.<sup>53</sup>

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<sup>49</sup> *Kenner v. Harding*, 85 Ill. 264 (1977)(warranty of soundness applies where the seller assured buyer mule was sound and buyer examined mule in a dark stall for visible defects); *Dayton v. Kidder*, 105 Ill.App.107 (1902)(auctioneer states cattle were so thin due to short pasture while owner remains silent. Cattle were diseased)

<sup>50</sup> Unless excluded or modified, a warranty that the goods shall be merchantable is implied in a contract for their sale if the seller is a merchant with respect to goods of that kind.

<sup>51</sup> Where the seller at the time of contracting has reason to know any particular purpose for which the goods are required and that the buyer is relying on the seller's skill or judgment to select or furnish suitable goods, there is an implied warranty that the goods shall be fit for such a purpose.

<sup>52</sup> 7 U.S.C.S. §1551 et seq.

<sup>53</sup> *E.K. Hardison Seed Co. v. Jones*, 149 F.2d 252 (1945)(seller violated Federal Seed Act by shipping in interstate commerce bags of seed that: (a) contained a higher rate of occurrence of dodder seed than shown

Subsequent cases have held the seller to be in violation of the implied warranty of fitness for a particular purpose even where the buyer neither informed the seller of any particular purpose in ordering the seed nor informed the seller of an intent to resell the seed. The only limitation is that the surrounding circumstances must be such that the seller has *reason* to realize the purpose for which the seed was intended or that the buyer was actually relying on the seller's superior knowledge.<sup>54</sup> Even a disclaimer of warranty and limitation of liability in a sales contract may be struck down as unconscionable where there is a disparity in the relative strength between a farmer and a national seed producer.<sup>55</sup>

## **B. Monopolies**

The antitrust laws potentially provide some measure of protection to the indigenous farmer as well. Critics of GMOs are increasingly criticizing the agricultural biotech industry as being monopolistic oligarchies. It is worth going behind the rhetoric and actually taking a look at the current status of antitrust law.

The Sherman<sup>56</sup> and Clayton<sup>57</sup> Acts are the main sources of antitrust law in this country. Antitrust laws may be enforced by the Department of Justice, the Federal Trade Commission, and by private parties injured as a result of the antitrust violation. The Department of Justice can go even further and bring a criminal action against violators.

The history of how the courts interpret the antitrust laws has been heavily influenced by socioeconomic trends in this country. The "trust busting" of the 1930s was characterized by an American public that was strongly influenced by the Great Depression with its high unemployment and unused productive capacity. Accompanying the social and economic upheaval was the view that competition had failed and that the future lay with government planning and regulation. The American people themselves clamored for government protection.

Throughout the 1960s, more aggressive enforcement of the antitrust laws was accompanied by several concerns: restraining large businesses, preventing concentration, protecting small businesses, and, least of all, promoting economic efficiency and consumer welfare. There was also an overriding fear of concentration and large size.

As the Great Depression faded in the collective memory of the nation, aggressive enforcement of the antitrust laws took a nosedive with the rise of the "Chicago School,"

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on the labels; (b) had a lower percentage of germination than indicated on the labels; and (c) contained corn cockle seed that was not mentioned on the label.

<sup>54</sup> *Agricultural Services Association, Inc. v. Ferry-Morse Seed Company, Inc.*, 551 F.2d 1057 (6<sup>th</sup> Cir. 1977)(okra seed was mislabeled and an "off brand" that resulted in lower yields than expected). Also see, *Gibson v. Worley Mills, Inc.*, 620 F.2d 567 (5<sup>th</sup> Cir. 1980).

<sup>55</sup> *The Andersons, Inc. v. Horton Farms*, 166 F.3d 308 (6<sup>th</sup> Cir. 1998).

<sup>56</sup> 15 U.S.C. Section 1 (1988).

<sup>57</sup> 15 U.S.C. Section 14

which emphasized the rigorous application of microeconomic theory and empirical testing to problems of competition and monopoly. The Chicago School placed great emphasis on economic efficiency and consumer standards of living more than on concepts of "fairness" or protection of small business. The rise of the Chicago School was also characterized by an American public that was sensitive to institutions that might restrain their standard of living, as well as the following:

- a) Merger policy - horizontal mergers standards precisely articulated, vertical mergers downplayed, and conglomerate mergers not even mentioned.
- b) Law against Predation - should be interpreted to protect competition rather than inefficient producers.
- c) Discouraged aggressive antitrust enforcement.

Throughout the ups and downs of antitrust enforcement, courts have historically interpreted the intellectual property laws upon which the biotech industry depends so heavily as being "natural" monopolies not subject to antitrust regulation. Nevertheless, before the rise of the biotech industry and still during the heyday of more aggressive antitrust enforcement, the Supreme Court struck down a patentholder's requirement that licensees use only the patentholder's salt tablets with their patented machines. The Court reasoned that the requirement was an impermissible "tying" arrangement beyond the scope of the otherwise legal monopoly provided by the patent.<sup>58</sup> The Court had defined tying arrangements in *Northern Pacific Ry v. United States* as, "an agreement by a party to sell one product but only on the condition that the buyer also purchase a different (or tied) product, or at least agrees that he will not purchase that product from any other supplier."<sup>59</sup>

However, by 1980, the influence of the Chicago School over the Supreme Court was palpable when the Court expansively interpreted 35 U.S.C. §271 in its refusal to find patent misuse under the antitrust laws where a patent holder had refused to license others to use a patented process unless they purchased an unpatented product from him that had no substantial use except in the patented process.<sup>60</sup> Today, the antitrust legal environment appears to be shifting yet again. Even prior to the Justice Department's litigation against Microsoft, legal scholars were debating about the demise of the Chicago School in the wake of *Eastman Kodak Co. v. Image Technical Services, Inc.*<sup>61</sup>

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<sup>58</sup> *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488, 62 S.Ct. 402, 86 L.Ed. 363 (1942).

<sup>59</sup> *Northern Pac. Ry. v. United States*, 356 U.S. 1 (1958), quoted in Eastman Kodak Co. v. Image Technical Services, Inc.: The Decline and Fall of the Chicago Empire? 68 Notre Dame L. Rev. 619 (1993).

<sup>60</sup> The four justices who dissented in that case expressly noted that, "The Court's sole justification for this radical departure from our prior construction of the patent laws is its interpretation of 35 U.S.C. §271, a provision that created exceptions to the misuse doctrine and that we have held must be strictly construed 'in light of this nation's historical antipathy to monopoly'" . . .

<sup>61</sup> 112 S. Ct. 2072 (1992).

Prior to the *Kodak* decision, the *Continental T.V., Inc. v. GTE Sylvania, Inc.*<sup>62</sup> case epitomized the Supreme Court's endorsement of the Chicago School. In *Continental*, the Court explicitly overruled its per se prohibition of vertical non-price vertical restraints from ten years prior in the case, *United States v. Arnold, Schwinn & Co.*<sup>63</sup>

The per se Rule is a flat prohibition against tying, as defined in *Northern Pacific*. Since *Northern Pacific*, some antitrust legal scholars, including the preeminent Phillip E. Areeda,<sup>64</sup> had been calling for the elimination of the per se prohibition against tying. One of the main arguments was that in *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, four Justices (Powell, Rehnquist, Burger, and O'Connor) had opined that the tying doctrine should be eliminated because it, ". . . has thus always required an elaborate inquiry into the economic effects of the tying arrangement. As a result, tying doctrine incurs the costs of a rule-of-reason approach without achieving its benefits . . . . The time has therefore come to <sup>65</sup>abandon the per se label and refocus the inquiry on the adverse economic effect, and the potential economic benefits, that the tie may have." *Jefferson Parish* at 34-35 quoted in Festa, 68 Notre Dame L. Rev. 619.

In light of the criticism of the per se rule against tying and the seeming endorsement of the Chicago School<sup>66</sup>, observers of the *Kodak* case thought that the Supreme Court would abolish the rule in that case. However, in *Kodak*, the Court did not abolish the per se rule. Since *Kodak*, commentators have asserted that the case actually signaled the demise of the influence of the Chicago School on the Court. Furthermore, the Court will probably continue to engage in elaborate inquiries into the economic effects of tying arrangements.

Such a development could provide an opening for indigenous farmers to challenge the biotech industry's propensity towards foisting "techno-seeds" on the world before it has had the chance to scrutinize adequately their costs as well as their benefits. The practical realities that led the USDA to brag that farmers would not be able to buy naturally germinating seeds illustrate how consumers, including indigenous farmers, would essentially be forced to purchase seeds that require an additional purchase of patented chemicals to either turn on or off what would normally be the naturally-occurring characteristics of a particular plant. Further, the socioeconomic effects upon which anti-GMO interests are accused of inappropriately concentrating on would be tremendously relevant in a judicial inquiry into the economic effects of Traitor and Terminator technology.

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<sup>62</sup> 537 F.2d 980 (1976)(en banc), *aff'd on other grounds*, 433 U.S. 36 (1977)(geographic restriction imposed on franchised sellers of its televisions upheld and *Schwinn* was explicitly overturned).

<sup>63</sup> 388 U.S. 365 (1967)(illegality of various geographic restrictions on dealers as a per se violation of Section 1 of the Sherman Act).

<sup>64</sup> 9 PHILLIP E. AREEDA, ANTITRUST LAW P1701d, at 28 (1991) cited in Festa,III, Lawrence T., 68 Notre Dame L.Rev. 619, 625, n26.

<sup>65</sup> 466 U.S. 2 (1984).

<sup>66</sup> ". . . Chicago School adherents are overtly hostile to most modern antitrust jurisprudence, especially to the current tying jurisprudence, particularly its manifestation of the per se rule. . . Chicago theorists have argued forcefully that tying arrangements rarely pose a threat to competition" Festa at 669.

### C. Public Morality

Critics of GMOs are currently launching a campaign to persuade governments to take steps to reject and revoke "objectionable" patents as contrary to *ordre public* or public morality. These critics rely on patent laws within and outside the U.S. that typically contain provisions for rejecting patents that are deemed to be contrary to national morality. This right is also included in the GATT TRIPS (Trade-Related Aspects of Intellectual Property) agreement under Article 27(2).

At first glance, such efforts might seem a bit quixotic. However, the debate over agricultural biotechnology has increasingly included concerns over food security, food sovereignty, indigenous rights, famine, and possible irreversible damage to the world's environment as well as human health. The newly established Transatlantic Consumer Dialogue (TACD) recently called on governments to, among other things:

- Require mandatory labeling of all genetically engineered foods and ingredients based on complete traceability of GMOs throughout the entire production, processing and distribution chain.
- Affirm the need for the "precautionary principle" in the development of new technologies and regulatory standards to be enshrined in international trade rules.
- Institute a total ban on nonmedical use (including the use of growth promoters) of antibiotics in animal and food production, including a ban on the prophylactic use of antibiotics.
- Demand changes in the GATT intellectual property rules for pharmaceuticals to improve access of the poor to necessary drugs.

The broad range of concerns and unanswered questions about agricultural biotechnology provide a window of opportunity for indigenous peoples. It is clear that a world economy which does not take into account important social, civil, cultural and economic aspects is not sustainable. In other words, governments and international institution (sic), have to include new components in their policies, e.g., social components in their economic policies. One can observe an increasingly common trend that sees national governments working in the interests of global multinational corporations, against their own people, in particular indigenous peoples. However, globalization of the world economy is a reality which can hardly be reversed towards more closed national economics. Therefore, in my view the future challenge is the conceptualization of ways of organizing and managing the globalized economy and its mechanisms."<sup>67</sup>

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<sup>67</sup> Baer, WIPO/INDIP/RT/98/4A at 2.