The "Circle of Poison" Remains Unbroken: Pesticide Poisoning In Northern Sonora, Mexico, during the Era of Free Trade

by
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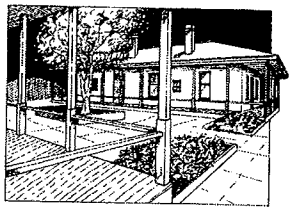

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Introduction

In the wake of recent free trade agreements, migrant fieldworkers in Mexico are bearing a disproportionately large share of the environmental and social costs of production of fruits and vegetables for the export market, including an increased incidence of pesticide poisoning. On the other hand, consumers in the United States and Mexico, wealthy landowners in Mexico, and agribusiness interests on both sides of the border are benefiting from the marketing of cheaper produce available year-round. In addition to earning less than an equitable share of the profits for their labor, the rural poor, particularly migrant fieldworkers, are losing both their traditional agricultural knowledge and their recourse to protest the degrading and dangerous conditions forced upon them.

Due to differences in access to agricultural technology and land tenure laws, agriculture in Mexico is today highly polarized between poor subsistence farmers and wealthy agribusiness interests. Both Wright (1986) and Simonian (1988) addressed the issue of pesticide poisoning in Mexico as being more than a problem from lack of environmental regulations but rather as part of deeper inequalities that have been perpetuated for decades in Mexico and in the global economy. As Wright notes,

> The problem of pesticide hazards clearly arises from a combination of corporate and public policy that has shaped the character of commercial agriculture around the world. My analysis is that the predominant strategy of improving training and regulatory procedures ignores the powerful incentives for pesticide abuse provided by inequalities of power in the countryside, on the one hand, and by the policies of national governments on the other. (Wright 1986: 26)

Ironically, the recent passage of the North American Free Trade Agreement (NAFTA) and the General Agreement on Tariffs and Trade (GATT) with its extensive environmental and labor provisions has proven Wright and Simonian's hypotheses correct. These agreements are targeted at removing protective tariffs and subsidies between nations in order to encourage each nation to increase trade in the commodities and products it can produce most efficiently. Environmental and worker protection standards on the books are essentially the same for Mexico as they are for the United States under NAFTA and GATT. However, differences in monitoring and enforcement of these regulations make pesticide poisoning a much more common experience south of the border (Schrader 1995). Although some of the most hazardous pesticides are now banned in Mexico, residues of banned pesticides remain in the soil and water (Schrader 1995). Free trade agreements implemented in 1994 have not radically altered Mexican commercial agriculture as a whole beyond exacerbating trends set in motion decades earlier towards less self-sufficiency and greater emphasis on export agriculture. However, free trade policies have increased the incentives for pesticide abuse, thereby lessening the effectiveness of labor and environmental provisions meant to protect fieldworkers. These policy changes have precipitated a series of factors that have increased the vulnerability of migrant fieldworkers to a wide range of threats to their health and well-being while at the same time decreasing their access to both legal and informal recourse.

This paper will examine the provisions of GATT and NAFTA that were intended to further safeguard the health and well-being of workers and the environment. The argument will be made that fieldworkers' increased vulnerability is due to more than legal oversights; it is rather an inherent feature of the economic, political, and social relationship between the two countries, which increased trade serves to more deeply entrench. A case study (based on preliminary fieldwork conducted in March 1998) of one particular agribusiness-based town in Sonora, Poblado Miguel Aleman, will be used to explore the ways in which social inequality and poverty expose fieldworkers to greater risks, as well as to illuminate the features of the situation that decrease the efficacy of demands for improved conditions. Within the context of the evolution of agriculture in Mexico, a discussion of changes in export agriculture that increase vulnerability will follow. Options for legal recourse to alleviate these conditions will be reviewed along with

the factors that prevent these legal remedies from being accessible to fieldworkers. The final section of the paper will draw on examples from the environmental justice movement in the United States for guidance in ways in which citizen involvement may be helpful in alleviating pesticide poisoning in Mexico.

Life in Poblado Miguel Aleman

Poblado Miguel Aleman presents a microcosm of the difficulties that migrant fieldworkers encounter almost everywhere, regardless of which side of the U.S.-Mexico border they happen to be on. This dusty town, surrounded by endless green fields, lies scattered along the highway between Guaymas and Bahia Kino, in the state of Sonora, northwestern Mexico. The Costa del Oro, or Gold Coast of Sonora, has experienced rapid agricultural expansion since the 1930s, when new pumping technology made groundwater accessible and agriculture possible (West 1993).

Population estimates for Poblado Miguel Aleman are uncertain and vary according to the particular time in the agricultural cycle. It is estimated that between 10,000 and 30,000 resident fieldworkers have joined the 400 or so of the town's long-term residents within the past 10 to 15 years. In addition, an estimated 60,000 migrants, primarily from poorer southern states such as Oaxaca, Zacatecas, and Guerrero, and also from Guatemala and El Salvador, work periodically in this area each year.

In many ways conditions in Poblado Miguel Aleman mirror the poverty and powerlessness that these migrants were probably seeking to escape, while providing little in the improved quality of life that likely drove them northward. The massive influx of people into Miguel Aleman is similar to the large-scale internal migrations occurring in many locations in the developing world, in that population growth has occurred too rapidly for the government to provide the necessary infrastructure. Poblado Miguel Aleman has a completely inadequate sewage-treatment system, and there is no source of safe drinking water. The town has no sport, civic, or entertainment facilities, and restlessness and boredom contribute to high rates of alcoholism and drug use. Migrants are factionalized according to their place of origin, and conflicts are common between different ethnic groups who may not speak the same language or observe the same customs. To a large extent power in Poblado Miguel Aleman is reportedly held by *caciques*, informal Mafia-like bosses who may be supported by agribusiness establishments or the government.

Several features of this new migrant stream occupying Poblado Miguel Aleman and places like it make its members more vulnerable to pesticide poisoning. For one, many migrants and their children live in open camps adjacent to the fields, where they may be exposed to high levels of pesticides and chemical fertilizers. In addition, for reasons that will be detailed in a later section, an increasing proportion of these migrants are children, who are far more susceptible to the toxic effects of pesticides. Not only do these children live in camps where they are exposed to airborne pesticides and sometimes drink contaminated water, they also very often accompany their parents into the field from a young age in order to supplement the family's income through their labor. The lack of schools and the difficulties of registering indigenous children who often do not have birth certificates add to the problem. Under the Federal Labor Law, the statutory minimum age for employment is 14 years. However, Bacon (1997) reports that increases in agricultural export production have been accompanied by greater numbers of younger children in the fields. Government spending on education and health services has been slashed in recent attempts at economic reform and privatization of these services. Private facilities are often too expensive for migrant fieldworkers to utilize, if they exist at all.

The largest agribusiness establishment in the area of Poblado Miguel Aleman is the Mazon farm, which is owned by three of Sonora's wealthiest families. Approximately 200 fieldworkers live year-round on the Mazon farm, with that number swelling to 2,000 during the harvest season. High barbed-wire fencing surrounds the farm, and an armed guard oversees entry to the property. During an interview, the farm manager indicated that Mazon follows labor laws strictly and stated many of the key provisions required by law. Even so, permanent fieldworkers

live in open metal sheds surrounded by fields, while seasonal workers camp wherever there is room. Neither of these options offers much protection from pesticides drifting over the surrounding fields.

Pesticide Exposure

A criticism of the GATT and other free trade rules is that they only level the playing field for private costs of production while providing little recourse for collecting for environmental and human health costs (externalities) (McCloskey 1993). As will be discussed in this section, additional dangers of pesticide exposure and consumption, and its health consequences, are difficult to prove in that they are often unreported.

The misuse of pesticides causes fieldworkers to be poisoned both directly and indirectly. One of the most common ways in which poisoning occurs is through improper application. When pesticides, legal or not, are applied to crops, there is no effective mechanism to ensure that workers are properly protected from the chemicals. According to several accounts (Wright 1986, Simonian 1988, Schrader 1995, Satchell 1991), pesticides are often applied with backpack sprayers used by barefoot or sandal-clad fieldworkers wearing shorts and short-sleeved shirts despite the warnings that the chemicals can be absorbed through the skin. Even long pants and shirts are ineffective when they are quickly soaked with chemicals as is often the case.

Although no direct evidence of this type of poisoning was observed in Poblado Miguel Aleman, there is little reason to believe that it does not occur. There are general reasons behind improper application, which are clearly applicable to this case study. First, while donning protective clothing may make sense in terms of safety, it certainly does not add to comfort while working in fields in northern Mexico where temperatures often exceed 100° Fahrenheit (Simonian 1988). Fieldworkers may also not be able to read the warning labels on the bottles despite NAFTA rules that dictate that they be printed in both English and Spanish and because many speak indigenous languages and may be illiterate (Schrader 1995). Wright (1986) also points to the social stigma held against the men who apply the pesticides if they appear overly cautious about safety in a culture permeated by machismo.

There are also reports of fieldworkers being harmed by pesticides when the chemicals are sprayed from airplanes. Spraying may take place when workers are actually in the fields (Wright 1986; Schrader 1995). Airborne chemicals may also drift into fieldworker camps, which are often composed of flimsy, open structures and surrounded on all four sides by fields.

Airborne spraying, run-off from fields, and careless disposal of pesticide containers can also contaminate already polluted water supplies (Schrader 1995). Empty pesticide containers were seen scattered between a road and an orange grove on the Mazon farm. Some fieldworkers, especially after they have just arrived in the growing areas and expect to be there for only a short time, camp on roads and easements alongside the fields. They often have little choice but to bathe and wash in these agricultural drainage canals.

Statistics on the extent of pesticide poisonings are purposefully nonexistent in much of the developing world, and Mexico is no exception. The World Health Organization estimates that agricultural workers in developing countries suffer 3 million cases of acute pesticide poisoning annually, with an estimated 20,000 deaths per year (Satchell 1991). Hill (1988) puts the number at 500,000 poisonings per year, with 10,000 deaths annually for developed and developing countries combined. Nonlethal symptoms of poisoning include difficult breathing, convulsions, neurological damage, blindness, and sterility. Anecdotal accounts of effects include increased incidence of serious birth defects, childhood leukemia, cancer, and liver disease (Wright 1988).

Regarding northwestern Mexico in particular, Wright (1986) believes that poisoning is seriously underdiagnosed, since its symptoms are similar to those of common ailments such as respiratory diseases, intestinal infections, and influenza, which are insidious in fieldworker camps. There are several reasons for this. Hill (1988) reports that infirmaries and clinics may purposefully underestimate the numbers of poisonings and discourage workers from reporting them.

Although he was referring to this phenomenon on large cotton plantations, it may well be true in fruit and vegetable production as well. Wright (1986) reports that pesticide poisoning is not among the categories of illness or accidents reported on government reporting forms.

Fear of reprisals and job loss may also be major reasons for the underreporting of pesticide-related illness. Out of 25 people that Wright interviewed, two "expressed the belief that if one complained of pesticide illness after treatment, there was a significant danger of being shot or otherwise killed by men hired by the owners." Language may also present difficulties: Many fieldworkers are illiterate and use Spanish only as a second language, which makes reporting illness less likely (Wright 1986). Without reliable statistics, it becomes much more difficult to provide legally-acceptable scientific proof that a problem exists. Without scientific risk assessment methods, free trade advocates can easily label bans on imports based on pesticide abuses as protectionist (Bhala 1996).

The Development of Disparity in Agriculture

In addition to these documented aspects of the pesticide poisoning problem, new dangers to fieldworkers have appeared with the increase in free trade while some old problems have only become worse. However, blaming the current situation solely on free trade initiatives ignores a host of long-standing inequalities that should be explored before the discussion of GATT and NAFTA continues. In order to understand how these disparities were created and continue, it is necessary to briefly examine the history of Mexican agriculture in general.

It is nearly impossible to isolate the effects of any one policy change from other concurrent and ongoing changes in the Mexican food-production system. Infrastructural and technological development, land reform, credit availability, and subsidies as well as climatic factors have contributed significantly to changes in Mexican agriculture in the 20th century (Appendini and Liverman 1994). In order to more fully understand the economic and political conditions behind increased use of illegal and dangerous pesticides on Mexican produce, it is necessary to understand both how agricultural change has occurred, and the inequitable manner in which these changes have favored wealthy over poor farmers in Mexico as a whole and in Sonora in particular.

The Mexican Revolution and the Rise of the Ejido

Agriculture is the backbone of the Mexican economy and has been throughout the country's history. Prior to the Mexican Revolution, throughout the country the vast majority of land tended to be concentrated in the hands of a small number of wealthy landowners. These *latifundistas* owned much of the most fertile and best-watered land in this predominantly arid country. Peasants, composed primarily of the wide variety of indigenous groups throughout the country, were forced to either farm the small amount of marginal land available or to work for them.

One key factor in inciting the Mexican Revolution was the desire of poor rural people to have enough land to grow food. Thus one of the most significant changes the Revolution brought about was redistribution of land tenure through collectivization. During the mid-1930s, some land-holdings were redistributed to peasants to be farmed collectively in the form of *ejidos* or to indigenous groups in the form of *communidades*. Under Article 27 of the Mexican Constitution, this land could not be sold or rented (Appendini and Liverman, 1994).

In northern Mexico, the lack of a substantial sedentary Indian population made it easier to claim large chunks of agricultural land after the Yaqui were enslaved as laborers (Simonian 1988), and the Opata and Eudeve essentially accepted Spanish rule (Sheridan 1988). However, Sheridan (1988) notes that the development of large estates in Sonora was at hampered by repeated attacks from the Seri and Apaches until the 19th century. Once the Indians had for the most part been subjugated, improved irrigation and cheap land drew settlers toward the end of the *Porfiriato,* around 1910 (West 1993). Construction of the railroad linked Sonoran agriculture to markets in the American Southwest early on; indeed, commercial agriculture was firmly

established in Sonora by the time of the Mexican revolution. Although there was some redistribution of land in the north to peasants, much of the land eventually went to businessmen and bureaucrats while some of the former big landowners regained their land (Simonian 1988).

In many cases, the ejidos set up through land redistribution after the Revolution have not allowed small farmers to profitably participate in the global marketplace; in many cases, even self-sufficiency has proved difficult to achieve. Ejidos have generally proven to be less efficient and productive than private holdings (Dovring 1979; Nguyen 1979). Indeed, as Appendini and Liverman (1994: 154) note, from 1972 onward, the price supports given by the government to maize producers were not enough to cover production costs on rain-fed land. Those "traditional" farmers who continued to grow and sell maize did so for an income below even the minimum salary level.

The Green Revolution Increases Economic Inequalities

The Green Revolution of the 1970s did bring about dramatic increases in productivity per hectare for some crops, particularly in hybrid varieties of corn and wheat grown on irrigated land. Modern crop varieties were developed and distributed to some agricultural producers during the Green Revolution along with the chemical pesticides and fertilizers necessary to make them grow. In many ways, the Green Revolution has allowed Mexico to come much closer to meeting the food needs of its growing population.

The Green Revolution also had the effect of increasing the disparity between wealthy and poor farmers. The enormous amount of federal resources invested in large-scale production has tended to undercut investment in small farms (Wright 1986). The Green Revolution is both a chemical and biological revolution based on new technology and a commercial revolution in that this new technology was used to further commercial agriculture, often at the expense of traditional agriculture (Simonian 1988). The technology developed during the Green Revolution was targeted towards large-scale irrigated agriculture, which happens to be primarily in the hands of private landowners in Mexico. Also, research was targeted at export crops such as wheat and cotton rather than at basic consumption crops such as corn and beans that are traditionally grown on rain-fed ejido lands. In addition, differences in the availability of credit have had profound effects on preventing poorer *ejiditarios* from making the investment in irrigation and more competitive crops (Janvary et al 1997). Thus the Green Revolution was most advantageous to those farmers who were already wealthy and significantly widened the gap between "modern" agriculture and "peasant" agriculture (Hewitt 1976).

Nowhere are these disparities more evident than in northern Mexico, where large estates specializing in commercial fruit and vegetable production are concentrated. As Simonian notes, "The use of pesticides in northern Mexico has resulted in greater agricultural production but in less equity" (1988: 83). Initially, the government had to heavily subsidize the use of pesticides, fertilizers, and plant hybrids in the North because land was plentiful and farmers were initially less interested in intensifying agriculture than in expanding their acreage.

Pesticide poisoning of fieldworkers in underdeveloped countries is thus not a new problem. Reports of this darker side of the Green Revolution began to surface soon after this movement towards greater use of technology, chemicals, and hybrid-seed varieties spread across the globe in the 1970s, and made the use of chemical pesticides much more common. Pesticide use in less developed countries increased from $641 million to almost $1 billion from 1974 to 1978 (Hill 1988) as Extension workers funded through development agencies such as USAID and the World Bank taught farmers the benefits of "modern" agriculture.

Many authors argue that the Green Revolution has made it possible for developing countries such as Mexico to support their rapidly expanding populations. It also appears that free trade has benefited consumers in both developed and developing countries by increasing the year-round availability of a wide variety of produce at lower prices. However, these increases in food production and availability have come at great cost, particularly to those involved in agriculture in developing nations. A flurry of articles during the 1980s (Wright 1980, 1986; Simonian 1988; Hill 1988) increased awareness of some of the environmental and social costs

that accompanied increased productivity. As Hill (1988) writes, "LDCs (less developed countries) have paid a disproportionately high price in human suffering and death in exchange for the promise of more food and freedom of disease." With regard to pesticide poisoning in particular, Hill (1988) further reports that although LDCs use only 15% of the total pesticides manufactured, over half of the 500,000 cases of pesticide poisonings and two-thirds of the 10,000 deaths occur in LDCs.

Land Reform and Lack of Credit Open the Door to Joint Venture Agreements

Beyond the technological and commercial changes brought about by the Green Revolution, several other factors have caused chemical use to become more firmly entrenched in the export agriculture sector in northern Mexico in recent years. For one thing, liberalization of Mexico's land-use and foreign investment laws have facilitated growth in the export economy (Spencer and Rivadeneyra 1998). From 1915 through 1992, ejidos were not allowed to develop their lands or crop production through investment relationships with private sector parties, and could not use their land as collateral to obtain bank or invest financing. However, amendments in 1992 to Article 27 of the Mexican constitution radically changed the way ejidos could do business. Ejiditarios can now have title to individual parcels of land and enter into any type of contract or partnership, Mexican or foreign, regarding the use of their land. They may use the land itself or its future products as collateral for loans.

Under this new regime, foreigners may own up to a 49 percent share in corporations holding agricultural, ranching, or forest lands (Spencer and Rivadeneyra 1998). This allows foreign interests access to cheap resources and labor, and ejiditarios gain the investment capital required to enter the world market. This has resulted in a rapid increase in the number of joint venture arrangements between former ejiditarios and foreign interests. Since Mexico's current financial system is almost entirely unwilling or unable to provide loans to anyone but the largest companies, rather than to ejiditarios, joint ventures are one of the few ways they can gaining access to the capital they need to convert from corn, wheat, and other subsistence crops to more lucrative horticultural products, such as vegetables, fruits, and nuts. Ejiditarios involved in joint ventures also gain access to international markets and the higher prices their products command.

In Sonora, the agricultural sector has been metamorphosed through shifts in land tenure, production techniques, and crop mix. To a greater extent in this state than in many others, the ejido system is being replaced by private ownership of land and leasing options. Many ejiditarios traditionally grew a diverse mix of market crops, subsistence crops, and livestock for home and market consumption. They are now focusing on producing feeder cattle and the forage crops to support them for export to the United States. Overgrazing and environmental degradation, including the large-scale replacement of local grasses with fast-growing, insidious buffle grass, are a frequent result (Yetman 1992).

Preliminary interviews in Sonora during March 1998 indicate that ejiditarios are eager to convert from their staple crops of wheat and corn to horticultural crops, including fruits, vegetables, and nuts, which will bring in more cash that can then be spent on consumer goods. (The expansion of American merchandisers such as Wal-Mart and The Price Club to the state capital of Hermosillo and the accompanying flood of advertising are probably fueling this desire.) However, ejiditarios are still stymied by the lack of access to the credit that would enable them to make these conversions. BANRURAL, the primary state lending agency, considers ejiditarios and small private landowners to be poor credit risks. BANRURAL generally refuses to loan money to small ejidos or private owners unless they are members of a credit union; entry into such a union is a difficult and unpredictable process. Thus ejidos have the choice of either being squeezed out of the changing economy by not modernizing, being bought out by large agribusiness owners, or working out joint venture agreements with foreign firms.

These changes in agrarian law and foreign investment rules have impacted not only ejiditarios but also private landowners—especially large landowners. Profitable, large-scale Mexican agribusinesses are able to expand their operations and further modernize their

operations through joint venture agreements with foreign investors. Foreign agribusiness firms invest in and expand their operations into Mexico to take advantage of lower production costs. Production costs are lower due to more lax environmental regulations and cheaper labor. Although environmental and labor regulations read the same on both sides of the border, levels of enforcement differ greatly. Lower labor costs are especially important in high-labor crops such as fruits and vegetables. In order to maintain their investors' interests, these comparative advantages must be maintained.

Agribusiness vs. Traditional Agriculture: A Comparison

Across Mexico, the goal of self-sufficiency on agricultural ejidos is giving way to modern agribusiness joint ventures funded with foreign capital. The type of agribusiness gaining prominence may be described as an "industrially organized farm, that (is) financed for growth, large scale, concentrated, specialized, management centered, capital-intensive, at an advantage in controlled markets, standardized in production processes, resource consumptive, and farmed as a business" (Strange 1988).

This is clearly a radical departure form the small-scale, subsistence-oriented, traditional small farm of Mexico. An important aspect of Mexican agricultural policy that the Green Revolution epitomizes is the "simultaneous exploitation and eradication" of traditional agricultural knowledge developed by Mexican farmers over thousands of years (Wright 1986). Traditional farming in Mexico tended to be household- or communally managed. Traditional agriculture is generally small-scale, diverse, labor-intensive, subsistence-based, self-sufficient, less subject to market fluctuations, and adapted to particular ecological and household conditions. In traditional agricultural systems, farmers rely upon their extensive knowledge of their land and local conditions to determine cropping strategies, and tailor production to meet household and local demands (Cleveland and Murray 1997).

Agribusiness establishments, on the other hand, are determined by national or global market demand. They are sited not according to traditional tenure arrangements but instead based on the availability of inexpensive labor and low environmental protection costs. Traditional farmers utilize techniques such as crop rotation, intercropping, and reliance on natural predators to control pests. Agribusiness, on the other hand, generally involves monocropping, which is particularly vulnerable to pests. Agribusiness's goal of maximizing returns on the land often precludes extensive fallow periods or crop rotation. These techniques enable traditional farmers to control pests and weeds without artificial inputs. Agribusinesses must rely on chemical pesticides and herbicides. While some traditional farmers may supplement these techniques with chemical inputs, many subsistence farmers are unable to afford them.

Early Efforts to Break the "Circle of Poison"

Even before GATT was strengthened in 1994 and NAFTA was implemented (also in 1994) attempts were being made to rectify some of the inequalities associated with pesticide poisoning. One aspect of this problem that received much media attention in the 1980s was that literally tons of pesticides that had been banned in the United States were still being shipped to foreign countries, only to be imported back into the United States on produce that was then consumed by the very Americans who were supposed to be protected by the domestic pesticide bans in the first place—hence the term "circle of poison." A great deal of concern was generated regarding the possibly carcinogenic residues of both legal and illegal pesticides found in produce imported into the United States from developing countries. Recommendations for resolving this problem included increased labeling requirements, and amendment of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) to include a prior consent notification system. Increased labeling in both Spanish and English, was also recommended as was the production of an annual summary of regulatory actions for use by developing countries and attempts to get

developing countries to enact their own restrictions on the importation of chemicals banned in the U.S. (Hill 1988).

With regard to this issue, GATT makes reference to "considering" banning the export of pesticides or toxic substances to other countries when the substance is banned in one's own territory (Bhala 1996: 1266). Although some pesticides, such as DDT, have been banned, importation of others that are illegal in the U.S. continues. However, while it is still possible for the U.S. to export pesticides that are illegal within its own boundaries to developing nations, the pesticide problems that remain are largely due to improper use of legal pesticides despite the NAAEC and Labor Side Agreement regulations.

Free Trade Agreements Enter the Fray

Concurrent with these changes in agriculture, free trade agreements have also played a role in contributing to the pesticide hazards experienced by fieldworkers. Unlike the aforementioned changes in agriculture, both GATT and NAFTA contain provisions meant to regulate several aspects of problems such as pesticide exposure through more enlightened environmental and labor laws. In the debates regarding the passage of NAFTA, opponents of the agreement argued that increased trade could exact a heavy environmental and social toll while proponents put forth a platform suggesting that the environment would actually benefit. The following quotation summarizes this stance:

> . . . Furthermore, trade liberalization, whether on a global or regional basis, will actually help the environmentalists' cause by 1) fostering common standards for environmental protection that must be observed even by certain developing countries that currently ignore environmental concerns; 2) terminating subsidies, particularly in agriculture, that are environmentally destructive as well as inefficient; and 3) ensuring economic growth, which will create the financial means, particularly for developing countries, to control pollution and protect the environment (Schoenbaum, in Bhala 1996: 1187).

The following sections will detail precisely how these improvements to the environment were to be made as well as reveal reasons that they have fallen short of these goals.

General Agreement on Tariffs and Trade Provisions

Under the 1994 Uruguay Round of GATT, Article XX and the Agreement on Technical Barriers to Trade were intended to regulate the environmental impacts of increased free trade. Article XX provides exceptions to the GATT rules that allow nations to decide for themselves on standards to protect the health and safety of their people, or to conserve their natural resources. In the United States, for example, pesticide residues are regulated by the Food and Drug Administration, which sets acceptable levels for pesticide residues based largely on the level of toxicity and increase in cancer cases that exposure to a particular chemical can be expected to cause (Conklin and Thor 1995).

Article 2.1 of GATT recognizes the right of governments to take measures necessary for the protection of human, animal, or plant life, or health. These sanitary and phystosanitary measures do not establish or deal with any particular measures; instead the determination of fairness relies on whether measures taken for the protection of life or health has a basis in science and is based on a risk assessment. Countries are allowed to impose import standards higher than those of the United Nations' Codex Alimentarius only if there is "scientific justification" for doing so. "Scientific justification" includes end product criteria; processes and production methods; a testing, inspection, certification or approval measure; a relevant statistical method; a sampling procedure; a method of risk assessment; a packaging and labeling requirement directly related to food safety; and a quarantine treatment (Bhala 1996: 1235). However, applying these rigorous steps to each product imported could be prohibitively expensive to developing

countries, making the "scientific justification" necessary to prohibit the importation of possibly dangerous chemicals economically and technologically unfeasible. This mechanism for achieving "scientific justification" contains no avenue for input for the complaints those such as fieldworkers in developing countries, who may be experiencing firsthand the effects of poisoning by toxic chemicals.

The GATT measures do allow countries to use trade sanctions to meet their environmental goals, long as the same standards are applied to both domestic and foreign products. Discrimination against the produce of another country is allowed as long as it is not arbitrary or unjustifiable. The standards included in the code are based on the United Nations' Codex Alimentarius Commission. Through these provisions GATT intends to protect its member states from the unilateral imposition of domestic standards by importing countries. The Standards Code of the Agreement on Technical Barriers to Trade created procedures for dispute settlement. However, U.S. environmental groups would have a difficult time bringing a case against Mexico for excessive pesticide use on these grounds. According to some studies (Conklin and Thor 1995), it appears that produce imported from Mexico is actually "cleaner" (less likely to be contaminated with illegal levels of pesticide residues) than U.S. produce. For example, in 1992, FDA tests for pesticide residues showed that 19 percent of the total domestic produce tested was in violation of the standards while only 14 percent of the residue tests on foreign produce showed noncompliance with FDA standards (Conklin and Thor 1995). There is, however, criticism of the leniency of the FDA standards in that they require that only five percent of produce shipments to the United States be checked for pesticide residue.

Mexico could, of course, set and enforce its own tougher health standards under Article XX(b) of GATT. However, a great many factors work against the possibility of this ever happening. Even if Mexico wished to do so (which would very likely go against the wishes of those foreign interests supply desperately needed investment funds), Article XX(b) states that these measures must be "necessary," and not "constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade." Without scientific proof that the problem exists, this would be very difficult indeed.

The North American Agreement on Environmental Cooperation

During the debates that preceded the passage of NAFTA in 1994, several environmental issues were debated. Discussions included whether increased trade would further strain Mexico's already weak environmental infrastructure. The possibility of "environmental dumping" in which Mexican plants that could more cheaply produce goods by not worrying about environmental damage would undercut U.S. plants that were held to higher environmental standards was also debated. Another hot topic was the fear that NAFTA would undercut U.S. pollution standards with increased cross-border pollution and more imports of pesticide-laden produce (Bhala 1996: 1244). Therefore, in preparing the regulations eventually promulgated first under NAFTA, pesticide use was to be regulated under both the environmental side agreement, known as the North American Agreement on Environmental Cooperation (NAAEC), and under the NAFTA Labor Side Agreement.

It is interesting to note that rather than the Environmental Impact Statement (EIS), which a governmental action such as NAFTA should have required, the United States did a limited "environmental review" of NAFTA impacts. When this environmental review found significant problems likely to be encountered if NAFTA became law, a more detailed "Report on Environmental Issues" was done later in the process. Mexico also prepared its own environmental studies for NAFTA, but the Mexican government never released a public environmental review. Mexican environmental groups attempted to force the government to prepare an environmental statement on NAFTA, but since Mexican citizens have rather limited access to the courts, they were unsuccessful. Much of the environmental information pertaining to Mexico that was available was thus "imported" from the United States and Canada. Limited access to this information clearly hindered the effective participation of Mexican citizens (see Bhala 1244 for cite).

Regardless of these issues, food-safety problems are externalities related to the consumption of produce. The likelihood that these problems are effectively taken care of regardless of loopholes in regulations is high since potential transporters, marketers, or purchasers are hesitant to conduct business with producers who have had problems in the past (Hill 1988). However, externalities related to production or the hidden and unaccounted for costs that fieldworkers and the environment are forced to pay as part of the production process have proven more difficult to resolve despite regulations attempting to do so. Production externalities are more deeply imbedded in the structure of Mexican agriculture and the way it changes in the world economy. A further look at the goals of the NAAEC and the reasons it has not resolved the dilemma of pesticide poisoning of Mexican fieldworkers may illuminate the reasons for this.

One stated goal of the NAAEC was the "enhancement of product standards and enforcement activities" in all three countries. The agreement further noted that "NAFTA also provides strong incentives and an excellent opportunity to share expertise and experience to secure real public health and environmental gains" (Bhala 1996: 1252). The assumption underlying this statement was that increased economic development in Mexico would lead to increased governmental support of community and health infrastructure and thus would generally improve the health of its population. However, as was evident in Poblado Miguel Aleman, the opposite has happened: In an effort to privatize government-run social services, government spending on health and social services has plummeted, particularly after the peso crisis of 1996-97.

There is ample evidence that the lofty goals of the NAAEC have not been achieved, at least not yet. As Charnovitz (1994) notes, the problem appears to be that the NAAEC is vaguely worded and difficult to enforce. The agreement monitoring commissions with little or no power of enforcement and is therefore basically meaningless. (Bhala 1996). Basically, under NAFTA and the NAAEC, the United States, Mexico, and Canada could continue to establish and enforce (or fail to enforce) their own food safety and pesticide standards as they saw fit (Bhala 1996: 1266).

The Labor Side Agreement of NAFTA

Another feature of NAFTA that should have bearing on the conditions fieldworkers labor in are labor laws. The preamble of the Labor Side Agreement states that the NAFTA parties are committed to raising the standard of living for workers and maintaining workplace health and safety standards. It also includes the goal of promoting investment that is consistent with labor laws. The Labor Side Agreement goes on to attempt to harmonize labor laws among the NAFTA parties. As written in law, current labor standards in Mexico are fairly comparable to those in the United States, but actually more comprehensive. As of 1991 Mexico had ratified 72 International Labor Organization conventions dealing with worker health and safety standards while the United States had only ratified 10 (Bhala 1996:1338).

The key statute governing labor is the Federal Labor Law (Ley Federal de Trabajo) of May 1, 1970, and its subsequent amendments. The law regulates labor contracts, minimum wages, hours of work and legal holidays, paid vacations, employment of women and minors, labor unions, collective bargaining, strikes, labor courts, occupational safety, apprenticeship, profit sharing, compensation upon dismissal, and conditions of work in specified fields.

Article 3:1 suggests ways that labor laws might be better enforced, including appointing and training inspectors; requiring record-keeping; monitoring compliance; investigating suspected violations, including on-site inspections; initiating proceedings to seek appropriate sanctions to remedy violations; and giving due consideration to a request for an investigation of an alleged violation made by private parties. Article 4 requires that private parties have "appropriate access to administrative, quasi-judicial, judicial, or labor tribunals for the enforcement" of labor laws. While the provisions of Articles 3-7 do make moves towards procedural harmonization in labor adjudication, there is no supra-national body to regulate labor-law enforcement.

In 1978 the Federal Labor Law of 1970 was revised to deal with occupational safety and health provisions. Revisions stipulate that safety is the direct responsibility of the responsibility of the employer, who is supposed to report accidents, create health and safety committees to review working conditions, and train workers to prevent job-related injuries. Firms employing more than 300 workers are required to set up their own health clinics, at company expense, to supplement the social security health care system (Bhala 1996: 1340).

The Labor Side Agreement can be used when one country feels that another is not enforcing its own labor laws, according to Articles 27-29. Under the Labor Side Agreement, action such as trade sanctions could be brought against a country showing a "persistent pattern of practice" in violating the labor agreement; however, this wouldn't happen with fieldworkers because they probably wouldn't even file the complaints necessary to start an investigation. Also, the dispute process is extremely lengthy; resolving a dispute in this manner could take up to three and one-half years, which makes this process inefficient, expensive and uncertain (Bhala 1996:1359). It also makes these provisions relatively inaccessible for fieldworkers who have very little income and little political organization, and who frequently leave the area at the end of each growing season. The United States could still take unilateral trade sanctions against a country that is violating its workers' rights, under Section 301 of the international trade laws.

Despite efforts to make environmental and labor regulations more equitable between Mexico and the United States, differences in the level of enforcement of these provisions has done little to improve worker safety. For example, although the Labor Side Agreement includes provisions to allow citizen law suits, a myriad of factors prevents this option from being accessible to migrant fieldworkers. These problems have been more thoroughly studied in the *maquiladora* industry. For instance, Wright (1986) found that workers feared job loss and other reprisals if they complained about working conditions. There is further evidence that these same factors would prevent fieldworkers from protesting.

Conklin and Thor (1995) note that environmental and labor issues such as these are difficult issues to resolve through legal channels because:

- they are highly emotional and involve basic differences in the values, beliefs and objectives between different interest groups (farmers, consumers, environmentalists) and different nations;
- we lack the international institutions to reconcile these differences; and
- the technical issues involved in pesticide regulation are extraordinarily complex, and scientific knowledge is often uncertain.

Additional Vulnerabilities Created by NAFTA

It can also be argued that resolving the issue of increased pesticide poisoning through legal channels is impossible because the free trade agreements have changed the context into which they were inserted to the extent that new conditions have been created that are beyond the scope of the problems they were meant to solve. While there may now be regulations in place to regulate pesticide exposure, a host of new vulnerabilities has been created.

Changes in Migration Patterns

One significant change precipitated by free trade is a shift in migration patterns. While the privatization of ejido land, the increased foreign investment, and the move towards production of export crops in northern Mexico may leave former ejiditarios from Sonora with at least some choice of response to the new conditions, the situation appears to be more disruptive and less equitable for the rural poor from other areas of Mexico. Rather than participating in the conversion of their ejido lands from communal to commercial agriculture, the largely indigenous small farmers of the more densely-populated South are more likely to be pushed off their land by economic or political forces and forced to migrate.

Of course, migration is nothing new for the rural poor of Latin America; social scientists such as Massey et al (1987) and others have been documenting migration patterns for decades. Indeed, several authors (Massey et al 1987; Jones 1995) make a compelling case that migration is an appropriate and beneficial adaptation whereby those in areas that are land-scarce but have surplus population enter into a mutually beneficial relationship with those in wealthier areas of Mexico or the United States who need their labor.

However, when migration is undertaken on a permanent basis and often as a last resort for largely indigenous rural people, it is quite a different matter. Although one of the promises NAFTA proponents made was that free trade would reduce the flow of migrants, quite the opposite appears to have occurred. The liberalization in corn prices is expected to result in massive displacement of primarily indigenous small farmers from their land, thus striking a blow against traditional agriculture (Goldsmith 1996). Many once-traditional farmers, particularly those from the poor states of southern Mexico, are left with little choice but to migrate to northern Mexico in search of jobs in the expanding agribusiness sector. Another factor that may add to the push to migrate is pressure from wealthy landowners to gain more acreage, which may be supported by the heavy-handed military presence found in some areas of southern Mexico.

Agricultural reform and the expansion of horticultural exports in conjunction with NAFTA and other governmental action were supposed to absorb the displaced population within Mexico (Zabin, Hughes and Wiley 1995). However, there is evidence that these changes have actually increased illegal immigration to the United States. In addition to an increase in the number of immigrants, the expansion of horticulture in northern Mexico has changed the composition of the migrant population. As Zabin, Hughes, and Wiley (1995) explain, a season or two of work in the fields of Sonora or Baja California provides migrants with a stopover place where they fulfill several crucial tasks that increase their likelihood of successful migration to the United States: They can earn enough money to continue their journey northward, find more secure employment for women and children south of the border while the men undertake the more dangerous (albeit more lucrative) journey north, learn Spanish (many speak only an indigenous language), overcome the culture shock of moving from traditional village life to the modern export economy, and generally become familiar with mechanized agriculture.

The change in the push and pull factors behind the decision to migrate has altered the composition of the migrant population. Most of the population of Miguel Aleman is under 40 years old, and many do not fit the typical migrant fieldworker stereotype. Rather than only the young single males, it is increasingly entire families who are migrating to places like Miguel Aleman. Unlike young male migrants who may go north for a few agricultural seasons with the intention of earning enough money to return to their villages, build homes, and start families, many of those in Miguel Aleman have no intention of ever returning home. This suggests that the situation in their places of origin may have indeed changed so dramatically and permanently as to no longer be livable, perhaps due to some combination of the demographic pressures, agrarian reform, and the structural adjustment policies previously discussed. Another factor that often makes this type of migration permanent, whether that was the intention of the migrants or not, is that financing the journey from southern Mexico, Guatemala, or El Salvador to the North for several family members often requires an entire life savings, leaving no money for a return trip.

This grim reality stands in stark contrast to the glowing vision dictated in the preamble of NAFTA, which states that the parties are resolved to create new employment opportunities and improve working conditions, and also to protect, enhance, and enforce workers' rights. However, the agreement is silent on labor rights issues beyond the Preamble. It contains no mechanisms to implement, monitor, or enforce the goals set forth in the preamble; therefore, labor is included as a side agreement (Bhala 1996).

Changes in Cropping Patterns

There is evidence that greater amounts of chemicals are being sprayed both because the area in pesticide-intensive fruits and vegetables has skyrocketed—in Culiacan Valley of Sinaloa,

the acreage is more than five times what it was 10 years ago—and also because pests are developing resistance to some chemicals (Schrader 1995, Wright 1986). Fruit and vegetable crops grown for export are commonly treated with much higher concentrations of pesticides than staple crops or those grown for home consumption.

The most important crop at the Mazon farm in Poblado Miguel Aleman is grapes, most of which are exported to the United States. Barbed wired fences surround the farm, and entry is through a guarded gate. Totaling 2,800 hectares, Mazon employs thoroughly modern industrial agricultural techniques, such as 600 acres of drip irrigation on the grapes (through which fertilizers may be directly applied) and row upon row of plastic sheeting to speed the production of chilies.

Changes in Chemicals

One danger directly linked to the passage of NAFTA is the increasing use of highly toxic organophospahtes. NAFTA provisions state that pesticide levels cannot be any higher on produce going into the United States than on produce grown within it. In order to achieve this result, many growers have switched to the use of organophosphates. Organophosphate compounds decay quickly so fewer residues are left on vegetables, and entry into the United States is not a problem. However, these pesticides are far more toxic during application and therefore, more dangerous for the fieldworkers, than are other pesticides. Some organophosphate compounds are legal under NAFTA and some are not; however, there is evidence that legality does not reflect reality. Water samples from Culiacan Valley in Sinaloa, another heavily agricultural industrial region, found 10 organophosphate compounds and three organochlorines. Of these 13 compounds, only four are actually permitted for use in Mexico today (Schrader 1995).

Changes in Market Demands

NAFTA has also brought about new pressures that increase agribusiness' dependence on agrochemicals and the probability of pesticide poisoning. By opening agribusiness to greater foreign investment, NAFTA has allowed U.S. agribusinesses to provide money for more chemicals than would likely be used otherwise, as had already happened in other less-developed countries (Hill 1988). As with other issues in Mexican agriculture, reality may not match the stipulations on paper, as Schrader (1995) reports. Although joint venture agreements with U.S. firms often stipulate which pesticides will be used and specify the safety measures necessary to apply them, in practice the choice is often left to the Mexican partner. The Mexican growers are operating under tremendous pressure to fulfill their half of the agreement by producing fruits and vegetables of "U.S. quality," which means produce of uniform size, color, and shape at the lowest price possible (Spencer and Rivadeneyra 1998). These qualities are believed to be more important to U.S. consumers than safety, either in terms of residues left on the produce or for the fieldworkers who ensure that the produce reaches the market. Mexican growers also are compelled by U.S. agribusinesses with operations in states such as California, Texas, Florida, and Arizona to use chemicals to help regulate the timing of harvests by controlling the growth cycles of their crops. This allows the agribusiness to fill exactly the time period when U.S. production is out of season.

Winners and Losers

As with all policy decisions, the implementation of GATT and NAFTA has left both "winners" and "losers" in its wake. On the Mexican side of the border, consumers are winners, especially those in urban areas, who benefit from cheaper prices on staples such as tortillas. Also to be counted among the winners are wealthier private landowners, some of whom have realized major profits from expanded free trade. Some poorer ejiditarios can also be counted among the

winners, since they may prosper under new joint venture agreements (albeit with some loss of self-determination).

While NAFTA has thus created some winners in Mexico, it seems as though the benefits have been even greater in the United States. American consumers win by having a steady supply of winter produce at low prices. U.S. chemical and equipment producing firms benefit from having a larger market for American agricultural technology. U.S. agribusinesses win through making the law of comparative advantage work for them: The cheaper wages that they must pay Mexican laborers for labor-intensive fieldwork increase their profit margin. U.S. agribusiness interests and wealthy Mexican landowners gain additional benefits from locating production south of the border. NAFTA benefits the agricultural sector directly through offsets from income-tax obligations, extensive subsidies, and exemptions from labor an immigration laws (Luna 1994). Despite rhetoric and legal provisions to the contrary, monitoring and enforcement of laws designed to protect human and ecosystem health are not enforced with the same tenacity as those in the United States. Then, too, certain provisions of the relevant trade laws allow growers to find loopholes that actually have more deleterious impacts on fieldworkers.

While increased free trade benefits U.S. consumers and Mexican producers, the agreement largely ignores the role of rural workers and its impacts upon them. The losers in this policy change have clearly been the rural poor, including traditional small-holding farmers who are unable to compete with modern methods and economies of scale. They have thus been forced off their land to either migrate to Mexico's burgeoning cities, or, in many cases, become migrant fieldworkers. They are rarely in a position to demand better conditions, and the international agribusiness conglomerates responsible for these conditions easily ignore their plight.

The situation also looks bleak for small- and medium-sized farm operations on both sides of the border. They will face increased competition from larger agricultural holdings as these foreign-funded operations pursue economies of scale. Entry into the farming sector for small and medium-sized operations is likely to become as difficult in Mexico as it is in the United States (Luna 1994).

Lessons from the U.S.Environmental Justice Movement

A series of parallels may be drawn between this situation and the conditions that precipitated the environmental justice movement in the United States. Several notable legal cases brought in the United States, such as those regarding the siting of hazardous waste disposal facilities in Chester County, Pennsylvania, or the East Los Angeles incinerator case share key elements involving the displacement of environmental externalities to those marginal groups least able to protest them. In each case, the people who must cope with the health effects and discomfort caused by the industry in question are not those who are reaping most of the economic benefits. In the U.S. environmental justice cases, the disposal of hazardous waste clearly benefits all citizens, and particularly those who generate waste and pay no environmental costs for its disposal. In the Sonoran export agribusiness situation, several groups benefits from the production of cheap produce grown with the unsafe use of pesticides without being forced to contend with the environmental degradation this activity entails. The growth of export agriculture in northern Sonora does provide much-needed jobs to those displaced by changes in the economy; however, as the Poblado Miguel Aleman example illustrates, these jobs do not bring about healthy communities or a higher quality of life for these workers.

Although NAFTA does allow for citizen suits to be brought against polluters on either side of the border, it is quite unlikely that migrant fieldworkers such as those in Poblado Miguel Aleman would have the resources to do so. A substantial amount of literature (Guana 1998; Fisher 1995; Mohai and Bryant 1991; Foster 1998 etc.) regarding the environmental justice movement in the United States reveals the difficulties that minority groups often encounter when attempting to file claims against bearing disproportionate burdens of pollution in their neighborhoods. Mexican fieldworkers share several of these constraints. For one, they may not speak the majority language, and they may be told that they do not have the education to

understand the issues they are trying to confront. It is also difficult for community groups to gather the type of scientific evidence and conduct studies to prove that harm is being done. Organizing and participating in community protests is time-consuming, and it is difficult for working people to find the time and energy to see a case through to its resolution.

There are also several additional factors working against Mexican fieldworkers. Successful cases of citizen suits based on environmental justice claims in the United States seem to have one major factor working in their favor: The ordinary citizens who become activists in environmental justice cases are often long-time members of the affected community. Thus they have a major and lasting stake in the outcome of the case. In contrast, as Zabin, Hughes, and Wiley's research (1994) indicates, most migrant fieldworkers use places like Pobaldo Miguel Aleman as stopover locations en route to higher paying jobs in the United States. This would clearly reduce their commitment to fighting for long-term improvements. In addition, Poblado Miguel Aleman is factionalized into distinct indigenous groups that speak different languages and often have potentially violent confrontations. The influence of caciques in the daily life of the migrants here has already been mentioned; maintaining social control through whatever means necessary is the sort of action that the Mexican government has been known to support via caciques and government officials (Vargas 1994). Another factor that makes it more difficult for fieldworkers to gain support in their protest of unsafe working and living conditions is that unlike visible environmental catastrophes that have caused public outrage and led to changes in legislation, the problem of pesticide abuse is insidious and long-standing.

Conclusion

The preceding discussion illustrates a case in which disenfranchised and politically less-powerful people are negatively affected by the actions of corporate interests. Wright (1986) is correct in his analysis that pesticide abuse is largely a result of the unequal distribution of power and resources, despite legal provisions intended to prevent this problem. Workers who are denied access to land, credit, market control, and information, and who are politically disorganized are left without the tools they need to analyze and denounce these unsafe practices. The fieldworkers discussed are also prevented from contracting with outsiders for the type of scientific studies necessary for legal action due to threats of reprisals and lack of income (Wright 1986). Under current conditions, it is likely that these same problems will persist and intensify as the economic incentives for pesticide abuse grow along with the volume of trade.

The structural inequality that allows pesticide poisoning to continue is perpetuated by those who benefit from this situation and is only the current manifestation of long-standing inequities that were formalized with the creation of the ejido system. As Janvary et al (1997) note, "The Mexican ejido was conceived as a compromise to serve simultaneously as an instrument of political control, as a means for the organization of production, and as a body of peasant representation." Thus simply increasing production across all agricultural sectors was never really the goal of Mexican agricultural policy, nor was improving the livelihoods of the rural poor. Instead, the goals seem to have been cheaper food for urban areas and increases in export commodities rather than the elimination of rural poverty (Simonian 1988). There is ample evidence to conclude that the goals of free trade agreements, despite the rhetoric, are similarly targeted towards improving the interests of the wealthy and powerful.

Perhaps the heart of the problem lies in a question posed by Conklin and Thor (1995): Is free trade incompatible with sustainable agriculture? It depends on the definition of sustainable agriculture one accepts. Crosson (1993) argues that:

> . . . the agricultural system for a group of regions (or countries) linked by trade and migration of people may be quite sustainable even though the systems for each separate region (or country), without the linkages, would be unsustainable . . . Thus, the spatial scale appropriate for discussing sustainable agriculture is global.

Clearly, NAFTA and other free trade agreements are based on definitions of sustainability that follow this line of argument. Hopefully, the preceding discussion has identified a particular set of problems with this approach.

On the other hand, Ritchie (1993) argues that sustainable agriculture is largely equivalent to traditional agriculture, in that it:

> . . . calls for farming practices that are less chemical and energy intensive, and marketing practices that place a high priority on reducing the time, distance and resources used to move food between production and consumption. Another goal is to improve freshness and nutritional value by minimizing processing, packaging, transportation and preservatives.

While Crosson's definition of sustainable agriculture may be the one the world economy is based upon, there is evidence of growing support for perspectives more like that of Ritchie. U.S. consumers are demanding organic produce in greater numbers than ever before. They are willing to accept higher prices and less variety in exchange for lessened risk to both their own individual health and to their environment. However, most consumers have not yet made the connection between chemically-grown produce and the human costs of this type of production. Greater awareness that casts pesticide poisoning as a human rights and environmental justice issue would add greater impetus to an already growing sentiment. It is conceivable that increasing demand for organic produce could make chemically-grown produce unprofitable. Such public information should be based on sound ethnographic and empirical research. Environmental and labor organizations already dealing with this issue in Mexico and elsewhere, such as the Pesticide Action Network, should receive support from U.S. non-governmental organizations to expand their efforts.

Free trade agreements and other changes in the Mexican economy have worked in concert to increase the vulnerability of fieldworkers to pesticide poisoning and other health and safety issues. Resolving an issue so deeply ingrained in the hegemonic structure of U.S.-Mexico relations is a daunting task. Additional legal provisions or greater sanctions are unlikely to help since the ones already in place are not being enforced or made accessible to those they were supposed to protect. It seems inconsistent that while NAFTA and GATT called for harmonization of environmental and labor laws, other legal mechanisms remain unequal. Many U.S. environmental justice claims are brought under Title VI of the Civil Rights Act, which provides for nondiscrimination against minorities in receiving assistance from federal agencies such as the Environmental Protection Agency. While this may keep minority communities in the United States from bearing more than their share of the environmental damage caused by polluting land uses, it in no way prohibits the displacement of such industries across the border. Although there are clearly national sovereignty issues at stake, it is shortsighted and unjust to prevent the disproportionate suffering of minorities in the United States while increasing this suffering in Mexico. The issue goes far beyond the realm of legality and into the domain of morality, therefore appealing to the consciences of individual consumers, who ultimately control what is marketed and what is not profitable, offers the best hope in alleviating this inequality.

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