

# The Environmental and Social Injustice of Farmworker Pesticide Exposure

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## INTRODUCTION

Farmworkers in the United States are recognized as an environmental justice community.<sup>1</sup> The farmworker population is low-income and primarily Hispanic, and is at a disproportionate risk from exposure to an environmental contaminant—pesticides.<sup>2</sup> Farmworkers face distributional, procedural, corrective, and social challenges with this exposure, as is common with other environmental justice communities.<sup>3</sup> Social challenges include socioeconomic and political inequities that are grounded in the historical domination of the agricultural industry over its labor force.<sup>4</sup> The production and use of pesticides is a function of the economic priorities of industry. Employers profit from pesticide use and are able to

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1. See Thomas A. Arcury & Sara A. Quandt, *Pesticide Exposure among Farmworkers and Their Families in the Eastern United States: Matters of Social and Environmental Justice*, in *LATINO FARMWORKERS IN THE EASTERN UNITED STATES: HEALTH, SAFETY AND JUSTICE* 106-07 (Thomas A. Arcury & Sara A. Quandt eds., 2009) [hereinafter *LATINO FARMWORKERS*]; John Byrne, Cecilia Martinez & Leigh Glover, *A Brief on Environmental Justice*, in 8 *ENVIRONMENTAL JUSTICE DISCOURSES IN INTERNATIONAL POLITICAL ECONOMY, ENERGY AND ENVIRONMENTAL POLICY* 6 (John Byrd, Leigh Glover & Cecilia Martinez eds., 2002); see also Marion Moses, *Farmworkers and Pesticides*, in *CONFRONTING ENVIRONMENTAL RACISM: VOICES FROM THE GRASSROOTS* (Robert Bullard ed., 1993).

2. See Arcury & Quandt, *supra* note 1, at 107.

3. See Robert R. Kuehn, *A Taxonomy of Environmental Justice*, 30 *ENVTL. L. REP.* 10681 (2000) (characterizing these four components of environmental justice as follows: distributive justice involves the equitable distribution of environmental burdens and benefits and focuses more on outcomes than on process; procedural justice involves fairness in the decision-making process rather than on outcomes; corrective justice focuses on fairness in the way punishments for lawbreaking are assigned and damages inflicted on individuals and communities are addressed and it can include elements of retributive, compensatory, restorative, and commutative justice; and social justice integrates elements of social, racial, and economic equity into environmentalism).

4. See generally Rachel Morello-Frosch, *Discrimination and the Political Economy of Environmental Inequality*, 20 *ENV'T & PLANNING C: GOV'T & POL'Y* 477, 485-86 (2002) (describing how the struggle between capital and labor for control over workplace conditions can lead to inequitable distribution of environmental hazards).

maximize their profits through less regulation.<sup>5</sup> They are able to circumvent dissent about pesticide use by exerting social control over the group that they put at risk—farmworkers.<sup>6</sup>

The premise of this Article is that social, economic, and political factors interact in a way that ensures that farmworkers continue to lack participation in decision-making in pesticide regulation, that disproportionate health impacts are perpetuated, and that changing the status quo is difficult. Farmworkers have had little success in addressing harmful occupational pesticide exposure using methods that some environmental justice communities have employed, i.e., lobbying for effective regulation, engaging in public demonstration, or pursuing traditional litigation.<sup>7</sup> In order to find appropriately tailored remedies for this particular environmental injustice, it is important to recognize that disproportionate pesticide exposure has less to do with a particular framework of regulation and more to do with underlying social and economic forces.<sup>8</sup>

Part I describes the social and occupational health disparities that farmworkers face. Part II discusses current political and economic trends, such as the rise of free trade agreements and national anti-immigrant sentiment, which have increased social and economic pressures on the farmworker population and left them with little power to negotiate workplace conditions. Part III discusses the failure of regulation allegedly enacted to protect farmworkers from occupational hazards such as pesticides. Finally, the consequences of the environmental injustice of farmworker pesticide exposure have dramatic, real-life implications, which are illustrated by several cases of infants born with severe birth defects to farmworker women, described in Part IV. Part V concludes by describing

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5. See Charles Levenstein & John Wooding, *Deconstructing Standards, Reconstructing Worker Health*, in RECLAIMING THE ENVIRONMENTAL DEBATE: THE POLITICS OF HEALTH IN A TOXIC CULTURE 39, 39-41 (Richard Hofrichter ed., 2000) [hereinafter RECLAIMING THE DEBATE].

6. See *id.*

7. But cf. Benjamin Marquez, *Mobilizing for Environmental and Economic Justice: The Mexican-American Environmental Justice Movement*, 9 CAPITALISM, NATURE, SOCIALISM 43, 57-60 (1998) (describing successful campaigns by Mexican-American environmental justice organizations affiliated with the Southwest Network for Environmental and Economic Justice).

8. See Levenstein & Wooding, *supra* note 5, at 40-42; Timothy W. Luke, *Rethinking Technoscience in Risk Society: Toxicity as Textuality*, in RECLAIMING THE DEBATE, *supra* note 5, at 239-41 (discussing how the current approach to controlling workplace hazards like pesticides is through developing and enforcing standards, but that this approach objectifies the toxic chemicals and draws attention away from the fact that their production and use are actually the results of economic and social forces. Creating this “chemical fetishism” benefits the powerful parties in the work relationship and is detrimental to workers who must play along with the idea that regulation will protect them instead of challenging the systemic inequities that allow their health and safety to be compromised in the first place. Luke describes how gauging the toxicity of chemicals, which is necessary before developing regulatory standards, is always bereft of certainty and is, in fact, a textual, rather than technical, process that involves constant interpretations that remain unquestioned. Thus, regarding a pesticide regulation as protective because it is based on total scientific certainty is erroneous, and can be dangerous and unjust to those the regulation is assumed to protect); see also Eric K. Yamamoto & Jen-L.W. Lyman, *Racializing Environmental Justice*, 72 U. COLO. L. REV. 311 (2001) (discussing the importance of contextualizing particular environmental injustices in order to tailor the most culturally appropriate remedies).

alternative means of addressing the environmental injustice of farmworker pesticide exposure when the socioeconomic and political constraints ensure that regulatory and administrative resolutions will fail. Farmworkers and their advocates must take advantage of broader alternative social and legal opportunities to challenge occupational hazards in order to pressure institutions to respond adequately even in the face of growing pressures on the farmworker community to maintain the status quo.

## I. SOCIAL AND HEALTH DISPARITIES OF THE FARMWORKER COMMUNITY

It is difficult to enumerate the farmworker population in the United States because of the fluctuating needs of the agricultural industry and the mobility and legal status of farmworkers, but advocates estimate that every year between three and five million people leave their homes to work with agricultural crops.<sup>9</sup> This population is predominately of Mexican origin; in 2001–2002, 75% were born in Mexico.<sup>10</sup> In general, farmworkers suffer from poor health, including a higher prevalence of diabetes, cardiovascular disease, and asthma.<sup>11</sup> Farmworkers are also susceptible to higher rates of infectious diseases such as tuberculosis, sexually transmitted disease, and human immunodeficiency virus.<sup>12</sup> Many adverse health problems that farmworker families suffer from are linked directly to their socioeconomic status. Poverty forces many farmworkers to live in substandard, unsanitary, and overcrowded housing, which can contribute to a number of health outcomes such as respiratory illnesses, infectious diseases, and injury.<sup>13</sup> Farmworkers do not have access to adequate health care because they lack insurance, time off from work, adequate financial resources, ability to communicate in English, and health care facilities in their rural areas.<sup>14</sup>

In addition to poor general health, farmworkers are employed in one of the most dangerous occupations in the country. In 2006 and 2007, agriculture had among the highest rates of total recordable, nonfatal occupational injuries and

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9. See *About America's Farmworkers*, NAT'L CTR. FOR FARMWORKER HEALTH, <http://www.ncfh.org/?pid=4&page=1> (last visited Jan. 27, 2012).

10. See U.S. DEP'T. OF LABOR, OFFICE OF THE SECRETARY, FINDINGS FROM THE NATIONAL AGRICULTURAL WORKERS SURVEY (NAWS) 2001–2002: A DEMOGRAPHIC AND EMPLOYMENT PROFILE OF UNITED STATES FARM WORKERS 3 (2005), available at [http://www.doleta.gov/agworker/report9/naws\\_rpt9.pdf](http://www.doleta.gov/agworker/report9/naws_rpt9.pdf).

11. See *Migrant Health Problems*, MIGRANT CLINICIANS NETWORK, <http://www.migrantclinician.org/issues/migrant-info/health-problems.html> (last visited Jan. 27, 2012).

12. See Scott Rhodes, *Tuberculosis, Sexually Transmitted Disease, HIV, and Other Infections Among Farmworkers in the Eastern United States*, in *LATINO FARMWORKERS*, *supra* note 1, at 131–32.

13. See Quirina M. Vallejos, Sara A. Quandt & Thomas A. Arcury, *The Condition of Farmworker Housing in the Eastern United States*, in *LATINO FARMWORKERS*, *supra* note 1, at 55–56.

14. See Thomas A. Arcury, Melinda F. Wiggins & Sara A. Quandt, *Conclusions: An Agenda for Farmworker Social Justice in the Eastern United States*, in *LATINO FARMWORKERS*, *supra* note 1, at 222–23.

illnesses among goods-producing private industry sectors.<sup>15</sup> Injuries and illnesses in agriculture result from machinery accidents, falls, excessive heat, repetitive motion, and adverse pesticide exposure. Exposure to pesticides can be dermal, oral, and respiratory and can occur through direct contact with pesticides during application, contact with pesticide residue on plants, upon entering a recently treated area, or through drift from nearby application.<sup>16</sup> Farmworkers' family members may also be exposed to pesticide residues that are brought home on farmworkers' clothing, skin, and equipment.<sup>17</sup>

Pesticide exposure can result in a wide range of acute health effects, including nausea, dizziness, vomiting, headaches, stomach pain, rashes, and eye problems.<sup>18</sup> Animal and some human studies have shown that pesticides can also have chronic effects on the neurological, respiratory, immune, and reproductive systems and that they can be carcinogenic and mutagenic.<sup>19</sup> Recent research, such as the Agricultural Health Study, indicates that populations with increased,

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15. See *Workplace Injury and Illness Rates by Industry in 2007*, U.S. DEP'T OF LABOR, BUREAU OF LABOR STATISTICS, <http://www.bls.gov/opub/ted/2008/oct/wk4/art01.htm> (last visited Jan. 26, 2012).

16. See Brian Mayer, Joan Flocks & Paul Monaghan, *The Role of Employers and Supervisors in Promoting Pesticide Safety Behavior Among Florida Farmworkers*, 53 AM. J. IND. MED. 814, 815 (2010).

17. See Elaine M. Faustman, Susan M. Silbernagel, Richard A. Fenske, Thomas M. Burbacher & Rafael A. Ponce, *Mechanisms Underlying Children's Susceptibility to Environmental Toxicants*, 108 ENVTL. HEALTH PERSP. (SUPP. 1) 13, 17 (2000); Chensheng Lu, Richard A. Fenske, Nancy J. Simcox & David Kalman, *Pesticide Exposure of Children in an Agricultural Community: Evidence of Household Proximity to Farmland and Take Home Exposure Pathways*, 84 ENVTL. RES. 290 (2000); Sara A. Quandt, Alicia M. Doran, Pamela Rao, Jane A. Hoppin, Beverly M. Snively & Thomas A. Arcury, *Reporting Pesticide Assessment Results to Farmworker Families: Development, Implementation, and Evaluation of a Risk Communication Strategy*, 112 ENVTL. HEALTH PERSP. 636, 637 (2004); Pamela Rao, Amanda L. Gentry, Sara A. Quandt, Steven W. Davis, Beverly M. Snively & Thomas A. Arcury, *Pesticide Safety Behaviors in Latino Farmworker Family Households*, 49 AM. J. INDUS. MED. 271, 272 (2006); Nancy J. Simcox, Richard A. Fenske, Sarah A. Wolz, I-Chwen Lee & David A. Kalman, *Pesticides in Household Dust and Soil: Exposure Pathways for Children of Agricultural Families*, 103 ENVTL. HEALTH PERSP. 1126 (1995); Larkin L. Strong, Beti Thompson, Thomas D. Koepsell & Hendrika Meischke, *Factors Associated with Pesticide Safety Practices in Farmworkers*, 51 AM. J. INDUS. MED. 69 (2008).

18. See Donald J. Ecobichon, *Toxic Effects of Pesticides*, in CASARETT AND DOULL'S TOXICOLOGY: THE BASIC SCIENCE OF POISONS 666, 677 (Curtis D. Klaassen ed., 1996); Thomas A. Arcury & Sara A. Quandt, *Pesticides at Work and at Home: Exposure of Migrant Farmworkers*, 362 THE LANCET 2021 (2003); Linda A. McCauley, W. Kent Anger, Matthew Keiffer, Rick Langley, Mark G. Robson & Diane Rohlman, *Studying Health Outcomes in Farmworker Populations Exposed to Pesticides*, 114 ENVTL. HEALTH PERSP. 953 (2006).

19. See Michael C.R. Alavanja, Mustafa Dosemeci, Claudine Samanic, Jay Lubin, Charles F. Lynch, Charles Knott, Joseph Barker, Jane A. Hoppin, Dale P. Sandler, Joseph Coble, Thomas Kent & Aaron Blair, *Pesticides and Lung Cancer Risk in the Agricultural Health Study Cohort*, 160 AM. J. EPIDEMIOLOGY 876 (2004); Aaron Blair & Shelia Hoar Zahn, *Agricultural Exposures and Cancer*, 103 ENVTL. HEALTH PERSP. (SUPP. 8) 205 (1995); Wojciech Hanke & Johanna Jurewicz, *The Risk of Adverse Reproductive and Developmental Disorders Due to Occupational Pesticide Exposure: An Overview of Current Epidemiological Evidence*, 17 INT'L J. OCCUPATIONAL. MED. & ENVTL. HEALTH 223 (2004); Aaron Blair & Sheila Hoar Zahn & Aaron Blair, *Cancer Among Migrant and Seasonal Farmworkers: An Epidemiologic Review and Research Agenda*, 24 AM. J. IND. MED. 753 (1993) (noting that some of these studies have linked adult exposure to pesticides with increased rates of central nervous system cancer, brain cancer, leukemia, germ cell tumors, non-Hodgkin's lymphoma, Ewing's sarcoma, Wilms' tumor, and various birth defects in their children. Childhood exposure to pesticides has been linked to

regular exposure to pesticides, such as those who work on farms, have higher rates of some kinds of cancers.<sup>20</sup> When agricultural chemicals enter the body, they can also make existing health problems worse. For example, a worker suffering from heat stress may be more susceptible to pesticide toxicity.<sup>21</sup> If a worker's immune system has been weakened by pesticides, then he or she is more susceptible to other diseases.<sup>22</sup> Yet, despite these studies, there is still limited understanding of the cumulative, additive, synergistic, and chronic effects of long-term exposure to multiple pesticides among high-risk populations.<sup>23</sup>

It is likely that many occupational injuries and illnesses are undetected and unreported for undocumented workers. These workers may be unaware of or unable to access health care services available to them. They rarely have insurance or the private resources to pay for health care, they may not have transportation, they may risk losing their jobs if they take time off to seek health care, and they may fear that using a public clinic will draw attention to their undocumented status.<sup>24</sup> Even when a worker does access medical care, pesticide-related illnesses may be undetected or unreported, despite laws in some states requiring such reporting, by health care personnel who do not recognize the symptoms or are unfamiliar with the reporting requirements.<sup>25</sup>

## II. CURRENT POLITICAL AND ECONOMIC TRENDS

Globally, the United States hosts more immigrants from Mexico than any other

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Guillain-Barré syndrome, brain cancer, leukemia, soft-tissue sarcoma, lymphoma, neurological damage, and immune system damages).

20. See Michael C.R. Alavanja, Dale P. Sandler, Charles F. Lynch, Charles Knott, Jay H. Lubin, Robert Tarone, Kent Thomas, Mustafa Dosemeci, Joseph Barker, Jane A. Hoppin & Aaron Blair, *Cancer Incidence in the Agricultural Health Study*, 31 SCANDINAVIAN J. WORK, ENV'T & HEALTH (SUPP. 1) 39 (2005). See generally *Important Findings from the Agricultural Health Study*, NAT'L INSTS. OF HEALTH, <http://aghealth.nci.nih.gov/results.html> (last visited Jan. 27, 2012).

21. See P.N. Viswanathan & C.R. Krishna Murti, *Effects of Temperature and Humidity on Ecotoxicology of Chemicals*, in ECOTOXICOLOGY AND CLIMATE 139, 141 (P. Bourdeau, J.A. Haines, W. Klein & C.R. Krishna Murti eds., 1989); NAT'L RURAL HEALTH CARE ASSOC., THE OCCUPATIONAL HEALTH OF MIGRANT AND SEASONAL FARMWORKERS IN THE UNITED STATES REPORT SUMMARY 9 (2nd ed. 1986).

22. See Robert Repetto & Sanjay S. Baliga, *Pesticides and Immunosuppression: The Risks to Public Health*, 12 HEALTH POL'Y & PLAN. 97 (1997).

23. See Deborah A. Cory-Slechta, *Studying Toxicants as Single Chemicals: Does this Strategy Adequately Identify Neurotoxic Risk?*, 26 NEUROTOXICOLOGY 491, 492 (2005); Julie L. Daniels, Andrew F. Olshan & David A. Savitz, *Pesticides and Childhood Cancers*, 105 ENVTL. HEALTH PERSP. 1068, 1073 (1997); see also Richard A. Fenske, *Pesticide Exposure Assessment of Workers and their Families*, 12 OCCUPATIONAL MED. 221 (1997).

24. See Mark Berk & Claudia Schur, *The Effect of Fear on Access to Care Among Undocumented Latino Immigrants*, 3 J. IMMIGR. HEALTH 151, 155 (2001); Sara R. Cooper, Sharon P. Cooper, Sarah S. Felknor, Vilma S. Santana, Frida M. Fischer, Eva M. Shipp & Martha S. Vela Acosta, *Nontraditional Work Factors in Farmworker Adolescent Populations: Implications for Health Research and Interventions*, 120 PUB. HEALTH REP. 622, 623 (2005).

25. See Rupali Das, Andrea Steege, Sherry Baron, John Beckman & Robert Harrison, *Pesticide-Related Illness Among Migrant Farm Workers in the United States*, 7 INT'L J. OCCUPATIONAL. ENVTL. HEALTH 303, 306 (2001).

country hosts from all countries combined.<sup>26</sup> Mexican citizens have migrated with or without documentation to the United States in search of employment for decades.<sup>27</sup> At different historical points, economic migration has been officially endorsed or forgiven, but undocumented migration is mostly publicly discouraged while privately tolerated—largely depending on the state of the U.S. economy and its labor needs.<sup>28</sup> Despite predictions that the xenophobia that often accompanies policies involving immigration reform (such as the 1986 Immigration Reform and Control Act and the 1994 North American Free Trade Agreement) would curtail Mexico-United States migration, the flow of undocumented Mexican farmworkers into the United States has not responded that way.<sup>29</sup> This is because Mexico-United States migration is correlated with other factors—such as migrants’ transnational social networks,<sup>30</sup> wage differentials and employment opportunities,<sup>31</sup> and the actual economies of the two countries<sup>32</sup>—and not with popular sentiment or policy speculation. For example, although there was much debate about the potential effects of the North American Free Trade Agreement (NAFTA), part of the speculation was that the agreement would decrease Mexico-United States migration by promoting economic growth and employment opportunities in Mexico, thus reducing the impetus to migrate to the United States for employment.<sup>33</sup> Instead, some of the policies intended to support economic growth in Mexico—privatization, land reform, and market integration—along with a dismantling of the price support and state sponsored activities that

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26. See PEW HISPANIC CTR., FACT SHEET: MEXICAN IMMIGRANTS IN THE UNITED STATES, 2008 (2009), available at <http://pewhispanic.org/files/factsheets/47.pdf>.

27. See *id.*

28. See Patricia Fernandez-Kelly & Douglas S. Massey, *Borders for Whom? The Role of NAFTA in Mexico-U.S. Migration*, 610 ANNALS. AM. ACAD. POL. & SOC. SCI. 98, 106-09 (2007); Juan F. Perea, *A Brief History of Race and the U.S.-Mexican Border: Tracing the Trajectories of Conquest*, 51 UCLA L. REV. 283, 303-06 (2003); see also Jorge Durand, Douglas S. Massey & Rene M. Zenteno, *Mexican Immigration to the United States: Continuities and Changes*, 36 LATIN. AM. RES. REV. 107, 109-12 (2001) (Generally, economic migration from Mexico has been encouraged and sometimes officially endorsed through temporary worker programs when industries cannot find other sources of inexpensive labor. For example, industrialists sought out workers from Mexico during World War I when they no longer had access to Eastern and Southern European immigrant labor pools. From 1942–1964, the infamous *Bracero* program allowed agricultural employers to recruit temporary farmworkers from Mexico to fill the labor gap initially left when U.S. citizens were deployed or working in wartime industries. In between these periods, however, during times of U.S. economic weakness and high unemployment, there have been surges of anti-immigrant policies resulting in the heightened border control and the deportation of undocumented workers).

29. See Philip Martin, *Mexico-US Migration*, in NAFTA REVISITED: ACHIEVEMENTS AND CHALLENGES 441, 444-49 (Gary Hufbauer & Jeffrey Schotte eds., 2005).

30. See Gordon Hanson, *Illegal Migration from Mexico to the United States*, 44 J. ECON. LITERATURE 869, 872 (2006).

31. See *id.* at 871; RAKESH KOCHHAR, PEW HISPANIC CTR., SURVEY OF MEXICAN MIGRANTS, PART THREE: THE ECONOMIC TRANSITION TO AMERICA 6 (2005).

32. See Hanson, *supra* note 30, at 890 (noting that, “[M]igration is more likely during periods when U.S. income is expanding relative to income in Mexico.”); JEFFREY S. PASSEL & ROBERTO SURO, PEW HISPANIC CTR., RISE, PEAK, AND DECLINE: TRENDS IN U.S. IMMIGRATION 1992–2004, at 10-12 (2005).

33. See Martin, *supra* note 29, at 449.

promoted the Mexican agricultural industry, created labor displacement and disruption that increased migration pressures.<sup>34</sup>

Both documented and undocumented immigration flows from Mexico, like those from other countries, grew rapidly from the mid-1990s until about 2000. In 2000, a peak in U.S. economic expansion mirrored a peak of migration from Mexico; nearly 3.4 million U.S. jobs were created and approximately 530,000 migrants arrived from Mexico.<sup>35</sup> Detailed studies of the U.S. labor market during this recovery phase show that the heightened demand for low-skilled, low-wage workers occurred not only in the agricultural sector, but in the construction and hospitality industries as well.<sup>36</sup> In 2002, the U.S. economy lost 415,000 jobs and migration from Mexico declined to 378,000, but as the U.S. economy regained momentum in 2003 and 2004, the pace of Mexican migration also picked up.<sup>37</sup> Undocumented immigration again slowed after 2006 to such an extent that, by 2008, flows were down at least 40% from mid-decade, but flows of legal permanent residents remained relatively steady.<sup>38</sup>

The basic purpose of NAFTA was to integrate markets among member countries by mobilizing capital, goods, commodities, services, and information, but legislators did not attempt to equalize potentially disparate levels of economic development to the extent needed to prevent increased migration from Mexico to the United States and Canada.<sup>39</sup> In fact, during the years of NAFTA's existence, U.S. policies have focused on separating labor markets through increasingly stricter border policies despite the periodic demands for and lure of low-wage immigrant labor.<sup>40</sup>

About one and a half years after the 9/11 attacks, the newly created Department of Homeland Security assumed most of the functions of the dismantled Immigration and Naturalization Services, sending the message that immigration had become more a matter of national security than a matter of labor regulation.<sup>41</sup> The Border Patrol between Mexico and the United States was expanded and increasingly militarized, and officers from Immigration and Customs Enforcement (ICE) became notorious for regularly conducting raids at immigrant workplaces and residences, sometimes using legally questionable

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34. See *id.* at 450; Raul Delgado-Wise, *Critical Dimensions of Mexico-U.S. Migration Under the Aegis of Neoliberalism and NAFTA*, CAN. J. DEV. STUD. 591, 599 (2004); Fernandez-Kelly & Massey, *supra* note 28, at 105-06; ALEJANDRO NADAL, WORLD WILDLIFE FUND INT'L & OXFAM GREAT BRITAIN, THE ENVIRONMENTAL AND SOCIAL IMPACTS OF ECONOMIC LIBERALIZATION ON CORN PRODUCTION IN MEXICO 7-8 (2000).

35. See PASSEL & SURO, *supra* note 32, at 10.

36. See KOCHHAR, *supra* note 31, at 14-15.

37. See PASSEL & SURO, *supra* note 32, at 3; JEFFREY S. PASSEL & D'VERA COHN, PEW HISPANIC CTR., MEXICAN IMMIGRANTS: HOW MANY COME? HOW MANY LEAVE? 3 (2009).

38. See PASSEL & COHN, *supra* note 37, at ii.

39. See Fernandez-Kelly & Massey, *supra* note 28, at 105, 108.

40. See *id.* at 99.

41. See *id.* at 108.

search and seizure methods.<sup>42</sup> Anti-immigrant sentiment has been reflected in pecuniary federal legislative attempts and state laws regarding undocumented immigrants.<sup>43</sup> Yet, previous increased border enforcement efforts and heated debate about immigration reform have had no discernable effect on the pool of farmworkers—most of these migrants eventually succeed in crossing the border.<sup>44</sup> What these policies do, however, is arouse anxiety and fears among those who migrate and force them to go deeper underground, take more risks in their border crossings, stay longer in the United States, and remain silent and invisible even when faced with dangerous working conditions.<sup>45</sup>

Proponents of the same market theory that champions free trade agreements may also argue that workers who take on hazardous conditions, such as farmworkers, are adequately compensated for their endeavors. The theory of compensating wage differentials assumes that these workers receive wages that reflect an acceptance of working conditions.<sup>46</sup> This theory claims that the less risk-averse are paid at a rate commensurate with the risks or conditions they must face in their jobs.<sup>47</sup> Yet, this implies that a worker is aware of and accepts the risks of the worker's occupation, and this is not the case for farmworkers. First, the risks of pesticide exposure are not fully known, even by medical experts.<sup>48</sup> Despite regulations requiring employers to provide information to farmworkers about certain pesticides used at the workplace, the reality is that workers have

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42. See *id.*; CARDOZO IMMIGR. JUST. CLINIC, CONSTITUTION ON ICE: A REPORT ON IMMIGRATION HOME RAID OPERATIONS I (2009).

43. See Fernandez-Kelly & Massey, *supra* note 28, at 108 (explaining that in 2007, Arizona adopted the Legal Arizona Workers Act (LAWA) which authorized the state of Arizona to suspend or revoke the business licenses of employers who knowingly hired unauthorized workers and required all employers statewide to use the federal government's E-Verify program to confirm the work eligibility of their new hires); see also ARIZ. REV. STAT. ANN. §§ 23-211-216 (2008) (One week after it was signed, a coalition of immigrant-rights and business groups, including the U.S. Chamber of Commerce, filed a lawsuit to enjoin the act, arguing primarily that the state act was preempted by federal laws. In February 2008, the federal district court in Arizona dismissed the lawsuit and, a year later, the Ninth Circuit Court of Appeals affirmed that decision in *Chicanos Por La Causa, Inc. v. Napolitano*, 558 F.3d 856 (9th Cir. 2009). In *Chamber of Commerce of the United States of America v. Whiting*, the U.S. Supreme Court majority affirmed that the portions of LAWA that allowed the state to suspend or revoke business license and required employers to participate in E-Verify did not preempt federal law. 131 S. Ct. 1968, 1972–1973 (2011). Meanwhile, many other states are debating bringing their own Arizona-style immigration laws).

44. See Stephen R. Boucher, Aaron Smith & J. Edward Taylor, *Impact of Policy Reforms on the Supply of Mexican Labor to U.S. Farms: New Evidence from Mexico*, 29 REV. OF AGRIC. ECON. 1, 14-15 (2006).

45. See *id.* See generally LUIS ALBERTO URREA, *THE DEVIL'S HIGHWAY* (2005) (providing a true, harrowing account of twenty-six Mexicans attempting to enter the United States in 2001 via the Sonoran desert in Arizona. The group is led astray and fourteen of them—the “Yuma 14”—do not survive the journey).

46. See PETER DORMAN, *MARKETS AND MORTALITY* 26 (1996).

47. See *id.* at 25-31 (discussing many factors, recognized by both economists and non-economists that affect a “pure” form of this theory. These factors include whether workers can ever be fully informed, whether collective bargaining can change the properties of market allocation, and whether the hedonic valuation of life and health is ethical).

48. See U.S. GOV'T ACCOUNTABILITY OFFICE, GAO/RCED-00-40, *PESTICIDES-IMPROVEMENTS NEEDED TO ENSURE THE SAFETY OF FARMWORKERS AND THEIR CHILDREN* 10-15 (2000) [hereinafter GAO].



little access to or understanding of this information and are thus impaired in their ability to make informed personal risk assessments.<sup>49</sup> Even if workers are informed, perception of and adaptation to environmental risks depend on a variety of individual, cultural, and structural factors.<sup>50</sup> For example, farmworkers may not take precautions recommended by regulations because they do not feel they have control over the negative health effects of pesticide exposure at their worksites<sup>51</sup> or access to alternative employment.<sup>52</sup> There may also be variations of risk acceptance according to demographics such as gender, class, or ethnicity.<sup>53</sup> In short, the commodification of occupational risk for farmworkers leads to an inevitable conclusion, as described by economist Peter Dorman:

[S]afe and healthy workplaces are rationed in the same manner as any other desirable, scarce good. Those who by virtue of class, caste, or simple good luck are able to acquire safety do so; they are also rewarded with jobs that are more interesting, skill-enhancing, and better paid. Danger and hardship are the lot of the poor and powerless. In this way, differences in the level of risk faced by workers correspond to the other differences in their life chances and thus compound them.<sup>54</sup>

### III. THE FAILURE OF PROTECTIVE REGULATION

If the theory of compensating wage differentials were absolute, there would be no need for protective occupational health and safety regulation. The theory in a pure form assumes that workers and employers are in a total contractual state where workers assume and are compensated fairly for occupational risks.<sup>55</sup> Regulation would hinder the bargaining process between employees and employers.<sup>56</sup> The fact that regulation does exist, therefore, must reflect some inherent recognition that workers are not always on an even bargaining level with employers, and that some intervention is needed to put them there; regulations arise to protect potentially less powerful parties.<sup>57</sup> In the case of occupational health standards, regulation may also exist in recognition of public health as a common good mandating protection even in spite of workers' own cognitive

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49. See Joan Flocks, Paul Monaghan, Stan Albrecht & Alfredo Bahena, *Florida Farmworkers' Perceptions and Lay Knowledge of Occupational Pesticides*, 32 J. CMTY. HEALTH 181 (2007).

50. See Elaine Vaughan, *Individual and Cultural Differences in Adaptation to Environmental Risks*, 48 AM. PSYCHOL. 673, 674 (1993).

51. See *id.* at 676-77; C. Austin, T.A. Arcury, S.A. Quandt, J.S. Preisser, R.M. Saavedra & L.F. Cabrera, *Training Farmworkers about Pesticide Safety: Issues of Control*, 12 J. HEALTH CARE FOR POOR & UNDERSERVED 236, 241 (2001).

52. See Elaine Vaughan, *Chronic Exposure to an Environmental Hazard: Risk Perceptions and Self-Protective Behavior*, 12 HEALTH PSYCHOL. 74, 82 (1993).

53. See Vaughan, *supra* note 50, at 673-79.

54. DORMAN, *supra* note 46, at 21.

55. See *id.* at 26.

56. See *id.* at 28, 127-35.

57. See *id.* at 186.

dissonance, and as such it should not be subject to bargaining.<sup>58</sup>

Successful protective regulation requires that government enforce standards, that management complies with standards, and that workers are knowledgeable about standards.<sup>59</sup> In the case of farmworkers, federal regulation should provide protection in two ways: directly—by regulating the conditions of exposure, and indirectly—by providing the resources farmworkers need to achieve some control over their working conditions. Yet for farmworkers, regulations that directly involve pesticide exposure are often nonexistent, ineffective, or unenforced.<sup>60</sup> Furthermore, competitive domestic and international market forces pressure employers to lobby for less regulation of pesticides and pressure workers to remain unorganized and silent about workplace safety.<sup>61</sup>

Farmworkers are exempt from many regulations that could afford indirect protection under the system of “agricultural exceptionalism,” which emerged during a historical time in the U.S. when institutional discrimination was accepted and prevalent.<sup>62</sup> Even when protective regulation does exist, however, many employers use a variety of practices—such as hiring labor contractors or a temporary workforce—that allow them to circumvent laws and transfer many of the physical and economic risks of agricultural employment to the workers.<sup>63</sup>

#### A. Direct Regulation of Pesticides

In 1947, the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)<sup>64</sup> was enacted to ensure the effective registration of pesticides containing chemical ingredients that had been largely created during World War II.<sup>65</sup> In 1970, the Environmental Protection Agency (EPA) was established and FIFRA administration and staff were transferred to it from the United States Department of

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58. See *id.*

59. See Levenstein & Wooding, *supra* note 5, at 45.

60. See Keith Cunningham-Parmeter, *A Poisoned Field: Farmworkers, Pesticide Exposure, and Tort Recovery in an Era of Regulatory Failure*, 28 N.Y.U. REV. L. & SOC. CHANGE 431, 504 (2004); Shannon Adair Tool, *Farmworkers and FIFRA: Laboring under the Cloud*, 31 SW. U. L. REV. 93, 107-14 (2001).

61. See Levenstein & Wooding, *supra* note 5, at 45.

62. See Sean A. Andrade, *Biting the Hand that Feeds You: How Federal Law has Permitted Employers to Violate the Basic Rights of Farmworkers and How this Has Begun to Impact Other Industries*, 4 U. PA. J. LAB & EMP. L. 601, 606-10 (2002); Cunningham-Parmeter, *supra* note 60, at 461-66; Marc Linder, *Farm Workers and the Fair Labor Standards Act: Racial Discrimination in the New Deal*, 65 TEX. L. REV. 1335, 1351-67 (1987); Guadalupe T. Luna, *An Infinite Distance?: Agricultural Exceptionalism and Agricultural Labor*, 1 U. PA. J. LAB & EMP. L. 487, 489-95 (1998); Juan F. Perea, *A Brief History of Race and the U.S.-Mexican Border: Tracing the Trajectories of Conquest*, 51 UCLA L. REV. 283, 307-09 (2003).

63. See Marc Linder, *Crewleaders and Agricultural Sweatshops: The Lawful and Unlawful Exploitation of Migrant Farmworkers*, 23 CREIGHTON L. REV. 213, 215-16 (1989); Luna, *supra* note 62, at 494-95; Perea, *supra* note 62, at 304-07.

64. 7 U.S.C. §§ 136-136y (2006); 40 C.F.R. §§ 150-189 (2010).

65. See Tool, *supra* note 60, at 96.

Agriculture (USDA).<sup>66</sup> At that time, FIFRA focused mainly on issues such as pesticide labeling and registration and not on workplace safety.<sup>67</sup> Later that year, the Occupational Safety and Health Act of 1970 (OSH Act) was signed into law.<sup>68</sup> The OSH Act created the Occupational Safety and Health Administration (OSHA), which had the mandate “to assure as far as possible every working man and woman in the Nation safe and healthful working conditions”<sup>69</sup> through the promulgation and enforcement of occupational safety standards. Although it seems logical that OSHA would assume regulatory authority over agricultural workplace hazards such as pesticides, this was not to be the case. The OSH Act included a clause that prevented the Secretary of Labor from regulating working conditions when another federal agency had statutory authority to do so.<sup>70</sup> The EPA had been moving in the direction of regulating agricultural pesticide exposure when it promulgated an early version of the Worker Protection Standard (WPS) in 1974.<sup>71</sup> Sensing impending negative consequences for farmworkers in having the EPA administer pesticide safety regulations, two advocacy groups and a pesticide-affected worker filed an action to compel the Secretary of Labor to issue permanent farmworker pesticide safety regulations under OSHA, but the D.C. Circuit held that Congress had conferred authority to regulate pesticides at agricultural workplaces to the EPA.<sup>72</sup> Currently, OSHA maintains only a limited role in promoting agricultural pesticide safety through provisions such as the Field Sanitation Standard.<sup>73</sup>

Under FIFRA, there are essentially two avenues of pesticide regulation that directly affect farmworkers: the registration and re-registration processes<sup>74</sup> and the WPS.<sup>75</sup> According to FIFRA, in order for a pesticide to be distributed or sold, it must first be registered.<sup>76</sup> To register a pesticide, an applicant must submit information such as the chemical formula, a request that the pesticide be

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66. See Cunningham-Parmeter, *supra* note 60, at 449-52.

67. See *id.*

68. 29 U.S.C. §§ 651-78 (2006).

69. *Id.* at § 651(b).

70. See *id.* at § 653(b)(1) (“Nothing in this chapter shall apply to working conditions of employees with respect to which other Federal agencies, and State agencies acting under section 2021 of title 42, exercise statutory authority to prescribe or enforce standards or regulations affecting occupational safety or health.”).

71. See Cunningham-Parmeter, *supra* note 60, at 451.

72. See *Organized Migrants in Cmty. Action, Inc. v. Brennan*, 520 F.2d 1161 (D.C. Cir. 1975).

73. See 29 C.F.R. §§ 1928.110-1928.110(c) (2010) (requiring agricultural establishments with eleven or more employees to provide toilet and hand washing facilities (with a basin, container, or outlet with an adequate supply of potable water, soap and single-use towels) within a one-quarter-mile walk of each worker’s location in the field. It also requires employers to inform workers of the location of the facilities and about the importance of good hygiene practices to minimize exposure to the hazards such as agricultural pesticide residues).

74. See 7 U.S.C. §§ 136(a), 136(a-1) (2006).

75. See 40 C.F.R. §§ 170.1-170.260 (2010).

76. See 7 U.S.C. § 136(j)(1)(a) (2006) (The regulations regarding registration and re-registration of pesticides do not encourage decreased use of pesticides nor question the danger of pesticides if not supported by data. They do not impede marketing of pesticides.).

classified for general use or for restricted use (or both), the proposed labeling,<sup>77</sup> and “. . . if requested by the Administrator, a full description of the tests made and the results thereof upon which the claims are based, or alternatively a citation to data that appear in the public literature or that previously had been submitted to the Administrator . . . .”<sup>78</sup> The Administrator shall register a pesticide if the Administrator is satisfied with the labeling and other material submitted and if the Administrator determines the pesticide will not cause “unreasonable adverse effects on the environment.”<sup>79</sup> The definition of “environment” includes “water, air, land, and all plants and man and other animals living therein, and the interrelationships which exist among these.”<sup>80</sup>

There are several concerns regarding the data requirements and other provisions of the registration process. First, there is much flexibility to the data requirements, including exemptions, exceptions, and other Administrator discretion regarding the provision of data.<sup>81</sup> Second, in addressing the proper registration, labeling, and seizure of misbranded pesticides, the Administrator can rely on assurances and studies by manufacturers themselves—which creates a conflict of interest.<sup>82</sup> In fact, the pressure from pesticide manufacturers and agribusiness in the past has resulted in the EPA streamlining the registration process.<sup>83</sup> Third, the registration process requires an applicant to submit test data to the EPA demonstrating that the pesticide will perform its intended function without unreasonable adverse effects, including reports of acute and chronic health effects.<sup>84</sup> However, as discussed, these data are lacking and there is no special consideration for people who work daily with these pesticides, such as farmworkers.<sup>85</sup> Finally, one of the most controversial aspects of the registration process is that several provisions explicitly describe the consideration of economic factors such as the benefits of using the pesticide<sup>86</sup> and the expense of generating data.<sup>87</sup> In other words, the regulation provides for a cost/benefit

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77. See *id.* at § 136a(c)(1)(C) (The contents of the label must include information such as the chemical ingredients, directions for use, hazard and precautionary statements for humans and domestic animals, and toxicity level); see also 42 C.F.R. § 156.10(a) (2010).

78. 7 U.S.C. § 136(c)(1)(F) (2006).

79. *Id.* at § 136a(c)(5)(D) (Additionally, the Administrator “shall not make any lack of essentiality a criterion for denying registration of any pesticide” and “and “may waive data requirements pertaining to efficacy”).

80. *Id.* at § 136(j).

81. See Cunningham-Parmeter, *supra* note 60, at 449-52.

82. See Tool, *supra* note 60, at 104.

83. See *id.* at 93-94.

84. See Cunningham-Parmeter, *supra* note 60, at 449.

85. See *id.* at 440-48.

86. See 7 U.S.C. § 136(bb) (stating that “[t]he term ‘unreasonable adverse effects on the environment’ means (1) any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide . . .”).

87. See *id.* at § 136a(c)(2)(A) (stating that the Administrator shall develop guidelines that specify what kinds of information will be required to support the registration and that in developing these guidelines, “the Administrator shall consider the economic factors of potential national volume of use, extent of

analysis that weighs the unreasonable risk to humans or environment against the beneficial commercial use of the pesticide in question. Yet, the adverse effect of pesticides on workers is a public health matter, and it is questionable whether it should be subject to an economically driven calculation.<sup>88</sup>

The second FIFRA component that directly impacts farmworkers and pesticide safety is the WPS, which was expanded in 1992 to include not only workers performing hand labor in fields and nurseries, but also those who mixed and applied pesticides.<sup>89</sup> According to the WPS, the specific means by which an employer is required to protect farmworkers include: enforcing entry time restrictions into pesticide treated areas;<sup>90</sup> providing posted and/or oral notice about treated areas to farmworkers;<sup>91</sup> providing information about applied pesticides in a centrally located area;<sup>92</sup> and providing training with specific instructions about how farmworkers can protect themselves from pesticides.<sup>93</sup> The WPS also requires employers to provide sufficient direction about the regulation to supervisors of workers and to require those supervisors to assure workers' protection and compliance with the regulations.<sup>94</sup> Employers are directed, in the event of a poisoning, to provide prompt transportation from the workplace to an emergency medical facility where the employer shall inform the treating medical personnel of the type of pesticide involved and the circumstances of exposure.<sup>95</sup>

Several evaluations have questioned whether the WPS has succeeded in protecting farmworkers from pesticide exposure.<sup>96</sup> In particular, the quality and effectiveness of WPS training for farmworkers has been questioned. Researchers have found that employer training may be nonexistent, minimal, or in a format that does not guarantee that workers actually learn anything.<sup>97</sup> There are many practical considerations that prevent farmworkers from complying with safety recommendations as well. For example, farmworkers may not have access to facilities where they can wash their hands during the workday or to washing

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distribution, and the impact of the cost of meeting the requirements on the incentives for any potential registrant to undertake the development of the required data").

88. See Cunningham-Parmeter, *supra* note 60, at 449-51; Tool, *supra* note 60, at 103-06.

89. See A. LARSON, AN ASSESSMENT OF WORKER TRAINING UNDER THE WORKER PROTECTION STANDARD, FINAL REPORT TO THE U.S. EPA 1 (2000).

90. 40 C.F.R. § 170.112 (2010).

91. *Id.* at § 170.120.

92. *Id.* at § 170.135.

93. *Id.* at § 170.130.

94. *Id.* at § 170.7.

95. *Id.* at § 170.160.

96. See GAO, *supra* note 48, at 16-23.

97. See T.A. Arcury, Sara A. Quandt, Colin K. Austin, John Preisser & Luis F. Cabrera, *Implementation of EPA's Worker Protection Standard Training for Agricultural Laborers: An Evaluation using North Carolina Data*, 114 PUB. HEALTH REP. 459, 467 (1999); LARSON, *supra* note 89, at 62-68.

machines or showers after work.<sup>98</sup> Furthermore, several investigations suggest that perceived control over the ability to protect oneself from pesticide exposure is strongly correlated with behavior and that farmworkers do not feel a sense of control at their workplaces.<sup>99</sup> Finally, the WPS requires that technical, accurate pesticide safety information be communicated through employers and supervisors, thus assuring that farmworkers are dependent on these parties for their personal safety.<sup>100</sup>

Another major criticism of the WPS has to do with states' role and history in enforcement. Under FIFRA, primary authority to enforce pesticide regulations is devolved to the states under a cooperative federalism scheme in which the EPA retains overseer capacity to ensure that states continue to meet the federal standards.<sup>101</sup> The anticipated benefit of devolving environmental statutes is that decision-making is moved closer to an affected public and thus will be more efficient and democratic.<sup>102</sup> This again assumes, however, that the affected public has full access to information about an issue and that the overseer federal agency follows through when needed on its ability to withdraw a state's authority. If this does not occur, the fear is that the states will engage in a race to the bottom and that a nationally inconsistent pattern of monitoring practices will emerge. Indeed, this is reported to be the case with the WPS and FIFRA's labeling and use requirements, with detrimental results including: a lack of a standardized monitoring; lack of inspections; unpenalized violations; underreported violations; lack of worker training; lack of posting of information; and early re-entry into treated work areas.<sup>103</sup>

### B. Indirect Regulation

In addition to regulations that directly address occupational pesticide usage, there is legislation that can afford workers occupational protection by allowing them to exercise more control over their workplaces. For example, workers who can engage in dialogue and bargaining with their employers are better able to

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98. See T.A. Arcury, Sara A. Quandt, Altha J. Cravey, Rebecca C. Elmore & Gregory B. Russell, *Farmworker Reports of Pesticide Safety and Sanitation in the Work Environment*, 39 AM. J. IND. MED. 487, 491-93 (2001); Mayer et al., *supra* note 16, at 819-21.

99. See T.A. Arcury, Sara A. Quandt & Gregory B. Russell, *Pesticide Safety among Farmworkers: Perceived Risk and Perceived Control as Factors Reflecting Environmental Justice*, 110 ENVTL. HEALTH PERSP. 233 (2002); Austin et al., *supra* note 51, at 236-49.

100. See Mayer et al., *supra* note 16, at 821-22; see also Charlene Bryan, Michael R. Lasarev, Linda A. McCauley, Jennifer A. Scherer & Diana Sticker, *Pesticide Knowledge and Risk Perception Among Adolescent Latino Farmworkers*, 8 J. AGRIC. SAFETY & HEALTH 397, 404-07 (2002).

101. See 7 U.S.C. §§ 136(W)(1), (2)(w-1)-136(w-2) (2006).

102. See Rena I. Steinzor, *Devolution and the Public Health*, 24 HARV. ENVTL. L. REV. 351, 373-74 (2000).

103. See Arcury et al., *supra* note 97, at 459; Cunningham-Parmeter, *supra* note 60, at 455-60; SHELLEY DAVIS & REBECCA SCHLEIFER, FARMWORKER JUST. FUND, *INDIFFERENCE TO SAFETY: FLORIDA'S INVESTIGATION INTO PESTICIDE POISONING OF FARMWORKERS 1-6* (1998); GAO, *supra* note 48, at 20-23.

ensure that there are adequate health and safety measures or that they are being proportionately compensated for occupational risks. Since the 1930s, the rights of U.S. workers to organize, engage in collective bargaining and work stoppage methods, and receive a minimum wage and overtime pay have been protected by federal laws such as those that eventually evolved into the National Labor Relations Act (NLRA)<sup>104</sup> and the Fair Labor Standards Act (FLSA).<sup>105</sup> But even with the inception of these laws, Congress failed to extend their protections to farmworkers under the doctrine of agricultural exceptionalism—a practice that historically emerged from negotiations between Southern politicians seeking to protect agriculture’s access to cheap labor (which at the time was predominately African-American) and Franklin D. Roosevelt’s administration attempting to promote New Deal social and economic reform.<sup>106</sup> The outcome of this policy was institutional discrimination and its legacy remains in place today.<sup>107</sup>

For example, the NLRA provides important legislative protection for workers. It recognizes that strikes and other forms of work disruption resulting from uneven bargaining between workers and employers are detrimental to commerce.<sup>108</sup> To discourage such disruption, the NLRA seeks to level the playing field for workers by protecting their right to associate, organize, select representatives, and, most importantly, engage in collective bargaining.<sup>109</sup> But the NLRA explicitly excludes farmworkers.<sup>110</sup> It is very difficult for farmworkers to organize without legal protection against employer retribution, and the result has been that while the nation’s other workers are able to engage in collective action to increase their salaries and improve their working conditions, farmworkers often have had to fight just to be paid their existing wages.<sup>111</sup> Unorganized workers who fear employer retribution will not press for increased safety measures at the workplace.<sup>112</sup>

The FLSA recognizes that working conditions that reduce the standard of living necessary for the health, efficiency, and general well-being of workers can eventually interfere with productive commerce.<sup>113</sup> Thus, the FLSA seeks to protect commerce by regulating working conditions such as minimum wage,<sup>114</sup>

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104. 29 U.S.C. § 151 (2006).

105. 29 U.S.C. § 201 (2006).

106. See Linder, *Farm Workers and the Fair Labor Standards Act*, *supra* note 62, at 1351; Perea, *supra* note 62, at 307.

107. See Perea, *supra* note 62, at 307-08.

108. See 29 U.S.C. § 151 (2006).

109. See *id.*

110. See *id.* at § 152(3) (“The term ‘employee’ . . . shall not include any individual employed as an agricultural laborer . . .”).

111. See Andrade, *supra* note 62, at 606-10; Perea, *supra* note 62, at 308.

112. See Alicia Chavira-Prado, *Work, Health, and the Family: Gender Structure and Women’s Status in an Undocumented Migrant Population*, 51 HUMAN RIGHTS Q. 53, 58 (1992).

113. See 29 U.S.C. § 202(a) (2006).

114. *Id.* at § 206.

overtime pay,<sup>115</sup> recordkeeping,<sup>116</sup> and youth employment<sup>117</sup> for employees in private and public industry.<sup>118</sup> Originally, farmworkers were excluded from the FLSA, but in 1966 Congress amended the Act, extending the minimum wage and overtime provisions of the Act to the majority of farmworkers.<sup>119</sup> However, farmworkers are still subject to exclusions. For example, certain farmworkers can be exempt from minimum wage, overtime pay, and child labor provisions.<sup>120</sup>

### C. Other Factors that Complicate Protection

Even where protective legislation does exist for farmworkers, agricultural employers have historically used labor arrangements that can circumvent this regulation by shifting the risks of farmwork away from the employer onto other parties. Such practices include temporary worker programs and the use of labor contractors (also known as “crewleaders”).<sup>121</sup> Temporary worker programs have been a mainstay of the agricultural industry since the 1940s, when the *Bracero* program was initiated.<sup>122</sup> This program resulted from bi-national agreements that allowed Mexican citizens to migrate into the United States and work as temporary farmworkers.<sup>123</sup> While this stream of accessible labor was originally justified as necessary to replace the United States citizens that had become involved in World War II and in wartime industries,<sup>124</sup> the arrangement was extended for more than two decades and was fraught with exploitative practices.<sup>125</sup> Employers had maximum control over their workforce and introduced the piece rate system of compensation and production quotas.<sup>126</sup> All contracts were renewable, but temporary, and the competition for these jobs discouraged labor organizing.<sup>127</sup> Temporary worker programs have recently gained popularity again among employers concerned about tightening immigration controls that could limit their access to cheap labor. As with the *Bracero* program, the current programs benefit employers by ensuring a stream of available, documented workers, but they also allow those employers to maintain

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115. *Id.* at § 207.

116. *Id.* at § 211.

117. *Id.* at § 212.

118. *Id.* at § 203(e)(1)-(5).

119. *See* Perea, *supra* note 62, at 308.

120. *See* 29 U.S.C. § 213(a)-(c).

121. *See* Linder, *Crewleaders and Agricultural Sweatshops*, *supra* note 63, at 216-17; Perea, *supra* note 62, at 304-05.

122. *See* Andrade, *supra* note 62, at 609-14; Perea, *supra* note 62, at 304-06.

123. *See* Andrade, *supra* note 62, at 609.

124. *See* Lorenzo A. Alvarado, *A Lesson from my Grandfather, The Bracero*, 22 CHICANO-LATINO L. REV. 55, 57-59 (2001).

125. *See* Andrade, *supra* note 62, at 609-12.

126. *See id.*

127. *See* Alvarado, *supra* note 124, at 60-64; Christopher David Ruiz Cameron, *Borderline Decisions: Hoffman Plastic Compounds, the New Bracero Program, and the Supreme Court's Role in Making Federal Labor Policy*, 51 UCLA L. REV. 1, 2-3 (2003).



maximum control over their workforce while discouraging collective action or expression of workers' rights.<sup>128</sup>

Employers hire crewleaders to recruit, manage, pay, and fire farmworkers.<sup>129</sup> The practice of using crewleaders is indicative of an unorganized, irregular, and relatively powerless workforce,<sup>130</sup> and it has increased with the rise of restrictive immigration policies that pressure employers to avoid hiring undocumented workers.<sup>131</sup> The practice allows employers to be insulated from workers, shift responsibility for occupational safety onto workers, and avoid liability for regulatory violations involving matters such as training, injuries, and lost wages.<sup>132</sup> It also has the potential of being highly exploitative and even dangerous for workers. In the past fifteen years, for example, prosecutors have brought numerous cases in Florida against unscrupulous crewleaders charged with crimes including extortion, kidnapping, illegal use of firearms, involuntary servitude, smuggling, and peonage—against members of their crews.<sup>133</sup>

#### IV. BIRTH DEFECTS CASE STUDIES

For farmworkers, the potentially adverse health effects of pesticide exposure and the systemic failures of a protective scheme were dramatically illustrated by several cases of infants born with severe birth defects to farmworker families in southwest Florida, near the town of Immokalee. According to the Coalition of Immokalee Workers (CIW), a community-based farmworker organization headquartered in Immokalee, Southwest Florida is the state's most important center for agricultural production, and Immokalee hosts the state's largest farmworker population.<sup>134</sup> Many of the farmworkers in this area work for large-scale tomato and citrus operations and may also travel along the entire East Coast to follow harvesting seasons.<sup>135</sup> Some farmworkers eventually move out of agricultural

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128. See Alvarado, *supra* note 124, at 71-73.

129. See Andrade, *supra* note 62, at 617 (In addition, crewleaders are responsible for contributing any required benefits and withholding income taxes for the workers they hire).

130. See Linder, *Crewleaders and Agricultural Sweatshops*, *supra* note 63, at 216-17.

131. See Luna, *supra* note 62, at 494-95.

132. See Andrade, *supra* note 62, at 616-17; Linder, *Crewleaders and Agricultural Sweatshops*, *supra* note 63, at 216-17.

133. See *CIW Anti-Slavery Campaign*, COALITION OF IMMOKALEE WORKERS, <http://www.ciw-online.org/slavery.html> (last visited Jan. 27, 2012) (The Coalition of Immokalee Workers, a community-based farmworker organization located in Southwest Florida, has assisted the prosecution with many cases and summarizes them on their website); see also JOHN BOWE, NOBODIES: MODERN AMERICAN SLAVE LABOR AND THE DARK SIDE OF THE NEW GLOBAL ECONOMY 1-78 (2008); BARRY ESTABROOK, TOMATOLAND: HOW MODERN INDUSTRIAL AGRICULTURE DESTROYED OUR MOST ALLURING FRUIT 73-96 (2011); *Modern Day Slavery: A Special Report*, PALM BEACH POST, <http://www2.palmbeachpost.com/moderndayslavery/index.html> (last visited Jan. 27, 2012) (In 2003, the *Palm Beach Post* published a comprehensive investigation of the impact of modern-day slavery on Florida's farmworkers).

134. See *About CIW*, COALITION OF IMMOKALEE WORKERS, <http://www.ciw-online.org/about.html> (last visited Jan. 27, 2012).

135. See *id.*

work and into other low-wage work such as that in the construction and service industries.<sup>136</sup> From 2005–2009, the regional media focused on six cases of infants born between late 2004–2006 with a range of birth defects. The first of these infants was, Carlos “Carlitos” Candelario, born on December 17, 2004, with Tetra-amelia syndrome (characterized by the absence of all four limbs).<sup>137</sup> On February 4, 2005, Jesus Navarrete was born with Pierre Robin syndrome (characterized by an underdeveloped jaw, retraction of the tongue, and upper airway obstruction).<sup>138</sup> Two days later, on February 6, 2005, an infant was born with multiple malformations—no nose, one ear, one kidney, a cleft lip and palate, and a lack of visible sex organs.<sup>139</sup> The third infant was at first named Jorge, but hours later renamed Violeta after her gender was finally determined.<sup>140</sup> Because of the severity of the birth defects, Violeta died within three days.<sup>141</sup> The common threads among these first three reported cases were that the parents of all of the infants lived within 200 feet of each other at the same Immokalee migrant labor camp; they were all from Mexico; and they all picked tomatoes for the same produce company, Ag-Mart, in the same fields in Florida and in North Carolina.<sup>142</sup> Most important, however, was that during the organogenetic period of pregnancy (days fourteen to fifty-nine, when birth defects are most likely to occur in a fetus) all three mothers worked in the same tomato fields not knowing that the areas had been recently treated with pesticides, including some that had been shown to be teratogenic in animals.<sup>143</sup>

In March 2005, the *Palm Beach Post* broke the story of the three infants and began what would become years of coverage about the cases<sup>144</sup> that eventually called into question the efficacy of the Florida Department of Agriculture and Consumer Services’ (FDACS) monitoring of pesticide use and enforcement of federal pesticide laws.<sup>145</sup> Around this time, the Collier County Health Depart-

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136. *See id.*

137. *See* Geoffrey M. Calvert, Walter A. Alarcon, Ann Chelminski, Mark S. Crowley, Rosanna Barrett, Adolfo Correa, Sheila Higgins, Hugo L. Leon, Jane Correia, Alan Becker, Ruth H. Allen & Elizabeth Evans, *Case Report: Three Farmworkers Who Gave Birth to Infants with Birth Defects Closely Grouped in Time and Place—Florida and North Carolina, 2004–2005*, 115 ENVTL. HEALTH PERSP. 787, 788 (2007).

138. *See id.*

139. *See id.*

140. *See* John Lantigua, *Why was Carlitos Born this Way?* PALM BEACH POST (Mar. 16, 2005), [www.palmbeachpost.com/localnews/content/local\\_news/epaper/2005/03/13/s1a\\_carlitos\\_0313.html](http://www.palmbeachpost.com/localnews/content/local_news/epaper/2005/03/13/s1a_carlitos_0313.html).

141. *See* Calvert et al., *supra* note 137, at 788.

142. *See* Christine Evans, *Three Babies, Countless Tears*, PALM BEACH POST, June 12, 2005, at A1; Lantigua, *supra* note 140.

143. *See* Calvert et al., *supra* note 137, at 787-88.

144. *See* Lantigua, *supra* note 140.

145. *See* FLA. STAT. §§ 487.011-487.2071 (2011) (In Florida, the Bureau of Compliance Monitoring, Division of Agricultural Environmental Services (AES), conducts field inspections to ensure compliance with the Florida Pesticide Law. Inspections and investigations are performed to determine “compliance with requirements covering worker protection, pesticide registration, proper pesticide use and applicator licensing”); John Lantigua & Christine Stapleton, *Florida Pesticide Monitoring Draws Fire*, PALM BEACH POST, Apr. 24, 2005, at A1; *About FDACS*, FLA. DEP’T OF AGRIC. & CONSUMER SERVS.,

ment (CCHD), FDACS, the North Carolina Department of Health and Human Services (NCDHHS), and the North Carolina Department of Agricultural and Consumer Services (NCDACS) also become aware of the cases.<sup>146</sup> Shortly thereafter, a joint investigation into Ag-Mart's pesticide operations commenced among Florida state agricultural inspectors and local and state health inspectors.<sup>147</sup> This investigation would later include Ag-Mart operations in North Carolina as well.<sup>148</sup> In September 2005, the Centers for Disease Control and Prevention (CDC) was alerted and assisted state health departments in Florida and North Carolina with the medical case reports of the infants.<sup>149</sup>

In early October 2005, the CCHD announced that "[t]he absence of any acute systemic effects reported in the mother's health and medical history, the diversity of and type of malformations involved, and the timing of potential exposures do not support or establish a causal association between the birth defects of concern and potential pesticide exposure in Florida."<sup>150</sup> In May 2006, NCDHHS also concluded that: "It cannot be determined with certainty whether maternal pesticide exposure caused birth defects in any of the case-infants because of the small number of cases, the lack of complete information on exposure dosage, and

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[http://www.freshfromflorida.com/about\\_fdacs.html](http://www.freshfromflorida.com/about_fdacs.html) (last visited Jan. 14, 2012) (Farmworker advocates and the media in Florida have long questioned whether there is a conflict of interest in housing the office that enforces pesticide regulation within the agency charged with protecting the agricultural industry); *Abundance of Poisons, Shortage of Monitoring*, PALM BEACH POST BLOG (May 1, 2005, 6:30 PM), [http://www.palmbeachpost.com/blogs/content/shared-blogs/palmbeach/editorial/entries/2005/05/abundance\\_of\\_po.html](http://www.palmbeachpost.com/blogs/content/shared-blogs/palmbeach/editorial/entries/2005/05/abundance_of_po.html) (In 2005, the Palm Beach Post reported that its investigation revealed that, "problems with the system exist from the farm field to the seats of government: failure to document exposures, failure to investigate properly those that are discovered, failure to hold growers responsible for violating federal pesticide laws, failure of the medical community to notify the state of possible pesticide cases, failure of state legislators to fund adequate protection and failure of the federal government to properly monitor the state's performance"); *Field Inspection*, FLA. DEP'T OF AGRIC. & CONSUMER SERV., DIV. OF AGRIC. ENVTL. SERVS., BUREAU OF COMPLIANCE MONITORING, <http://www.ftaes.org/complimonitoring/fieldinspection.html> (last visited on Jan. 27, 2012) (The Bureau states, "(T)hrough a cooperative agreement with the Environmental Protection Agency (EPA), the Bureau also documents violations of federal pesticide laws and rules. Case files which involve such violations may be submitted to the EPA for enforcement action." But the Division of AES is part of the Florida Department of Agriculture and Consumer Services (FDACS) and part of the stated mission of FDACS is "to safeguard the public and support Florida's agricultural economy by . . . assisting Florida's farmers and agricultural industries with the production and promotion of agricultural products").

146. See Calvert et al., *supra* note 137, at 787.

147. See *id.*

148. See *id.*

149. See *id.* (The CCHD, NCDHHS, and Florida Department of Health reviewed medical records for the three mothers and their infants. CCHD interviewed all six parents and NCDHHS interviewed the parents of Carlitos and Jesus. A University of Florida clinical geneticist and professor of pediatrics and genetics reviewed case summaries obtained from the medical records and provided the descriptions of the birth defects. Exposure information was obtained from NCDACS and FDACS. These agencies obtained pesticide application and worker assignment records from Ag-Mart).

150. COLLIER CNTY. HEALTH DEP'T, INVESTIGATION INTO THE OCCURRENCE OF CONGENITAL MALFORMATIONS IN IMMOKALEE, COLLIER COUNTY, FLORIDA (2005) [hereinafter CCHD REPORT].

other variables.”<sup>151</sup> In May 2007, local, state and federal health officials involved in the investigation in both states published a case report in the peer-reviewed journal, *Environmental Health Perspectives* (EHP), that confirmed “. . . the evidence available is inadequate to establish a causal relationship with pesticide exposure.”<sup>152</sup>

Despite their conclusions, the authors of the North Carolina report and the EHP article qualified their findings<sup>153</sup> and included strongly worded observations about systemic failures and recommendations to prevent future birth defects cases.<sup>154</sup> Farmworker advocates were critical about the depth of the investigation<sup>155</sup> and noted that the results came after Ag-Mart itself announced it would voluntarily discontinue its use of five chemicals that had been linked to birth defects.<sup>156</sup> Others questioned the assumption that current pesticide regulations

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151. OCCUPATIONAL & ENVTL. EPIDEMIOLOGY BRANCH DIV. OF PUB. HEALTH, N.C. DEP'T OF HEALTH & HUMAN SERVS., ASSESSMENT OF MATERNAL OCCUPATIONAL PESTICIDE EXPOSURES DURING PREGNANCY AND THREE CHILDREN WITH BIRTH DEFECTS: NORTH CAROLINA, 2004 (2006) [hereinafter NCDHHS REPORT].

152. Calvert et al., *supra* note 137, at 790.

153. *See id.* at 788, 790 (“Three farmworkers giving birth to infants with birth defects within an 8-week period is cause for concern. In Florida, approximately 3% of live births have major birth defects. There is evidence to suggest that the three observed major birth defects exceed this expected rate.”) The Article continues to describe the myriad of general barriers to making a complete scientific evaluation of birth defects cases, including: lack of information on the fertility rates among female farmworkers in Florida, lack of precise etiology of most human birth defects, lack of human epidemiological studies linking pesticide exposure to reproductive toxicity, and a lack of knowledge about the teratogenicity of synergistic pesticide exposure. The Article also describes shortcomings of their specific evaluation, including: inability to fully characterize the birth defect risk of a cohort of Ag-Mart employees, inability to determine the possibility of undetermined birth defects that could appear in the future, inability to conduct evaluations of genetic causes, reliance on company records of exposures, difficulties in extrapolating high dose animal cases to human cases, and the lack of information on paternal exposure); *see also* NCDHHS REPORT, *supra* note 151, at 25 (describing some of these same barriers and limitations. The report also pointed out that the observation that none of the mothers in the cases appeared to have experienced acute pesticide toxicity was flawed for two reasons: First, the women may not have recognized symptoms of pesticide toxicity such as nausea or headaches, which could have been attributed to pregnancy. Also, farmworker access to health care is often limited (in fact, none of the three case-mothers received prenatal care prior to the second trimester of pregnancy), and, even when care is available, physicians may not recognize pesticide-related illnesses. Second, there is evidence from animal studies and human experience that a fetus can be harmed without obvious toxicity in the mother.).

154. *See* Calvert et al., *supra* note 137, at 790 (Observations included a discussion about the dangers of failure to comply with existing pesticide regulation, poor enforcement standards, and improper pesticide applications, as well as the importance of farmworker training, access to prenatal health care, and adequate surveillance for all pesticide-related illnesses); NCDHHS REPORT, *supra* note 151, at 26-27 (The North Carolina report included specific state-level recommendations).

155. *See* Laura Layden & Janine Zeitlin, *Health Officials: Pesticides Not Likely at Fault for Birth Defects*, NAPLES DAILY NEWS (Oct. 13, 2005), [http://www.naplesnews.com/news/2005/oct/13/health\\_officials\\_pesticides\\_not\\_likely\\_fault\\_birth/](http://www.naplesnews.com/news/2005/oct/13/health_officials_pesticides_not_likely_fault_birth/) (reporting the late Shelly Davis, then Deputy Director of the Farmworker Justice Fund in Washington D.C., stated that the CCHD report barely probed the link between exposure and the birth defects: “They conclude it was not likely to have been pesticides but they don’t give any evidence to back that up . . . They have not even scratched the surface”).

156. *See* Christine Stapleton & Christine Evans, *Tomato Grower Drops Suspect Pesticides*, PALM BEACH POST, Oct. 1, 2005, at A1 (noting the five chemicals Ag-Mart discontinued included: Sencor, Monitor, Penncozeb, Vydate, and Agri-Mek. However, Ag-Mart refused to discontinue Methyl Bromide, one of only six conventional agricultural chemicals that have been suspected to carry reproductive risks

are protective of a developing fetus and expressed concern about the same limitations that the reports described, such as the facts that the investigators relied on application records provided by Ag-Mart (that were subsequently questioned by the company itself for accuracy) and that there was a lack of exposure assessment for the fathers of the children.<sup>157</sup>

One hour after the CCHD released its findings, FDACS announced it had issued two Administrative Complaints against Ag-Mart and named employees who were pesticide applicators at two company locations. The complaints alleged eighty-eight separate violations of state pesticide laws,<sup>158</sup> and FDACS levied a fine of \$111,200—believed at the time to be the largest of its kind imposed by FDACS.<sup>159</sup> A day after the Florida announcement, NCDACS issued a Notice of Violation to Ag-Mart for a record 369 violations of state pesticide laws and a fine of \$189,500.<sup>160</sup>

Some of the violations that could have directly impacted workers, such as the aforementioned pregnant women, included disregard of the WPS provisions regarding pesticide safety training; failure to display information about applied pesticides and observe the Restricted Entry Interval (REI); improper pesticide handling; unsafe operation of equipment; unavailability of decontamination supplies; use of prohibited mixtures of certain pesticides; and over-application of some pesticides.<sup>161</sup> Of particular concern at the time of the investigations were the alleged REI violations. Regulations regarding the REI are contained within the WPS, which states: “After the application of any pesticide on an agricultural establishment, the agricultural employer shall not allow or direct any worker to enter or to remain in the treated area before the restricted-entry interval specified

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when applied at high dosage levels. Ag-Mart stated that it could not find a suitable and cost-effective replacement for Methyl Bromide, a soil fumigant banned in the United States except for emergency or “critical use” exemptions. Andrew B. Yaffa, attorney for Carlitos’ parents, stated that the company’s decision to eliminate some pesticides [was] “essentially an admission that the chemicals they’ve been knowingly exposing these workers to do cause harm.”).

157. See FAWN PATTISON, AGRIC. RES. CTR./PESTICIDE EDUC. PROJECT, SUMMARY AND CRITIQUE OF NORTH CAROLINA’S REPORT ON PESTICIDES AND BIRTH DEFECTS AMONG THREE AG-MART WORKERS (2006).

158. See Recommended Order, Dep’t of Agric. and Consumer Servs. v. Ag-Mart Produce, Inc, 2007 WL 868589 (Fla. Div. Admin. Hearings 2007).

159. See Christine Evans, Christine Stapleton & John Lantigua, *State Fines Ag-Mart \$111,200 for Pesticide Violations*, PALM BEACH POST, Oct. 13, 2005, at A1.

160. See Christine Evans, Christine Stapleton & John Lantigua, *Ag-Mart also Accused of Violations in N.C.*, PALM BEACH POST (Oct. 14, 2005), <http://www.smfws.com/art10142005c.htm>; John Lantigua, *Ag-Mart fined \$931,000 in New Jersey*, PALM BEACH POST (Jan. 30, 2009), [www.palmbeachpost.com/hp/content/state/epaper/2009/01/30/0130agmart.html](http://www.palmbeachpost.com/hp/content/state/epaper/2009/01/30/0130agmart.html); Christine Stapleton, *Pesticide Cloud Hangs over Ag-Mart’s Florida-Grown Santa Sweets Tomatoes*, PALM BEACH POST (Dec. 20, 2005), [http://www.palmbeachpost.com/localnews/content/local\\_news/epaper/2005/12/20/c1a\\_SantaSweets\\_1220.html](http://www.palmbeachpost.com/localnews/content/local_news/epaper/2005/12/20/c1a_SantaSweets_1220.html) (In 2009, the New Jersey Department of Environmental Protection levied a fine on Ag-Mart for \$931,000—for serious pesticide violations including denying state environmental inspectors access to facilities, losing track of toxic compounds, failing to properly ventilate areas during pesticide use, and using forbidden mixtures of chemicals).

161. See Calvert et al., *supra* note 137, at 788.

on the pesticide labeling has expired, except as provided in this section.”<sup>162</sup>

Calvert explained that, according to company records provided during the initial investigations, the three mothers were exposed to potentially teratogenic pesticides early in their pregnancy, during organogenesis, and had even worked with these pesticides in fields where the REI had not yet expired.<sup>163</sup> For example, the fungicide Mancozeb has caused limb defects and cleft palate in laboratory rat studies.<sup>164</sup> According to records, Carlitos’ mother had possibly worked up to four days in fields in violation of the REI for Mancozeb.<sup>165</sup> There is animal evidence that the pesticide Methamidophos can cause anotia (missing ears), anencephaly (missing forebrain), paddle-shaped limbs, and microphthalmia (small eyes).<sup>166</sup> The mother of Violeta worked for at least three days in violation of the REI for Methamidophos and the mother of Jesus for at least one day.<sup>167</sup>

In December 2006, an administrative judge in North Carolina recommended that 271 of the 369 North Carolina violations against Ag-Mart be dropped and that the fine be reduced.<sup>168</sup> In March 2007, an administrative judge in Florida recommended that eighty-one of the eighty-eight Florida violations be dropped and that the fine be reduced to a total of \$11,400.<sup>169</sup> In October 2007, a second administrative judge in North Carolina recommended that the remaining violations in that state be reduced to seventeen and the fine reduced to \$6,000.<sup>170</sup> The recommendations for dismissal were based on several factors, but the most compelling were Ag-Mart’s allegations that state investigators had misinterpreted the company’s records regarding where the three women were working at the times in question; that the company provided a spreadsheet listing all the fields the women might have been working in and the investigators interpreted that data to show definite locations of the women.<sup>171</sup> In Florida, FDACS used these records to form the administrative complaints against Ag-Mart, but it had the

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162. 40 C.F.R. § 170.112 (2010).

163. See Calvert et al., *supra* note 137, at 789.

164. See *id.*

165. See *id.*

166. See *id.*

167. See *id.*

168. See Kristin Collins, *Ruling Benefits Ag-Mart*, THE NEWS & OBSERVER (Jan. 4, 2007), <http://www.newsobserver.com/2007/01/04/46011/ruling-benefits-ag-mart.html>.

169. See Laura Layden, *Judge: Drop Most Violations Against Ag-Mart*, NAPLES NEWS (Mar. 23, 2007), [http://www.naplesnews.com/news/2007/mar/23/judge\\_drop\\_most\\_violations\\_against\\_agmart/](http://www.naplesnews.com/news/2007/mar/23/judge_drop_most_violations_against_agmart/).

170. See Kristin Collins, *Judge Faults Case against Ag-Mart*, THE NEWS & OBSERVER (Oct. 9, 2007), [http://www.newsobserver.com/2007/10/09/96048\\_judge-faults-case-against-ag-mart.html](http://www.newsobserver.com/2007/10/09/96048_judge-faults-case-against-ag-mart.html).

171. See Recommended Order, *supra* note 158 (Count 38 of the Order states “The president of Ag-Mart, Mr. Long, confirmed that Ag-Mart does not keep records on which fields a worker is in on a given day. At the time the Department made its request, Mr. Long told [Ag-Mart human resource manager] Ms. Cassell that there was no way Ag-Mart could provide such precise worker location data. The closest they could come would be to correlate harvest or receiving data, which showed what plantings a crew had harvested from, with the workers’ time cards.” Count 48 alleges, “Ms. Fernandez, the case reviewer whose analysis led to the filing of the Administrative Complaints against Ag-Mart, believed the field location spreadsheets prepared by Ms. Cassell and her staff reflected the actual work locations for [the three mothers].” Finally, Count 51, states “. . . while Ag-Mart is at fault for not

burden to prove its allegations against the company by clear and convincing evidence in order to impose a fine. Its reliance on records that were, by the company's own admission, faulty did not establish that level of proof.<sup>172</sup>

The administrative judge's recommendations were not binding—the cases had to go back to their respective state agricultural departments. In North Carolina, the case continued when the state Pesticide Board rejected the administrative law judge's recommendations and agreed to hold a hearing on some of the violations.<sup>173</sup> In September 2008, the Pesticide Board began its hearing, which included testimony from Carlitos' parents. It finally voted unanimously to settle the case for \$25,000 in June 2010.<sup>174</sup>

Reaction to the birth defects cases was not confined to the media and state agencies. In October 2005, Florida-based Publix Super Markets, one of the top ten grocery store chains in the United States, announced that it would no longer sell Ag-Mart's popular Santa Sweets grape tomatoes.<sup>175</sup> In November that year, Wal-Mart, the nation's largest retailer, and its affiliate warehouse club, Sam's, stopped selling Santa Sweets, and Costco Wholesale Corp., the nation's largest warehouse club operator, stopped selling the grape tomatoes in its Florida stores.<sup>176</sup> Meanwhile, a social worker assisting the parents of Carlitos, Abraham Candelario and Francisca Herrera, contacted a private attorney, Andrew Yaffa, on their behalf.<sup>177</sup> Before he could proceed with litigation, Yaffa had to convince Carlitos' parents that they had legal rights despite their undocumented status.<sup>178</sup> He assured them that he would do everything he could to help them and that he

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explaining itself clearly, the Department [FDACS] is also at fault for insisting that the spreadsheet be taken at face value, no matter how implausible the result.”)

172. See Recommended Order, *supra* note 158, at Count 93 (The company records were also used by the CDC and state health departments in their investigations); Calvert et al., *supra* note 137, at 787; Layden, *supra* note 169.

173. See Kristin Collins, *State to Rethink 271 Charges in Ag-Mart Case*, THE NEWS & OBSERVER (Feb. 13, 2008), <http://www.newsobserver.com/2008/02/13/42222/state-to-rethink-271-charges-in.html> (The North Carolina Pesticide Board is a seven-member, governor-appointed board charged with the duty of administering the North Carolina Pesticide Law of 1971. The members represent different sectors of the regulated public. Members are appointed from the North Carolina Department of Agriculture & Consumer Services (1), The Department of the Environment and Natural Resources (1), The State Health Director or his designee and an individual representing an environmental protection agency (1), the agrochemical industry (1), the farm population (1), nongovernmental conservationist (1), and an at-large member representing the general public. See *N.C. Pesticides Board*, N.C. DEP'T OF AGRIC. & CONSUMER SERVS., <http://www.ncagr.gov/SPCAP/pesticides/board.htm>).

174. See Renee Chou, *State Agrees to Settle Ag-Mart Pesticide Case*, WRAL.COM (June 9, 2010), <http://www.wral.com/news/local/story/7751302/>.

175. See Christine Stapleton, Christine Evans & John Lantigua, *Publix Drops Ag-Mart Tomatoes*, PALM BEACH POST, Oct. 22, 2005, at A1 (Publix resumed stocking Santa Sweets in December 2005).

176. See Stapleton, *supra* note 160.

177. See ESTABROOK, *supra* note 133, at 38-40 (describing Yaffa's first meeting with Francisca Herrera).

178. See Telephone Interview with Andrew B. Yaffa, Partner, Grossman & Roth, P.A. (Apr. 23, 2008) [hereinafter Yaffa Interview].

was confident the case would succeed.<sup>179</sup> He quelled their fears of employer retaliation and deportation by convincing them to leave Ag-Mart and move to an undisclosed location for the duration of the lawsuit.<sup>180</sup> In February 2006, Yaffa filed suit against Ag-Mart in Hillsborough County, Florida Circuit Court on behalf of Carlitos and his parents, seeking damages for medical and hospital costs, lifetime care costs, disability, disfigurement, pain and suffering, mental anguish, and, eventually, punitive damages.<sup>181</sup> The case was based on premises liability, which allowed plaintiffs to avoid the complicated burden of proving the elements of causation required in toxic tort cases.<sup>182</sup> In this way, the civil lawsuit avoided the pitfall that the state investigators encountered in the administrative courts when they relied on Ag-Mart's poor records of applications and worker locations.<sup>183</sup>

In March 2008, the plaintiffs reached a confidential settlement with Ag-Mart Produce, Inc. on behalf of Carlitos.<sup>184</sup> The terms of the settlement were confidential but the plaintiff, Herrera, agreed that it was enough to care for Carlitos for the rest of his life.<sup>185</sup> In addition, the Tampa-based Shriner's Children's Hospital in Tampa and Miami Children's Hospital agreed to provide

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179. *See id.*

180. *See id.* (According to Yaffa, Carlitos' parents were actively recruited by labor contractors and brought into the country by *coyotes* (human smugglers who arrange border crossings). They dealt in silence with the substandard living and working conditions as they paid back the debt the *coyotes* claimed they incurred. Like most undocumented farmworkers, if Carlitos' parents believed they were being adversely exposed to pesticides at the workplace, they would not report the situation out of fear of employer retaliation and possible deportation).

181. *See id.*; Plaintiff's First Amended Complaint for Damages at 9-10, Francisca Herrera, Abraham Candelario & Carlos Herrera-Candelario v. Ag-Mart Produce, Inc., No. 06-001725 (Fla. Cir. Ct. Mar. 13, 2008); John Lantigua, *Farmworkers Sue Grower over Baby's Birth Defects*, PALM BEACH POST (Mar. 2, 2006), [http://www.palmbeachpost.com/hp/content/local\\_news/epaper/2006/03/02/s1b\\_carlitos\\_0302.html](http://www.palmbeachpost.com/hp/content/local_news/epaper/2006/03/02/s1b_carlitos_0302.html).

182. *See* Plaintiff's First Amended Complaint for Damages, *id.* at 3-6 (Generally, in a premises liability case, the owner of property owes a duty of reasonable care to prevent injury to a person whose presence is known to the landowner and the injury is caused by the active conduct or the landowner. In the current case, plaintiffs alleged that Defendant Ag-Mart owed a legal and common law duty of reasonable care to provide reasonably safe conditions for the unborn Carlitos and to warn of hazardous conditions within the Defendant's foreseeable zone of risk, that the Defendant breached that duty of care, and that as a direct and proximate result of that breach, Carlitos sustained injury); CLIFFORD RECHTSCHAFFEN & EILEEN GAUNA, ENVTL. JUST.: L., POL'Y, & REG. 261-63 (2003) (Had Plaintiff brought a toxic tort claim, Plaintiff would have had to prove both general causation—that the pesticides to which Herrera was exposed were *capable* of causing the type of injuries alleged (birth defects) at the levels of exposure alleged, and specific causation—that Herrera's exposure *actually* caused the alleged injuries).

183. *See* Yaffa Interview, *supra* note 178 (Instead, the broader theory allowed Yaffa to rely on general evidence developed that Ag-Mart's management was aware that the pesticides being used were toxic, that they allowed the pesticides to be applied close to workers, and that they that allowed other unsafe pesticide practices. Farmworkers like Carlitos' parents were sprayed without any education, without any informed choice about whether to be exposed to the spray or not).

184. *See* John Lantigua & Christine Stapleton, *Suit Over Limbless Boy, 3, Settled*, PALM BEACH POST (Mar. 25, 2008), [http://www.palmbeachpost.com/localnews/content/local\\_news/epaper/2008/03/25/m1a\\_carlitos\\_0325.html](http://www.palmbeachpost.com/localnews/content/local_news/epaper/2008/03/25/m1a_carlitos_0325.html).

185. *See id.*



care for Carlitos until he is 18.<sup>186</sup> In March 2009, the *Palm Beach Post* reported that three new birth defects cases had been filed in circuit courts in Collier and Hillsborough counties.<sup>187</sup> In one case, three-year-old Juan had multiple surgeries for a cleft lip and palate, and has brain damage; in another, three-year-old Yiovanni was diagnosed at birth with Dandy Walker Syndrome (a congenital brain malformation); and in the third case, a girl, Dahlia, was born with a deformed ear and defective liver.<sup>188</sup>

## V. CONCLUSION

Community residents, activists, advocates, and researchers involved in environmental justice cases have achieved some measured successes using a variety of strategies such as lobbying, obtaining injunctive relief, demonstrating disproportionate links between environmental risks and race/class, and even litigation.<sup>189</sup> However, the particular social, economic, and political factors that affect farmworkers, particularly undocumented ones, limit their access to these strategies. In contrast to a residential community, an occupational community such as that of farmworkers is often expected to assume certain work-related risks in exchange for compensation, but this expectation presumes that risks are known and willingly assumed. Although no workplace is risk-free, it is unlikely that parents would willingly undertake a risk if they knew it would result in harm to their children. Likewise, it is hard to imagine than an employer would willingly subject an employee to a risk if the employer knew it would harm a child.<sup>190</sup> The fact that the birth defects cases described above occurred shows not only that there are many unknown risks and not enough precaution with pesticide exposure, but also that farmworkers are a highly vulnerable community that is clearly not compensated enough for undertaking one of the riskiest occupations in the country. Farmworkers as a group have less ability to participate in political decision-making, less data and access to knowledge about occupational hazards,

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186. See *id.*; Christine Stapleton, *Ag-Mart to Pay for Limbless Child's Needs*, PALM BEACH POST (Apr. 17, 2008), [http://www.palmbeachpost.com/state/content/state/epaper/2008/04/17/w1a\\_CARLITOS\\_AGMART\\_0417.html](http://www.palmbeachpost.com/state/content/state/epaper/2008/04/17/w1a_CARLITOS_AGMART_0417.html).

187. See Christine Evans & John Lantigua, *Toxic Pesticides Debate and Pregnant Florida Farmworkers Rekindled with Three New Lawsuits*, PALM BEACH POST (Mar. 14, 2009), [http://www.palmbeachpost.com/news/content/local\\_news/epaper/2009/03/14/0314migrant.html](http://www.palmbeachpost.com/news/content/local_news/epaper/2009/03/14/0314migrant.html).

188. See *id.*

189. See Sherry Cable & Donald W. Hastings, *Different Voices, Different Venues: Environmental Racism Claims by Activists, Researchers, and Lawyers*, 9 HUM. ECOL. REV. 26, 34-36 (2002) (The admittedly limited successes have been hindered, however, by a lack of coordination and interaction between the various parties).

190. See *Ag-Mart Can't Prevent Employees who are Pregnant from Working*, PALM BEACH POST, Dec. 16, 2005, at 11A (noting that throughout the extensive media coverage and subsequent investigations of the birth defects cases, Don Long, president of Ag-Mart, where the mothers worked, maintained that the company's primary concern was the safety of their employees and finding out whether there was a link between pesticide use and the children's health).

less control over their workplaces, and less opportunity to organize and challenge the power structure. Although decades of progressive policymaking should have resulted in increased protection for these disenfranchised workers, the situation instead has grown more precarious. International trade agreements have affected migration trends, and simultaneous anti-immigrant policies in the U.S. have driven undocumented workers further underground, rendering them voiceless. Furthermore, the framework of regulatory protection is specious. It appears to be neutral and to allow for participation in the decision making process. But if pesticide regulation were displayed on a continuum from the time a substance is registered to the time a farmworker has a potential adverse exposure, one would find a series of systemic deficiencies. This particular regulatory failure begins at the federal level, where human health is not valued as a public good, but instead is weighed against industry's economic interests, and continues with the relegation of administrative and enforcement responsibilities to state agencies that have the potential for conflicts of interest. Finally, even when the mechanisms for protection exist, employers are able to circumvent them through labor practices that reduce employer responsibility for and diminish workers' control over workplace conditions.

This convergence of systemic failures at so many levels was tragically illustrated by the birth defects cases. After the intense media scrutiny and investigation of the cases, it initially appeared that there was progress in improving the situation for farmworkers. The public was made more aware of farmworker pesticide exposure; Ag-Mart announced it would discontinue the use of certain chemicals linked to birth defects in lab animals; administrative agencies levied fines against Ag-Mart for its regulatory violations; large retailers stopped selling some Ag-Mart tomatoes; and FDACS stated that it would request more funding to increase the number of pesticide inspectors. But some of these reactions were fleeting and likely initiated only to counter bad publicity rather than as a commitment to improve farmworker safety.<sup>191</sup> Even the successful settlement was limited in this respect. Although the plaintiffs' attorney used an innovative legal strategy, it is difficult to predict the long-term, environmental justice impact of individual lawsuits and settlements in cases involving farmworker pesticide exposure.

In situations involving large communities facing pernicious environmental inequities, traditional strategies singularly employed by activists, researchers, and lawyers have been limited.<sup>192</sup> It is suggested that these stakeholders would achieve more success if they pursued broader, more integrated, and innovative strategies.<sup>193</sup> For activists, these strategies include focusing on systemic inequities that intertwine with and perpetuate environmental injustice, and making

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191. See Evans & Lantigua, *supra* note 187.

192. See Cable & Hastings, *supra* note 189, at 35-36.

193. See *id.* at 36-38.

domestic and international links with broader constituencies from a variety of ethnic groups and social classes.<sup>194</sup> For researchers, these strategies include using community-based participatory methods that integrate affected community members into all components of the research.<sup>195</sup>

In environmental justice cases, lawyers can also bring about more effective and sustainable impacts by using methods similar to those employed by community-based participatory researchers, including strategies that are client-centered and that involve effective use of public awareness.<sup>196</sup> Environmental justice researchers have recognized that traditional litigation may not be the best way to bring about the widespread structural change that is ultimately needed.<sup>197</sup> Traditional environmental laws, however advanced they are, were not designed by or for environmental justice communities, and they do not address the systemic issues underlying injustices such as farmworker pesticide exposure.<sup>198</sup> The late environmental justice advocate Luke Cole theorized that whereas environmentalists may see contamination as a failure of government and industry to regulate, environmental justice activists see it as a government and industry success in that it represents the status quo of industry maximizing profits by externalizing costs.<sup>199</sup> Like other industries, the agricultural industry legitimizes the use of pesticides by claiming that toxins are necessary and inevitable and that if regulations are followed there is little danger.<sup>200</sup> But the toxic risk assessment of a chemical, upon which regulation is based, establishes only whether a single, particular contaminant endangers health in particular ways.<sup>201</sup> Regulation does not acknowledge problems if there is no existing scientific evidence indicating a problem could occur, even if there are cases of people becoming sick or experiencing health issues after an exposure.<sup>202</sup> The government has regulated as if it has certainty, and with no public recognition that nothing is certain about pesticides. The system continues as long as no one gets hurt, or rather, as long as those who are hurt remain silent.

Farmworker exposure to pesticides is as much a product of social and economic relations as it is a legal issue. Even if it were solely a legal issue, the legal sphere, including the approach offered by traditional litigation, often

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194. See *id.*; COAL. OF IMMOKALEE WORKERS, *supra* note 134; *About Us*, FARMWORKER ASS'N OF FLA., <http://www.floridafarmworkers.org/index.php/about-us> (last visited Jan. 27, 2012).

195. See Liam R. O'Fallon & Allen Deary, *Community-Based Participatory Research as a Tool to Advance Environmental Health Sciences*, 110 ENVTL. HEALTH PERSP. 155 (2002).

196. See Cable & Hastings, *supra* note 189, at 37.

197. See *id.* at 35-36; Luke W. Cole, *Empowerment as the Key to Environmental Protection: The Need for Environmental Poverty Law*, 19 ECOLOGY L.Q. 619, 641-42 (1992).

198. See Cole, *supra* note 197, at 642.

199. See *id.* at 643-44.

200. See Mary H. O'Brien, *When Harm is not Necessary: Risk Assessment as Diversion*, in RECLAIMING THE DEBATE, *supra* note 5, at 116-21.

201. See *id.*

202. See *id.*

reinforces the existing social and economic status quo.<sup>203</sup> Any type of litigation for an environmental injustice can shift control of the situation away from the affected community into the courts; cost communities precious time and resources; fail to achieve what the community needs in the first place—especially when the problem involves deeper social and political factors; and, in the end, lead to community disempowerment.<sup>204</sup> Nearly twenty years ago, Cole proposed a framework for environmental justice cases that used legal strategies as a means, in conjunction with other types of advocacy, to bring about systemic change.<sup>205</sup> He proposed an “environmental poverty law” that would address three questions historically used by activists to evaluate strategies for social change: 1. Will it educate people? 2. Will it build the movement? and 3. Will it address the root of the problem, rather than merely a symptom?<sup>206</sup>

An advocate seeking to help bring about a resolution to the problem of farmworkers and pesticide exposure would be well-guided by using these questions when forming a strategy, as well as by seeking out community, activist, and researcher partners to better triangulate an approach. Such an approach would help gain the trust of affected farmworkers and encourage them to come forward and participate in the advocacy. Farmworker trust is essential, but difficult to foster in the current social and economic environment. As the mother of Carlitos said after the settlement was announced: “There are many more with problems out there. But they are afraid to come forward.”<sup>207</sup> With the assistance of committed, aware advocates, however, farmworkers can challenge the structures that envelop their community and shift the power relations that keep them subject to toxic harm.

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203. See Cole, *supra* note 197, at 648 (“[U]sing a legal strategy, rather than a political one, would likely fail these communities: a legal victory does not change the political and economic power relations in the community that led to the environmental threat in the first place.”).

204. See *id.* at 650-51; Francis Calpotura, *Why the Law?* 5 THIRD FORCE MAG. 1, 52 (1994).

205. See Cole, *supra* note 197, at 661-68.

206. See *id.* at 668.

207. Stapleton, *supra* note 160.